E-8

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	standard interface for the attachment of any number of I/O devices." '650 patent, 7:24-27. "The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." ''650 patent, 9:37-45. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650 patent, 10:6-12.
a sensor configured to translate a physical condition into an analog version of the application system input.	"The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a

	weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10.
51. The system as defined in claim 49, wherein the at least one gateway translates the RF signal and the RF control signal into TCP/IP for communication over the WAN.	The above contentions for claim 49 are hereby incorporated by reference. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "Ensuring the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. To the extent that Plaintiffs contend that this claim limitation is not disclosed

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	explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote

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	ARPANET service hosts in the same way." Burchfiel page 250. The '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
52. The system as defined in claim 49, wherein the WAN in the Internet.	The above contentions for claim 49 are hereby incorporated by reference. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "Ensuring the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

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	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
53. The system as defined in claim 49, wherein the WAN is a dedicated Intranet.	The above contentions for claim 49 are hereby incorporated by reference. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "Ensuring the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
54. The system as defined in claim 49, wherein the at least one gateway is connected to the WAN by a network selected from the group consisting of a telecommunications network, private radio-frequency network, and a computer network.	The above contentions for claim 49 are hereby incorporated by reference. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "Ensuring the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63.

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	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
55. A method of collecting information and providing data services comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCC with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15.
adaptively configuring a data translator at the output of a local controller, wherein the data translator converts the output data stream into an information signal consisting of a transmitter code and an information field;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47.

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	"The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
adaptively configuring at least one transmitter with the data translator, wherein the transmitter converts the information signal into a low-power RF signal;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface

	capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.

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placing a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically wherein the low power RF signal is received and repeated as required to communicate the information signal to a gateway, the gateway providing access to a WAN;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13.

	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
translating the low-power RF signal within the gateway to a WAN compatible data transfer protocol;	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "Ensuring the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
transferring the translated low-power RF signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in said signal; and	"In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

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	"Ensuring the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
granting client access to the computer.	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
56. The method of claim 55 wherein the WAN is the Internet.	The above contentions for claim 55 are hereby incorporated by reference. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. "In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical

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	to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
57. The method of claim 55 wherein the WAN is an Intranet.	The above contentions for claim 55 are hereby incorporated by reference. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. "In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server

	network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249.

	Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
59. The method of claim 55 wherein the clients access the information using a web browser.	The above contentions for claim 55 are hereby incorporated by reference.

	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. "In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways:

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	1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘773 patent discloses: “Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. ‘773 patent, Figure 2. The ‘817 patent discloses: “FIG. 3 schematically illustrates a communication protocol in accordance with

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	the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
60. A method for controlling an existing control system with a local controller comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCC with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15.
adaptively configuring a data translator disposed between and in communication with both a local controller and a wireless transceiver, wherein the data translator is configured to translate the local controller data stream into an information signal consisting of a transceiver identification code and a concatenation of function codes, the data translator	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data

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further configured to translate control signals from the wireless transceiver into local controller recognized control signals;	acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer to peer operation. For example, a user application can issue a command of query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices. This allows server workload to be greatly reduced by allowing it to offload work to the data acquisition device which would otherwise have to be performed by the server. In addition, the offload process can be dynamically altered to suit network performance requirements or to circumvent problems due to equipment malfunction." '650 patent, 5:45-57. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely

	attached via cable." '650 patent, 7:9-13. "FIG. 3 illustrates another technique used by the DA 102 to reduce power consumption. This technique uses peer to peer data transfers to minimize the power required by the RF transceiver 210 by reducing the transmission distance required to contact the DCS 100. As shown in this figure, a remotely located DAs 102 (Numbers 1, 2 and 3) transfer data to DA 102 (number 4), which in turn transfers the data to DA 102 (number 5) which then transfers the data to DCS 100. This configuration allows a DCS 100 to receive data from a DA 102 which may be too remotely located to contact it at a low power setting. Those skilled in the art will recognize that the configuration of DAs 102 shown in this figure can be rearranged such that a variety of redundant data paths exist for transfer of data from any particular DA 102 to the DCS 100." '650 patent, 8:45-59. '650 patent, Figure 3. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. "The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." ''650 patent, 9:37-45.

	"Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650 patent, 10:6-12. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
remotely collecting data from the at least one relatively low-powered radio-frequency (RF) transceiver integrated with the data translator;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly

	line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13. "The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." ''650 patent, 9:37-45. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650 patent, 10:6-12.

processing the data into an RF signal;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13.

	"The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." ''650 patent, 9:37-45. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650 patent, 10:6-12.
transmitting the RF signal to a gateway;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102

	includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13. "The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." ''650 patent, 9:37-45. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650 patent, 10:6-12.
translating the data in the RF signal into a network transfer protocol;	"Ensuring that the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63.

	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. "In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22.
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by at least one sensor by generating an appropriate control signal;	"Ensuring that the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. "In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are

	used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22.
sending the control signal via the network to the gateway;	"Ensuring that the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. "In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22. "The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." ''650 patent, 9:37-45.

	"Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650 patent, 10:6-12.
translating the control signal from a network transfer protocol into an RF control signal;	"The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." ''650 patent, 9:37-45. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650patent, 10:6-12.
transmitting the RF control signal;	"The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." ''650 patent, 9:37-45. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter

	data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650 patent, 10:6-12.
receiving the RF control signal;	"The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." '’650 patent, 9:37-45. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650 patent, 10:6-12.
translating the received RF control signal into a local controller recognized control signal; and	"The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." '’650 patent, 9:37-45. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650 patent, 10:6-12.

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applying the local controller recognized control signal via a local control to effect the desired system response.	"The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." ''650 patent, 9:37-45. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache 202." '650 patent, 10:6-12.
61. The method of claim 60, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 60 are hereby incorporated by reference. "The DA 102 can be programmed to periodically (e.g., once a month) read the meters by issuing commands to the I/O device. The I/O device 206 can continuously read the meters or be powered down to conserve energy. In the preferred embodiment, the I/O device is kept in a low power state and activated under control of the DA 102. When I/O device is activated, it reads all of the meters 502, 504, 506 and transfers the measured data to DA 102." ''650 patent, 9:37-45. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 requests meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer meter data from all of the meters to its primary cache

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	202." '650 patent, 10:6-12. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
62. The method of claim 60, wherein the network is the Internet.	The above contentions for claim 60 are hereby incorporated by reference. "Ensuring that the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. "In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical

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	to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
63. The method of claim 60, wherein the network is an Intranet.	The above contentions for claim 60 are hereby incorporated by reference. "Ensuring that the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located

	anywhere to be provided to a single APP 112." '650 patent, 10:54-57. "In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into

	the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘773 patent discloses: “Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. ‘773 patent, Figure 2. The ‘817 patent discloses: “FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1.” ‘817 patent,

	6:1-8.
64. The method of claim 60, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 60 are hereby incorporated by reference. "Ensuring that the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent, 6:60-63. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. "In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2.

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	Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. ‘773 patent, Figure 2. The ‘817 patent discloses: “FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1.” ‘817 patent, 6:1-8.

Exhibit P6 – Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 5,963,650

The '732 Patent – Claim	U.S. Patent No. 5,963,650
1. A system for remote data collection, assembly, storage, event detection and reporting and control, comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCC with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22. "Referring to FIG. 1, this figure shows an overview block diagram of the

	system. The data collection system 100 (hereinafter, "DCS 100") in the preferred embodiment is a server, but may be any suitable system such as a mainframe computer, personal computer, specialized hardware, etc. For ease of discussion, the term processor 104 will be used to describe the primary data processing circuitry. However, processor 104 can be a processor, multiple processors, a microprocessor, an intelligent microcontroller, etc. DCS 100 controls data collection between user applications 112 (hereinafter "APP 112") and data acquisition devices 102 (hereinafter "DA 102")." '650 patent, 5:58-6:2. '650 patent, Figure 1. "Another feature shown by the foregoing figures is the shared hierarchical structure of the system. In particular, the DAs 102 may be shared by multiple APPs 112. … Likewise, APPs 112 may reside on a single DCS, or be distributed over a hierarchical network of computers." '650 patent, 8:33-44. "FIG. 3 illustrates another technique used by the DA 102 to reduce power consumption. This technique uses peer to peer data transfers to minimize the power required by the RF transceiver 210 by reducing the transmission distance required to contact the DCS 100. As shown in this figure, a remotely located DAs 102 (Numbers 1, 2 and 3) transfer data to DA 102 (number 4), which in turn transfers the data to DA 102 (number 5) which then transfers the data to DCS 100. This configuration allows a DCS 100 to receive data from a DA 102 which may be too remotely located to contact it at a low power setting. Those skilled in the art will recognize that the configuration of DAs 102 shown in this figure can be rearranged such that a variety of redundant data paths exist for transfer of data from any particular DA 102 to the DCS 100." '650 patent, 8:45-59. '650 patent, Figure 3.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

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	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically inter- faced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47.

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transceiver, and transceiver identification information associated with the transceiver making retransmission;	"The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

with one or more retransmit- ting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN and wherein at least one of said plurality of transceivers is also electrically interfaced with an actuator to control an actuated device.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses:

	"The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type

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	Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
13. In a system comprising a plurality of wireless devices configured for remote wireless communication and comprising a device for monitoring and controlling remote devices, the device comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCC with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "The foregoing examples concentrated on utility meter data collection as a

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	method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4.

	"I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. "I/O device 206 can be any suitable user designed unit required for a particular

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a data controller operatively coupled to the transceiver and the sensor, the data controller configured to control the transceiver and receive data from the sensor, the data controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204. For ease of discussion, RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and the I/O interface connector 204 are shown as separate components. However, the preferred embodiment envisions these components as a single integrated component." '650 patent, 7:1-10. '650 patent, Figure 2.
14. The device of claim 13, wherein the data controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The above contentions for claim 13 are hereby incorporated by reference. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the

	uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with

	the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247.

	"A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the

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	MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
16. The device of claim 13**,** wherein the data controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The above contentions for claim 13 are hereby incorporated by reference. "Primary cache 202 is used to store data and/or commands to or from the I/O device 206. By using the primary cache 202, a query from DCS 100 can be satisfied without activating I/O device 206 so long as the required data is in the cache 202. …In the preferred embodiment, a complete wireless networking protocol is stored in DA 102 which is capable of supporting both point to point and point to multi-point communications. In addition source routing of messages is included in the stored program to allow the transmission distance of DA 102 to be extended by routing messages across multiple DAs 102." '650. 7:28-35.

	"The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to

	implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23.

	Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity."

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	U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
17. The device of claim 13, wherein the data controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed	The above contentions for claim 13 are hereby incorporated by reference. "Primary cache 202 is used to store data and/or commands to or from the I/O device 206. By using the primary cache 202, a query from DCS 100 can be

data and the unique identification code	satisfied without activating I/O device 206 so long as the required data is in the cache 202. …In the preferred embodiment, a complete wireless networking protocol is stored in DA 102 which is capable of supporting both point to point and point to multi-point communications. In addition source routing of messages is included in the stored program to allow the transmission distance of DA 102 to be extended by routing messages across multiple DAs 102." '650. 7:28-35. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP

	112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses:

	"PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command

	the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions,

	commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
18. The device of claim 13, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the data controller can implement.	The above contentions for claim 13 are hereby incorporated by reference. "Primary cache 202 is used to store data and/or commands to or from the I/O device 206. By using the primary cache 202, a query from DCS 100 can be satisfied without activating I/O device 206 so long as the required data is in the cache 202. …In the preferred embodiment, a complete wireless networking protocol is stored in DA 102 which is capable of supporting both point to point and point to multi-point communications. In addition source routing of messages is included in the stored program to allow the transmission distance of DA 102 to be extended by routing messages across multiple DAs 102." '650. 7:28-35. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these

	devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1.
19. The device of claim 13, further comprising an actuator configured to receive command data from the controller and in response implement the command.	The above contentions for claim 13 are hereby incorporated by reference. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires

	data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248.

	U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for

Exhibit P6 – Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 5,963,650

	performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
31. A wireless communication system including wireless communication devices capable of wireless communication, the wireless communication system comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCC with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650

	patent, 3:1-15.
at least one wireless communication device comprising a transceiver, the transceiver having a unique identification code and being interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "Ensuring that the appropriate DA 102 communicates with the appropriate APP 112 is accomplished via any suitable identification protocol for communication devices." '650 patent 6:60-63. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice

	the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control transceiver operations and receive data from the sensor, the controller configured to format data packets for transmission via the transceiver with at least some data packets comprising data representative of data sensed with the sensor; and	"FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204. For ease of discussion, RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and the I/O interface connector 204 are shown as separate components. However, the preferred embodiment envisions these components as a single integrated component." '650 patent, 7:1-10. '650 patent, Figure 2.
wherein the controller is configured to receive control signals from a data packet and based on the control signals send instructions to an actuator to implement a command.	"The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires

	data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248.

Exhibit P6 – Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 5,963,650

	U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for

	performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
32. The wireless communication system of claim 31, further comprising at least one gateway connected to a WAN configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to a computing device over the WAN.	The above contentions for claim 31 are hereby incorporated by reference. "In systems which cover wide geographical or nationwide areas, many data collection systems may be linked together in a hierarchical or distributed server network, thereby allowing applications located on other computers or networks to access the data from a particular data acquisition device. By caching the data at the data collection system, substantial improvements in the overall system performance can be achieved. When global networks, such as the Internet, are used to access data acquisition devices worldwide, the use of the dual cache system described above becomes even more advantageous." '650 patent, 5:12-22. "Referring to FIG. 1, this figure shows an overview block diagram of the system. The data collection system 100 (hereinafter, "DCS 100") in the preferred embodiment is a server, but may be any suitable system such as a mainframe computer, personal computer, specialized hardware, etc. For ease of discussion, the term processor 104 will be used to describe the primary data processing circuitry. However, processor 104 can be a processor, multiple

	processors, a microprocessor, an intelligent microcontroller, etc. DCS 100 controls data collection between user applications 112 (hereinafter "APP 112") and data acquisition devices 102 (hereinafter "DA 102")." '650 patent, 5:58-6:2. '650 patent, Figure 1. "Another feature shown by the foregoing figures is the shared hierarchical structure of the system. In particular, the DAs 102 may be shared by multiple APPs 112. … Likewise, APPs 112 may reside on a single DCS, or be distributed over a hierarchical network of computers." '650 patent, 8:33-44. "FIG. 3 illustrates another technique used by the DA 102 to reduce power consumption. This technique uses peer to peer data transfers to minimize the power required by the RF transceiver 210 by reducing the transmission distance required to contact the DCS 100. As shown in this figure, a remotely located DAs 102 (Numbers 1, 2 and 3) transfer data to DA 102 (number 4), which in turn transfers the data to DA 102 (number 5) which then transfers the data to DCS 100. This configuration allows a DCS 100 to receive data from a DA 102 which may be too remotely located to contact it at a low power setting. Those skilled in the art will recognize that the configuration of DAs 102 shown in this figure can be rearranged such that a variety of redundant data paths exist for transfer of data from any particular DA 102 to the DCS 100." '650 patent, 8:45-59. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example:

	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all

	Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
33. The wireless communication system of claim 31, further comprising a computing device configured to receive user input and based on user input, the computing device formatting control signals, and wherein the controller is configured to receive the control signals via wireless transmission and take action based on the control signals.	The above contentions for claim 31 are hereby incorporated by reference. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a

	weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26.
34. The wireless communication system of claim 31, wherein the controller is configured to provide one or more function codes in the data packet in response to data sensed by the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "Primary cache 202 is used to store data and/or commands to or from the I/O device 206. By using the primary cache 202, a query from DCS 100 can be satisfied without activating I/O device 206 so long as the required data is in the cache 202. …In the preferred embodiment, a complete wireless networking protocol is stored in DA 102 which is capable of supporting both point to point and point to multi-point communications. In addition source routing of messages is included in the stored program to allow the transmission distance of DA 102 to be extended by routing messages across multiple DAs 102." '650. 7:28-35. "The system provides a remotely located data acquisition device which may be

	a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26.

	'650 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses:

	"The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses:

Exhibit P6 – Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 5,963,650

	"The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
35. The wireless communication system of claim 31, wherein the controller comprises a memory containing a plurality of function codes specific to the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "Primary cache 202 is used to store data and/or commands to or from the I/O device 206. By using the primary cache 202, a query from DCS 100 can be satisfied without activating I/O device 206 so long as the required data is in the

	cache 202. …In the preferred embodiment, a complete wireless networking protocol is stored in DA 102 which is capable of supporting both point to point and point to multi-point communications. In addition source routing of messages is included in the stored program to allow the transmission distance of DA 102 to be extended by routing messages across multiple DAs 102." '650. 7:28-35. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor

	104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the

	commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor

	4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements."

	'903, 4:23-31.

Exhibit P6 – Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 5,963,650

The '780 Patent – Claim	U.S. Patent No. 5,963,650
1. In a system comprising a plurality of wireless devices, a device comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCC with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from a second wireless transceiver in a predetermined signal type;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an

	I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may

Exhibit P6 – Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 5,963,650

	be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the second wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control the transceiver and receive data from the sensor, the controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214,

Exhibit P6 – Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 5,963,650

	and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2.
2. The device of claim 1, wherein the controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The contentions for claim 1 are hereby incorporated by reference. "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security

	sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Primary cache 202 is used to store data and/or commands to or from the I/O device 206. By using the primary cache 202, a query from DCS 100 can be satisfied without activating I/O

	device 206 so long as the required data is in the cache 202. …In the preferred embodiment, a complete wireless networking protocol is stored in DA 102 which is capable of supporting both point to point and point to multi-point communications. In addition source routing of messages is included in the stored program to allow the transmission distance of DA 102 to be extended by routing messages across multiple DAs 102." '650. 7:28-35. '650 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495.

	Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by

	monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-

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	3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
4. The device of claim 1, wherein the controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The contentions for claim 1 are hereby incorporated by reference. '650 patent, Figure 1. "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for

	numerous purposes." '650 patent, 3:1-15. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102

	through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Primary cache 202 is used to store data and/or commands to or from the I/O device 206. By using the primary cache 202, a query from DCS 100 can be satisfied without activating I/O device 206 so long as the required data is in the cache 202. …In the preferred embodiment, a complete wireless networking protocol is stored in DA 102 which is capable of supporting both point to point and point to multi-point communications. In addition source routing of messages is included in the stored program to allow the transmission distance of DA 102 to be extended by routing messages across multiple DAs 102." '650. 7:28-35. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

Exhibit P6 – Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 5,963,650

	For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps"

	which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device

	and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
5. The device of claim 1, wherein the controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code that identifies the transceiver.	The contentions for claim 1 are hereby incorporated by reference. "The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The

	detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "Primary cache 202 is used to store data and/or commands to or from the I/O device 206. By using the primary cache 202, a query from DCS 100 can be satisfied without activating I/O device 206 so long as the required data is in the cache 202. …In the preferred embodiment, a complete wireless networking protocol is stored in DA 102 which is capable of supporting both point to point and point to multi-point communications. In addition source routing of messages is included in the stored program to allow the transmission distance of DA 102 to be extended by routing messages across multiple DAs 102." '650. 7:28-35. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some

	anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be

	used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
6. The device of claim 1, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the controller can implement.	The contentions for claim 1 are hereby incorporated by reference. "Primary cache 202 is used to store data and/or commands to or from the I/O device 206. By using the primary cache 202, a query from DCS 100 can be satisfied without activating I/O device 206 so long as the required data is in the cache 202. …In the preferred embodiment, a complete wireless networking protocol is stored in DA 102 which is capable of supporting both

	point to point and point to multi-point communications. In addition source routing of messages is included in the stored program to allow the transmission distance of DA 102 to be extended by routing messages across multiple DAs 102." '650. 7:28-35.
7. The device of claim 1, further comprising an actuator configured to receive command data from the controller and in response implement a command.	The contentions for claim 1 are hereby incorporated by reference. "Anther technique used to reduce battery power consumption is to place the data acquisition device in a "sleep" mode, whereby the device normally rests in a lower power state until activated by a signal demanding a data reading. When the signal is received full power is applied to the data acquisition device (e.g. meter reading) is read, the data is transmitted to the data collection system, and the data acquisition device is placed back in sleep state until the next measurement is required." '650 patent, 1:63-2:4. "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for

	numerous purposes." '650 patent, 3:1-15. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the

	processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Primary cache 202 is used to store data and/or commands to or from the I/O device 206. By using the primary cache 202, a query from DCS 100 can be satisfied without activating I/O device 206 so long as the required data is in the cache 202. …In the preferred embodiment, a complete wireless networking protocol is stored in DA 102 which is capable of supporting both point to point and point to multi-point communications. In addition source routing of messages is included in the stored program to allow the transmission distance of DA 102 to be extended by routing messages across multiple DAs 102." '650. 7:28-35. '650 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S.

	Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports

	debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message

	with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
8. The device of claim 1, wherein the second transceiver is nearby to the transceiver.	The contentions for claim 1 are hereby incorporated by reference. '650 patent, Figure 1.

Exhibit P6 – Invalidity Chart for U.S. Patent No. 8,908,842 based on U.S. Patent No. 5,963,650

The '842 Patent – Claim	U.S. Patent No. 5,963,650
1. A device for communicating information, the device comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCS with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract.
a low-power transceiver configured to wirelessly transmit a signal comprising instruction data for delivery to a network of addressable devices;	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCS with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "Referring to FIG. 1, this figure shows an overview block diagram of the system. The data collection system 100 (hereinafter, "DCS 100") in the preferred embodiment is a server, but may be any suitable system such as a mainframe computer, personal computer, specialized hardware, etc. For ease of discussion, the term processor 104 will be used to describe the primary data processing circuitry. However, processor 104 can be a processor, multiple processors, a microprocessor, an intelligent microcontroller, etc. DCS 100 controls data collection between user applications 112 (hereinafter "APP 112") and data acquisition devices 102 (hereinafter "DA 102")." '650 patent, 5:58-6:2. '650 patent, Figure 1.
an interface circuit for communicating with a central location; and	"In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can

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	vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1.
a controller coupled to the interface circuit and to the low-power transceiver, the controller configured to establish a communication link between at least one device in the network of addressable devices and the central location using an address included in the signal, the communication link comprising one or more devices in the network of addressable, the controller further configured to receive one or more signals via the low-power transceiver and communicate information contained within the signals to the central location.	"Referring to FIG. 1, this figure shows an overview block diagram of the system. The data collection system 100 (hereinafter, "DCS 100") in the preferred embodiment is a server, but may be any suitable system such as a mainframe computer, personal computer, specialized hardware, etc. For ease of discussion, the term processor 104 will be used to describe the primary data processing circuitry. However, processor 104 can be a processor, multiple processors, a microprocessor, an intelligent microcontroller, etc. DCS 100 controls data collection between user applications 112 (hereinafter "APP 112") and data acquisition devices 102 (hereinafter "DA 102")." '650 patent, 5:58-6:2. '650 patent, Figure 1
7. The device of claim 1, wherein the controller is further	The contentions for claim 1 are hereby incorporated by reference.

Exhibit P6 – Invalidity Chart for U.S. Patent No. 8,908,842 based on U.S. Patent No. 5,963,650

configured to communicate a transceiver identification code to the central location via the interface circuit.	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
9. The device of claim 1, wherein transmitted and received signals further comprise a field configured to indicate a destination device for a subsequent transmission path to follow.	The contentions for claim 1 are hereby incorporated by reference. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
16. A device for communicating information, the device comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCS with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract.
a processor; and	"Referring to FIG. 1, this figure shows an overview block diagram of the system. The data collection system 100 (hereinafter, "DCS 100") in the preferred embodiment is a server, but may be any suitable system such as a mainframe computer, personal computer, specialized hardware, etc. For ease of discussion, the term processor 104 will be used to describe the

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	primary data processing circuitry. However, processor 104 can be a processor, multiple processors, a microprocessor, an intelligent microcontroller, etc. DCS 100 controls data collection between user applications 112 (hereinafter "APP 112") and data acquisition devices 102 (hereinafter "DA 102")." '650 patent, 5:58-6:2. '650 patent, Figure 1.
a memory, the memory comprising logical instructions that when executed by the processor are configured to cause the device to:	"Referring to FIG. 1, this figure shows an overview block diagram of the system. The data collection system 100 (hereinafter, "DCS 100") in the preferred embodiment is a server, but may be any suitable system such as a mainframe computer, personal computer, specialized hardware, etc. For ease of discussion, the term processor 104 will be used to describe the primary data processing circuitry. However, processor 104 can be a processor, multiple processors, a microprocessor, an intelligent microcontroller, etc. DCS 100 controls data collection between user applications 112 (hereinafter "APP 112") and data acquisition devices 102 (hereinafter "DA 102")." '650 patent, 5:58-6:2. '650 patent, Figure 1.
wirelessly transmit a signal comprising instruction data for delivery to a network of addressable low-power transceivers;	"The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to

	work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1.
establish a communication link between at least one low-power	In the preferred embodiment, APPs 112 can access any

transceiver in the network of addressable low-power transceivers and a central location based on an address included in the signal, the communication link comprising one or more low-power transceivers in the network of addressable low-power transceivers; and	appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1.
receive one or more low-power RF signals and communicate information contained within the signals to the central location along with a unique transceiver identification number over the communication link.	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCS with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10.

	In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. '650 patent, Figure 1.
17. A device for communicating information, the device comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCS with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract.
a low-power transceiver that is configured to wirelessly receive a signal including an instruction data from a remote device;	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCS with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract.

	"Referring to FIG. 1, this figure shows an overview block diagram of the system. The data collection system 100 (hereinafter, "DCS 100") in the preferred embodiment is a server, but may be any suitable system such as a mainframe computer, personal computer, specialized hardware, etc. For ease of discussion, the term processor 104 will be used to describe the primary data processing circuitry. However, processor 104 can be a processor, multiple processors, a microprocessor, an intelligent microcontroller, etc. DCS 100 controls data collection between user applications 112 (hereinafter "APP 112") and data acquisition devices 102 (hereinafter "DA 102")." '650 patent, 5:58-6:2. '650 patent, Figure 1.
an interface circuit for communicating with a central location;	"In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26.

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	'650 patent, Figure 1.
a controller coupled to the interface circuit and to the low-power transceiver, the controller being configured to establish a communication link between the remote device and the central location using address-indicative data included in the signal;	"Referring to FIG. 1, this figure shows an overview block diagram of the system. The data collection system 100 (hereinafter, "DCS 100") in the preferred embodiment is a server, but may be any suitable system such as a mainframe computer, personal computer, specialized hardware, etc. For ease of discussion, the term processor 104 will be used to describe the primary data processing circuitry. However, processor 104 can be a processor, multiple processors, a microprocessor, an intelligent microcontroller, etc. DCS 100 controls data collection between user applications 112 (hereinafter "APP 112") and data acquisition devices 102 (hereinafter "DA 102")." '650 patent, 5:58-6:2. '650 patent, Figure 1.
the controller further configured to receive one or more data signals from the central location via the interface circuit and communicate information contained within the signals to the remote device.	"In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26.

	'650 patent, Figure 1.

Exhibit P6 – Invalidity Chart for U.S. Patent No. 6,914,893 based on U.S. Patent No. 5,963,650

The '893 Patent – Claim	U.S. Patent No. 5,963,650
1. A system for communicating commands and sensed data between remote devices, the system comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCC with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer

	to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station, irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can

	be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2.
wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer

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	to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers,

	which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the

	length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the

	information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet."

	'252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
sender address comprising the unique address of the sending transceiver;	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices,

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	relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3.
a command indicator comprising a command code;	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3. "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for

	numerous purposes." '650 patent, 3:1-15. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42.
at least one data value comprising a scalable message; and	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3. "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed.

	Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers,

	which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the

	length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the

	information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet."

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an error detector comprising a redundancy check error detector; and	"A unique feature of the preferred embodiment is its use of pincodes to encrypt the CRC data. In the preferred embodiment,

	the networks 402, 406 use pincodes 404, 408 to encrypt the cyclic redundancy check (CRC) data. CRC data is well known in the art." '650, 9:9-14.
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages.	"Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
2. The system of claim 1, wherein the plurality of transceivers further comprise at least one integrated transceiver, wherein the integrated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference.
one of the plurality of transceivers; and	"FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204. For ease of discussion, RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and the I/O interface connector 204 are shown as separate components. However, the preferred embodiment envisions these components as a single integrated component. … For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102, can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:1-16.
a sensor detecting a condition and outputting a sensed data signal to the transceiver.	"FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214,

	and I/O interface connector 204. For ease of discussion, RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and the I/O interface connector 204 are shown as separate components. However, the preferred embodiment envisions these components as a single integrated component. … For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102, can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:1-16.
3. The system of claim 2, wherein the at least one integrated transceiver receives the preformatted command message requesting sensed data, confirms the receiver address as its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet, wherein the packets are equal to the number of segments.	The above contentions for claim 2 are hereby incorporated by reference. "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3.

10. The system of claim 1, wherein the plurality of transceivers further comprise at least one actuated transceiver, wherein the actuated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference.
one of the plurality of transceivers;	"The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42.

	"User applications may be any activity suitable for a system which requires data from a wide area to be transmitted to a central control point. For example, in a vineyard operation, each DA 112 could be a sensor device such as a weather station or ground water monitor, a unit of active equipment such as fertilizing or irrigation equipment, etc., or a combination of any of these devices. Each APP 112 can be used for a specific purpose such as water monitoring, fertilizing, etc." '650 patent, 6:2-10. "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26.
a sensor detecting a second condition and outputting a sensed data signal to the transceiver; and	"Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O

	device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
an actuator controlling a third condition and receiving control signals from the transceiver.	"Another technique used to reduce battery power consumption is to place the data acquisition device in a "sleep" mode, whereby the device normally rests in a low power state until activated by a signal demanding a data reading. When the signal is received, full power is applied to the data acquisition device, the data (e.g. meter reading) is read, the data is transmitted to the data collection system, and the data acquisition device is placed back in the sleep state until the next measurement is required." '650 patent, 1:63-2:4.
17. A system for communicating commands and sensed data between remote devices, the system comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCC with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and

	irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or unit of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-29. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "I/O device 206 can be any suitable user designed unit required for a particular function. For example, it can be a weather station,

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	irrigation equipment, manufacturing equipment, security system, etc. For ease of illustration, this figure illustrates the I/O device 206 as part of the DA 102. However, in practice the DA 102 can be attached directly to an I/O device 206 or it can be remotely attached via cable." '650 patent, 7:9-13. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages, wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202,

	program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header.

	ETE Header: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43.

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	‘252 patent, Figure 25. “The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll.” ‘252 patent, 39:28-43. ‘252 patent, Figure 31. “For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition

	to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing:

	Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
sender address comprising the unique address of the sending transceiver;	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3.

a command indicator comprising a command code;	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3. "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28.

	"A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host

	computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once

	every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses:

	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
at least one data value comprising a scalable message; and	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. '650 patent, Figure 3. "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses.

	Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and

	fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g.,

	information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some

	information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

	In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector comprising a redundancy check error detector;	"A unique feature of the preferred embodiment is its use of pincodes to encrypt the CRC data. In the preferred embodiment, the networks 402, 406 use pincodes 404, 408 to encrypt the cyclic redundancy check (CRC) data. CRC data is well known in the art." '650, 9:9-14.
wherein the controller sends preformatted command messages via	"Those skilled in the art will recognize that minor changes can be

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the controller transceiver, and the plurality of transceivers send preformatted response messages; and	made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
wherein at least one of the plurality of transceivers further sends preformatted emergency messages.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module,

	or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
18. The system of claim 17, wherein the controller maintains periods of silence by not sending the preformatted command messages during predetermined time periods; and	The above contentions for claim 17 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault

	messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
wherein the at least one of the plurality of transceivers detects a period of silence and sends the preformatted emergency message during the period of silence.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault

	messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
37. A method of communicating between geographically remote devices, the method comprising:	"A customizable data acquisition device (DA) and data collection system (DCS). The DA is remotely located for attachment to a variety of I/O devices, and uses an RF transceiver with a primary cache. A centrally located or mobile DCC with a secondary cache communicates with one or more DA's and stores DA data in the secondary cache." '650 patent Abstract "The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for

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	numerous purposes." '650 patent, 3:1-15.
sending a message;	"Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
receiving the message at one or more of the remote devices;	"Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
processing the message;	"Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
preparing a response message;	"Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
receiving the response message;	"Those skilled in the art will recognize that minor changes can be

	made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
processing the response message	"Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
wherein all messages comprise at least one packet, the packet having a predetermined format;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4.

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	'650 patent, Figure 2. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
wherein the predetermined format comprises:	
a receiver address comprising a scalable address of the at least one of the intended receiving remote devices;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2.

	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR,

	encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules

	belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source

	Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a sender address comprising an unique address of the sender;	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202,

Exhibit P6 – Invalidity Chart for U.S. Patent No. 6,914,893 based on U.S. Patent No. 5,963,650

	program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
a command indicator comprising a command code;	"The foregoing examples concentrated on utility meter data collection as a method of illustrating general data acquisition and power conservation concerns. However, those skilled in the art will recognize that a variety of applications exist for the collection of data, including industrial, manufacturing, financial, security and agriculture, to name just a few. Industrial processes may require monitoring of materials as they are processed. Manufacturing plants can be designed to control activity and parts delivery on an long assembly line. Remote devices such as ATMs can be monitored for maintenance and security. Security systems are needed for monitoring homes and businesses. Agricultural uses include control systems for fertilization and irrigation. As can be seen, data acquisition systems an be used for numerous purposes." '650 patent, 3:1-15. "The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a

	detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "The system provides a remotely located data acquisition device which may be a sensor or a piece of equipment which performs a specific active function, such as irrigation in agricultural environments or control of a manufacturing assembly line." '650 patent, 4:25-28. "A significant advantage of the program storage is that in combination with the uniform I/O connector interface, it allows a single interchangeable RF transceiver type to be customized to work with a wide variety of devices, such as weather or security sensors, agricultural devices, manufacturing equipment, etc." '650 patent, 5:37-42. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2.

Exhibit P6 – Invalidity Chart for U.S. Patent No. 6,914,893 based on U.S. Patent No. 5,963,650

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23.

	Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command

	station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data,

	functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. "As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.
a scalable data value comprising a scalable message; and	"The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47. "FIG. 2 provides a more detailed block diagram of the DA 102. The DA 102 includes RF Transceiver 210, primary cache 202, program storage 208, microprocessor 212, microcontroller 214, and I/O interface connector 204." '650 patent, 7:1-4. '650 patent, Figure 2.

	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '650 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '650 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR,

	encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules

	belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source

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an error detector that is a redundancy check error detector; and	"A unique feature of the preferred embodiment is its use of pincodes to encrypt the CRC data. In the preferred embodiment, the networks 402, 406 use pincodes 404, 408 to encrypt the cyclic redundancy check (CRC) data. CRC data is well known in the art." '650, 9:9-14.
wherein the steps of sending and receiving are repeated until the message is received by the intended receiver.	"As shown above, in FIG. 3, the DA 102 is also designed to function as a node in a mesh of RF-communicating devices, relaying information received from I/O devices 206 (which may be sensors or active devices), across the network in a daisy-chain form. Since each node is individually addressable, messages can be routed from source to destination via any number of nodes, without limiting the coverage area." '650 patent, 11:47-54.

Exhibit P7 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent No. 7,027,773

The '492 Patent – Claim	U.S. Patent No. 7,027,773
1. In a communication system to communicate command and sensed data between remote devices, the system comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a receiver address comprising a scalable address of at least one remote device;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates are feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended

	receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." '’773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR,

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	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source

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a command indicator comprising command code;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates are feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.

	"The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host

	computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once

	every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses:

	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a data value comprising a scalable message; and	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates are feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

Exhibit P7 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent No. 7,027,773

	For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson:

	"FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in

	several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual

	address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more

Exhibit P7 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent No. 7,027,773

	commercialized and proposing extensions for IP addressing.
a controller associated with a remote device comprising a transceiver configured to send and receive wireless signals, the remote device configured to send a preformatted message comprising the receiver address, a command indicator, and the data value via the transceiver to at least one other remote device.	"The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33.

	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
2. The system of claim 1, further comprising:	The above contentions for claim 1 are hereby incorporated by reference.
a plurality of transceivers each having a unique address, the	"It is an object of this invention to provide a low cost, multi-node

transceiver being one of the plurality of transceivers;	system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex™ network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm."

	'773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive

	the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54.
a plurality of controllers associated with each the controller associated with at least one of the transceivers, the controller being in communication with at least one other transceiver with a preformatted message, the preformatted message having at least one scalable field;	“The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a

	subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority

	and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean,

	structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units,

	address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network

	service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59.

	'252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
at least one sensor associated with at least one of the transceivers to detect a condition and output a data signal to the transceiver; and	"Each Minion device would include an interface to a sensor related to a measurable phenomenon located in close proximity to the Minion device itself." '773 patent, 41:46-49.
at least one actuator associated with at least one of the	"Additional objects includes providing a system a method which:

transceivers to activate a device.	*** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the

	Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
3. The system of claim 1, wherein the controller sends the preformatted message via an associated transceiver, and at least one transceiver sends the preformatted response message.	The above contentions for claim 1 are hereby incorporated by reference. "FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute

	the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19. '773 patent, Figures 9A and 9C.
4. The system of claim 1, wherein at least one transceiver receives the preformatted message requesting sensed data, confirms the receiver address as its own unique address, receives a sensed data signal, formats the sensed data signal into scalable byte segments, determines the number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 1 are hereby incorporated by reference. "FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10:27-33 and 13:6-19. '773 patent, Figures 9A and 9C.

	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers

	that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and

	receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network

	service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for

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	Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
6. The system of claim 1, wherein each remote device is adapted to transmit and receive radio frequency transmissions to and from at least one other transceiver.	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system

	having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex™ network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and

	(4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion.

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	Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54.
8. A method of communicating command and sensed data between remote wireless devices, the method comprising:	“It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-

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	node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
providing a receiver to receive at least one message;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56.

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	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex^{TM} network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options

	and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: e. the serial number of the Minion device generating the message (originator); f. the serial number of the Minion device transmitting the message (sender); g. the serial number of the Minion device intended to receive the message (recipient); h. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information,

	time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
wherein the message has a packet comprising a command indicator comprising a command code, a scalable data value comprising a scalable message, and an error detector that is a redundancy check error detector; and	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example,

	Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. "*A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than

	they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps"

	which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition

	device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the

	length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the

	information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet."

	'252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
providing a controller to determine if at least one received message is a duplicate message and determining a location from	"The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a

which the duplicate message originated.	subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-

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	bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
9. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices comprise geographically remote transceivers adapted to transmit and receive at least one message using radio frequency transmissions.	The above contentions for claim 8 are hereby incorporated by reference. "It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or

	explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52.
10. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices has a unique address and the packet further comprises at least one scalable address field to contain the unique address for at least one device.	The above contentions for claim 8 are hereby incorporated by reference. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for

	controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example,

	Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets:

	U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31.

	"For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present,

	resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375,

	October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
11. The method of claim 8, further comprising providing an actuator associated with at least one of the remote devices, the actuator configured to actuate in response to the command code.	The above contention for claim 8 is hereby incorporated by reference. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard

	fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some

	anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition

	devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
13. The method of claim 8, further comprising determining if an error exists in a packet of the at least one message.	The above contention for claim 8 is hereby incorporated by reference. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the

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	message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." '’773 patent, 14:5-20.
14. A wireless communication device for use in a communication system to communicate command and sensed data between remote wireless communication devices, the wireless communication device comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46.

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	'773 patent, Figure 1 and 2.
a transceiver configured to send and receive wireless communications; and	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a

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	terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex^{TM} network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: i. the serial number of the Minion device generating the message (originator);

	j. the serial number of the Minion device transmitting the message (sender); k. the serial number of the Minion device intended to receive the message (recipient); l. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to format a message comprising a receiver address comprising a scalable address of at least one remote wireless device; a command indicator	“The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference

comprising a command code, a data value comprising a scalable message.	frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates are feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the

	device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." ‘773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the ‘217 patent"), U.S. Patent No. 5,907,491 ("the ‘491 patent"), U.S. Patent No. 5,963,650 ("the ‘650 patent"), U.S. Patent No. 6,100,817 ("the ‘817 patent"), U.S. Patent No. 5,874,903 ("the

	'903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. "*A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header.

	ETE Header: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248.

	U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses:

	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g.,

	information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some

	information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

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	In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
15. The wireless communication device of claim 14, further comprising at least one sensor configured to detect a condition and output a signal to the controller.	The above contentions for claim 14 are hereby incorporated by reference. "Each Minion device would include an interface to a sensor

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	related to a measurable phenomenon located in close proximity to the Minion device itself." '773 patent, 41:46-49.
16. The wireless communication device of claim 14, wherein the controller is further configured to determine if at least one received message is a duplicate message and determine a location from which the duplicate message originated.	The above contentions for claim 14 are hereby incorporated by reference. "The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation

	systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet

	network." '773 patent; 22:13-19.
17. The wireless communication device of claim 14, further comprising at least one actuator configured to implement an action corresponding to the command code.	The above contention for claim 14 is hereby incorporated by reference. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as

	determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." ‘773 patent; 22:13-19.
18. The device of claim 14, wherein the transceiver comprises a unique transceiver address to distinguish the transceiver from other transceivers.	The above contentions for claim 14 are hereby incorporated by reference. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." ‘773 patent, 17:57-60. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the ‘217

	patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247.

	"A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses:

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	"Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
19. In a system for communicating commands and sensed data between remote devices comprising a communications device for communicating commands and sensed data, the communications device comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable

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	multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNetTM Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a transceiver operably configured to be in communication with at least one other of a plurality of transceivers, wherein the transceiver has a unique address, wherein the unique address identities the individual transceiver, wherein the transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with each of the other transceivers via preformatted messages;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g.,

	wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex^{TM} network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-

	60. "As shown in FIG. 4, a gateway Minion device 120 comprises a μMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the μMinion devices or receive data from the μMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: m. the serial number of the Minion device generating the message (originator); n. the serial number of the Minion device transmitting the message (sender); o. the serial number of the Minion device intended to receive the message (recipient); p. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although

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	number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
a controller configured to be in communication with the transceiver, the controller configured to provide preformatted messages for communication;	"The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared

	memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management.” ‘773 patent, 6:28-33. “The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission.” ‘’773 patent, 14:5-20. “Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. “The Data portion of a MinionNet network Standard Message

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	with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
wherein the preformatted message comprises at least one packet, wherein the packet comprises: a receiver address comprising a scalable address of the at least one of the intended receiving transceivers; sender address comprising the unique address of the sending transceiver; a command indicator comprising a command code; at least one data value comprising a scalable message; and an error detector comprising a redundancy check error detector; and wherein the controller is configured to interact with the transceiver to send preformatted command messages.	"The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most

	notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates are feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device

	and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter

	memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses:

	"The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent

	week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

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	In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: “FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers.” ‘252 patent, 38:34-43. ‘252 patent, Figure 25. “The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module

	sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing

	performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network

	numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
20. The communication device of claim 19, further comprising a sensor operatively configured to detect a condition and output a sensed data signal that corresponds to the condition to the transceiver.	The above contentions for claim 19 are hereby incorporated by reference. "Each Minion device would include an interface to a sensor related to a measurable phenomenon located in close proximity to the Minion device itself." '773 patent, 41:46-49.
21. The communication device of claim 20, wherein the transceiver is configured to receive a preformatted command message requesting sensed data, confirms the receiver address is its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 20 are hereby incorporated by reference. "FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the

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	message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10:27-33 and 13:6-19. '773 patent, Figures 9A and 9C. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
25. A wireless communication device for use in a communication system to communicate a number of commands and sensed data between remote wireless communication devices, the wireless communication device comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system

	having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a transceiver configured to send and receive wireless communications; and	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or

	wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex™ network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60.

	"As shown in FIG. 4, a gateway Minion device 120 comprises a μMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the μMinion devices or receive data from the μMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: q. the serial number of the Minion device generating the message (originator); r. the serial number of the Minion device transmitting the message (sender); s. the serial number of the Minion device intended to receive the message (recipient); t. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these

	serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to reformat a message comprising receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code; a data value comprising a scalable message.	"The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23.

	"A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates are feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information

	originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23.

	"A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. "*A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses:

	"The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data

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	for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

	In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module

	sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing

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	performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network

	numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

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The '661 Patent – Claim	U.S. Patent No. 7,027,773
1. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a

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	plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces

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transceiver, and transceiver identification information associated with the transceiver making retransmission; and	with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless

	communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.

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at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN.	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below

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	with regard to FIG. 7." '773 patent, 7:18-26.
5. A system for monitoring remote devices, comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"Sensors – Temperature, barometric pressure (for weather or altitude), magnetic flux, (for metal detection, change in attitude or compass), accelerometers (for motion, attitude change), motion or shock detectors, etc. may be connected." '773 patent, 49:16-19. "Meter Reading—Minion devices could be built in the form factor of a modem for inclusion in various advanced meter designs to provide remote meter reading capability. Similar opportunities exist for water and gas meters. The system would also provide remote meter reading capability for electric, gas and water, as well as numerous generation, production and distribution

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	applications, such as pipelines." '773 patent, 49:33-39. "Machine Status – Minion devices could be installed to provide inventory and coin-box status." '773 patent, 50:46-47.
at least one wireless transmitter electrically interfaced with the sensor and configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a radio-frequency (RF) signal;	"Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The basic µMinion devices may be used as stand-alone devices which perform the prescribed network functions, or they may be connected to or embedded in external equipment or devices. For example: …Building and Factory Management and Controls--Heating, Ventilation, Air Conditioning and Refrigeration equipment and their controls, including thermostats, humidity sensors, motion detectors, occupancy sensors, exit signs, door locks, lighting fixtures and controls, emergency alarms, signaling devices, security devices." '773 patent 48:50-49:2. "The µMinion is a low-cost, intelligent two-way data radio. It participates as a member of a self-organizing network of functionally identical nodes. Each µMinion can originate and receive data messages, and can act as an intermediary in forwarding messages on behalf of other µMinions." '773 patent, 51:60-64. "Messages which are transmitted between Minion devices will each contain a

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	header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40.
one or more additional wireless transmitters each electrically interfaced with a sensor and configured to receive the RF signal and retransmit the RF signal;	“The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging.” ‘773 patent, 4:44-46. ‘773 patent, Figure 1 and 2. “The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node.” ‘773 patent, 2:26-34.
at least one gateway connected a wide area network (WAN) configured to receive and translate the retransmitted RF signal, the gateway further configured to deliver the encoded electrical signal	“It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of

and transmitter identification information to a computer on the WAN; and	environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located	"Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52.

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device.	“This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm.” ‘773 patent, 7:6-17.
6. The system of claim 5, wherein the at least one gateway is permanently connected to the WAN.	The above contentions for claim 5 are hereby incorporated by reference. “As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7.” ‘773 patent, 7:18-26.
8. The system of claim 5, wherein the gateway translates the encoded electrical signal, the transmitter identification and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 5 are hereby incorporated by reference. “Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43.
9. A system for controlling a remote device comprising:	“Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services,

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	sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23.
a target remote device having an actuator to be controlled;	“Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management.” ‘773 patent, 6:28-33. “Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. “The Data portion of a MinionNet network Standard Message with a Type Code meaning “Command” will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network.” ‘773 patent; 22:13-19.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	“Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source.” ‘773 patent, 6:48-52. “This is accomplished by making a small percentage of the Minion devices in

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	the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.
a gateway connected to the WAN configured to receive and translate the at least one control signal	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.

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	"As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. '773 patent, Figure 4.
a wireless transmitter coupled with the gateway for transmitting a wireless signal that contains the control signal;	"The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figures 1 and 2 and 4.
a first wireless transceiver electrically interfaced with an actuator for receiving the wireless signal and further retransmitting the wireless signal to the target remote device; and	"Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "A number of major market areas have been identified most notably utility

	monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic

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	sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60.

	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits

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	of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
logic coupled to the target remote device for extracting the control signal from the retransmitted wireless signal and imparting an action on the actuator in response to the extracted control signal.	"The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses:

	"From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data

	storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses:

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	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
10. The system of claim 9, further comprising:	The above contentions for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	"The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34.
11. The system of claim 9, further comprising:	The above contentions for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator or a sensor and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless	"The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.

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signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	"The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34.
12. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand

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remotely located device, said computer integrated with a wide area network (WAN);	off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.
a plurality of non-earth orbiting transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand

configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17.

	"Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: e. the serial number of the Minion device generating the message (originator); f. the serial number of the Minion device transmitting the message (sender); g. the serial number of the Minion device intended to receive the message (recipient); h. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain

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	space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN.	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.

	"As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.
14. The system as defined claim 12, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 12 are hereby incorporated by reference. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.

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The '692 Patent – Claim	U.S. Patent No. 7,027,773
1. A system for remote data collection, assembly, and storage comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of

	environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.
at least one wireless transmitter configured to transmit select information and transmitter identification information;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand

	off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in

	the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options

	and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
a plurality of relatively low-power radio-frequency	"It is an object of this invention to provide a low cost, multi-node system which

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(RF) transceivers dispersed geographically at defined locations configured to receive select information transmitted from at least one nearby wireless transmitter and further configured to transmit the select information, the transmitter identification information and transceiver identification information; and	hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51.

	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless

	communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: e. the serial number of the Minion device generating the message (originator); f. the serial number of the Minion device transmitting the message (sender); g. the serial number of the Minion device intended to receive the message (recipient); h. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.

at least one gateway connected to the wide area network configured to receive and translate the select information, the transmitter identification information, and transceiver identification information, said gateway further configured to farther transmit the translated information to the computer over the WAN.	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below

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	with regard to FIG. 7." '773 patent, 7:18-26. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
3. The system as defined in claim 1, wherein each wireless transmitter is configured to transmit a relatively low-power, radio-frequency (RF) signal.	The above contentions for claim 1 are hereby incorporated by reference. "It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59.

	"The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate

	feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: i. the serial number of the Minion device generating the message (originator); j. the serial number of the Minion device transmitting the message (sender); k. the serial number of the Minion device intended to receive the message

	(recipient); l. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54.
4. The system as defined in claim 1, wherein each wireless transmitter is integrated with a sensor.	The above contentions for claim 1 are hereby incorporated by reference. “For example, the MinionNet network may be used as a geolocation network as described below. In this environment, this is accomplished by making a small percentage of the Minion devices in the field act as geoMinion devices 130 illustrated in block diagram form in FIG. 3. These geoMinion devices 130 interface with the global positioning systems (GPS) already in place to act as anchor points for locating other Minion devices.” ‘773 patent, 6:40-48. ‘773 patent, Figure 3. “Sensors – Temperature, barometric pressure (for weather or altitude),

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	magnetic flux (for metal detection, change in attitude or compass), accelerometers (for motion, attitude change), motion or shock detectors, etc. may be connected." '773 patent, 49:17-19. "Meter Reading – Minion devices could be built in the form factor of a modem for inclusion in various advanced meter designs to provide remote meter reading capability." '773 patent, 49:32-35.
5. The system as defined in claim 1, wherein the RF signal transmitted by the receiver contains a concatenation of information comprising select information and transmitter identification information from the originating transmitter and transceiver identification information for each transceiver that receives and repeats the RF signal.	The above contentions for claim 1 are hereby incorporated by reference. "In another form, the invention is a message having a protocol which permits the message to be successively transmitted by a wireless network of transceiver nodes employing node-to-node messaging. A message including data is sent from a first node originating via one or more intermediate nodes to a last node designated by the first node as the destination of the message. The message comprises: data bits corresponding to the data; originating bits identifying the first node from which the message originates; destination bits identifying the last node to which the message is destined; transmitting bits identifying the current node transmitting the message; and receiving bits identifying the next node intended to receive the message currently being transmitted." '773 patent, 2: 52-65. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information,

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	time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." ‘817 patent, 7:61-66.
6. The system as defined in claim 5, wherein the at least one transmitter is replaced by a transceiver, the transceiver further integrated with an actuator.	The above contentions for claim 5 are hereby incorporated by reference. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." ‘773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." ‘773 patent, 6:28-33. "Providing Gateway Services to the individual Minion devices means that all

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	Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
7. The system as defined in claim 6, wherein the transceivers are configured to communicate with the gateway via a RF signal.	The above contentions for claim 6 are hereby incorporated by reference. "It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of

	which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the

	nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. '773 patent, Figure 4. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below

	with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
8. The system as defined in claim 7, wherein the computer is further configured to respond to	The above contentions for claim 7 are hereby incorporated by reference.

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received select information by communicating a control signal to at least one transceiver, wherein the actuator integrated with the transceiver is responsive to the control signal.	"As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control

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	Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
11. The system as defined in claim 1, wherein the gateway includes one selected from the group consisting of:	The above contentions for claim 1 are hereby incorporated by reference.
a modem for establishing a dial-up connection with a remote computer; a network card for communicating across a local area network; a network card for communicating across the WAN, a DSL modem; and an ISDN card to permit backup access to the computer.	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. '773 patent, Figure 4.

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	"Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.
12. The system as defined in claim 1, wherein the gateway translates the select information, the transmitter identification, and the transceiver identification information to TCP/IP for communication over the WAN.	The above contentions for claim 1 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. '773 patent, Figure 4. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.
13. The system as defined in claim 1, wherein the WAN is the Internet.	The above contentions for claim 1 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in

	the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. '773 patent, Figure 4. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.
14. The system as defined in claim 1, wherein the WAN is a dedicated Intranet.	The above contentions for claim 1 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. '773 patent, Figure 4.

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	"Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.
24. A method for controlling a system comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.^{TM} devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet^{TM} Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
remotely collecting data from at least one sensor;	"For example, the MinionNet network may be used as a geolocation network as described below. In this environment, this is accomplished by making a small percentage of the Minion devices in the field act as geoMinion devices 130 illustrated in block diagram form in FIG. 3. These geoMinion devices 130

	interface with the global positioning systems (GPS) already in place to act as anchor points for locating other Minion devices." '773 patent, 6:40-48. '773 patent, Figure 3. "Sensors – Temperature, barometric pressure (for weather or altitude), magnetic flux (for metal detection, change in attitude or compass), accelerometers (for motion, attitude change), motion or shock detectors, etc. may be connected." '773 patent, 49:17-19. "Meter Reading – Minion devices could be built in the form factor of a modem for inclusion in various advanced meter designs to provide remote meter reading capability." '773 patent, 49:32-35.
processing the data into a radio-frequency (RF) signal;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet^{TM} Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46.

	'773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination,

	(3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: m. the serial number of the Minion device generating the message (originator); n. the serial number of the Minion device transmitting the message (sender); o. the serial number of the Minion device intended to receive the message (recipient); p. the serial number of the Minion device intended as the final destination of this message (destination); …

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	j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
transmitting the RF signal, via a relatively low-power transceiver, to a gateway;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet^{TM} Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773

	patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will be described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those

	serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." ‘773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." ‘773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: q. the serial number of the Minion device generating the message (originator); r. the serial number of the Minion device transmitting the message (sender); s. the serial number of the Minion device intended to receive the message (recipient); t. the serial number of the Minion device intended as the final destination

	of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54.
translating the data in the RF signal into a network transfer protocol;	“The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging.” ‘773 patent, 4:44-46. ‘773 patent, Figure 1 and 2. “It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system

	via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.
sending the translated data to a computer, wherein	"Providing Gateway Services to the individual Minion devices means that all

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the computer is configured to appropriately respond to the data generated by the at least one sensor by generating an appropriate control signal;	Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.
sending the control signal via the network to the gateway,	"Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.
translating the control signal from a network transfer protocol into an RF control signal;	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.
transmitting the RF control signal;	"As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Additional objects includes providing a system a method which: ***

	shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management.” ‘773 patent, 6:28-33. “Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. “The Data portion of a MinionNet network Standard Message with a Type Code meaning “Command” will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network.” ‘773 patent; 22:13-19. “The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area

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	will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
receiving the RF control signal;	"The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
translating the received RF control signal into an analog signal; and	"Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51.
applying the analog signal to an actuator to effect the desired system response.	"The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
25. The method of claim 24, wherein the RF signal contains a concatenation of information comprising encoded data information and transmitter identification information from an originating transmitter.	The above contentions for claim 24 are hereby incorporated by reference. "In another form, the invention is a message having a protocol which permits the message to be successively transmitted by a wireless network of transceiver nodes employing node-to-node messaging. A message including data is sent from a first node originating via one or more intermediate nodes to a last node designated by the first node as the destination of the message. The message comprises: data bits corresponding to the data; originating bits identifying the

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	first node from which the message originates; destination bits identifying the last node to which the message is destined; transmitting bits identifying the current node transmitting the message; and receiving bits identifying the next node intended to receive the message currently being transmitted." '773 patent, 2: 52-65. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
26. The method of claim 25, wherein the step of transmitting the RF signal is further performed by at least one transceiver, wherein the transceiver is	The above contentions for claim 25 are hereby incorporated by reference. "In another form, the invention is a message having a protocol which permits

configured to concatenate a transceiver identification code to the RF signal.	the message to be successively transmitted by a wireless network of transceiver nodes employing node-to-node messaging. A message including data is sent from a first node originating via one or more intermediate nodes to a last node designated by the first node as the destination of the message. The message comprises: data bits corresponding to the data; originating bits identifying the first node from which the message originates; destination bits identifying the last node to which the message is destined; transmitting bits identifying the current node transmitting the message; and receiving bits identifying the next node intended to receive the message currently being transmitted." '773 patent, 2: 52-65. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
27. The method of claim 25, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 25 are hereby incorporated by reference. "It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary

	nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages

	bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.

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	"Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: u. the serial number of the Minion device generating the message (originator); v. the serial number of the Minion device transmitting the message (sender); w. the serial number of the Minion device intended to receive the message (recipient); x. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
28. The method of claim 25, wherein the steps of translating and applying the received RF control signal are performed only by an identified	The above contentions for claim 25 are hereby incorporated by reference. "Additional objects includes providing a system a method which:

transceiver electrically integrated with an actuator.	*** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management.” ‘773 patent, 6:28-33. “This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm.” ‘773 patent, 7:6-17. “Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique.” ‘773 patent, 17:57-60. “The Data portion of a MinionNet network Standard Message with a Type Code meaning “Command” will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the

	MinionNet network." '773 patent; 22:13-19.
29. The method of claim 25, wherein the network is the Internet.	The above contentions for claim 25 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.
30. The method of claim 25, wherein the network is an Intranet.	The above contentions for claim 25 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.

	"Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.
31. The method of claim 25, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 25 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.
32. A system for monitoring remote devices comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple

	applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops'

	to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information,

	time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: y. the serial number of the Minion device generating the message (originator); z. the serial number of the Minion device transmitting the message (sender); aa. the serial number of the Minion device intended to receive the message (recipient); bb. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40.

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	"Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
at least one wireless transmitter configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a low-power radio-frequency (RF) signal;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops'

	to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information,

	time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." ‘773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." ‘773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: cc. the serial number of the Minion device generating the message (originator); dd. the serial number of the Minion device transmitting the message (sender); ee. the serial number of the Minion device intended to receive the message (recipient); ff. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." ‘773 patent, 18:14-40.

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at least one gateway connected a wide area network (WAN) configured to receive and translate the RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.

	"Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area

	will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." ‘773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." ‘773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: gg. the serial number of the Minion device generating the message (originator); hh. the serial number of the Minion device transmitting the message (sender); ii. the serial number of the Minion device intended to receive the message (recipient); jj. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time,

	history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	“As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7.” ‘773 patent, 7:18-26. “The Data portion of a MinionNet network Standard Message with a Type Code meaning “Command” will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network.” ‘773 patent; 22:13-19.
34. The system defined in claim 32, wherein each wireless transmitter is configured to transmit a relatively low-power radio-frequency (RF) signal.	“It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of

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	environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form

	in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below

	with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: kk. the serial number of the Minion device generating the message (originator); ll. the serial number of the Minion device transmitting the message (sender); mm. the serial number of the Minion device intended to receive the message (recipient); nn. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
36. The system defined in claim 32, wherein the gateway translates the encoded electrical signal, the	The above contentions for claim 32 are hereby incorporated by reference.

transmitter identification, and the transceiver identification information into TCP/IP for communicating over the WAN.	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol

	congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to

	implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
37. The system defined in claim 32, wherein the WAN in the Internet.	The above contentions for claim 32 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2.

	Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250.

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	"Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below.

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	However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
38. The system defined in claim 32, wherein the WAN is a dedicated Intranet.	The above contentions for claim 32 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.
42. A system for controlling remote devices comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple

	applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	"The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in

	the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
at least one gateway connected to the WAN configured to receive and translate the at least one control signal; said gateway further configured to transmit a radio-frequency (RF) signal containing the control signal and destination information;	"The MinionNet[TM] Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "It is an object of this invention to provide a low cost, multi-node system which

	hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.

	"The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
at least one wireless low-power RF transceiver configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator; and	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56.

	"The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.

	"Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a μMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the μMinion devices or receive data from the μMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: oo. the serial number of the Minion device generating the message (originator); pp. the serial number of the Minion device transmitting the message (sender); qq. the serial number of the Minion device intended to receive the message (recipient); rr. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an

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	issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response.	"Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.

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	"Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
43. The system defined in claim 42, the system input signal comprising:	The above contentions for claim 42 are hereby incorporated by reference.
a concatenation of information including data from a sensor, transceiver identification information from the originating transceiver, and transceiver identification information for each transceiver that receives and repeats the RF signal.	"In another form, the invention is a message having a protocol which permits the message to be successively transmitted by a wireless network of transceiver nodes employing node-to-node messaging. A message including data is sent from a first node originating via one or more intermediate nodes to a last node designated by the first node as the destination of the message. The message comprises: data bits corresponding to the data; originating bits identifying the first node from which the message originates; destination bits identifying the last node to which the message is destined; transmitting bits identifying the current node transmitting the message; and receiving bits identifying the next node intended to receive the message currently being transmitted." '773 patent, 2: 52-65. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver

	for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." ‘817 patent, 7:61-66.
46. The system defined in claim 42, wherein the gateway translates the RF signal and the RF control signal into TC/IP for communication over the WAN.	The above contentions for claim 42 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." ‘773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in

	the world and can be directed to any Minion device." '773 patent, 7:39-43.
47. The system defined in claim 42, wherein the WAN is the Internet.	The above contentions for claim 42 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses:

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	"When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors

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	110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
48. The system defined in claim 42, wherein the WAN is a dedicated Intranet.	The above contentions for claim 42 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based

	network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249.

	Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

	The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
49. A system for managing an arrangement of application specific remote devices comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a computer configured to execute a multiplicity of computer programs, each computer program	"The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773

executed to generate at least one control signal in response to at least one application system input, said computer integrated with a wide area network (WAN);	patent, 4:44-46. ‘773 patent, Figure 1 and 2. “It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial.” ‘773 patent, 1:43-59. “This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm.” ‘773 patent, 7:6-17. “As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless

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	communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
at least one gateway connected to the WAN configured as a two-way communication device to receive and translate the at least one control signal and the at least one application system input; said gateway further configured to translate and transmit a radio-frequency (RF) signal containing the control signal and destination information, said gateway further configured to receive and translate the at least one application system input and source information;	"The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59.

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	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
at least one wireless relatively low-power RF transceiver per computer program configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator and a sensor;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which

	permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway

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	Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a

	header area and a data area. The header area will contain the following bit fields: ss. the serial number of the Minion device generating the message (originator); tt. the serial number of the Minion device transmitting the message (sender); uu. the serial number of the Minion device intended to receive the message (recipient); vv. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command.…" '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access.…"

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	'773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response; and	"Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33.

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	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
a sensor configured to translate a physical condition into an analog version of the application system input.	"Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control,

	home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
51. The system as defined in claim 49, wherein the at least one gateway translates the RF signal and the RF control signal into TCP/IP for communication over the WAN.	The above contentions for claim 49 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in

	the world and can be directed to any Minion device." ‘773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: “The PRNET can also be accessed from other networks via an Internet gateway.” Jubin page 23. Burchfiel discloses: “When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway

	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP

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	protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
52. The system as defined in claim 49, wherein the WAN in the Internet.	The above contentions for claim 49 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

	Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor

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	104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
53. The system as defined in claim 49, wherein the WAN is a dedicated Intranet.	The above contentions for claim 49 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example:

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	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102.

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	The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
54. The system as defined in claim 49, wherein the at least one gateway is connected to the WAN by a network selected from the group consisting of a telecommunications network, private radio-	The above contentions for claim 49 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in

frequency network, and a computer network.	the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.
55. A method of collecting information and providing data services comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46.

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	‘773 patent, Figure 1 and 2.
adaptively configuring a data translator at the output of a local controller, wherein the data translator converts the output data stream into an information signal consisting of a transmitter code and an information field;	“It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial.” ‘773 patent, 1:43-59. “The MinionNet^{TM} Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging.” ‘773 patent, 4:44-46. ‘773 patent, Figure 1 and 2. “Messages are automatically routed through multiple device-to-device ‘hops’ to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration.” ‘773 patent, 4:53-56. “The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below.” ‘773 patent, 4:60-63. “Preferably, all Minion devices share a common structure in the form of a radio

	transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60.

	"As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: ww. the serial number of the Minion device generating the message (originator); xx. the serial number of the Minion device transmitting the message (sender); yy. the serial number of the Minion device intended to receive the message (recipient); zz. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling

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	bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
adaptively configuring at least one transmitter with the data translator, wherein the transmitter converts the information signal into a low-power RF signal;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand

	off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet^{TM} Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in

	the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options

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	and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d.. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54. "Additional objects includes providing a system a method which:

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	*** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management.” ‘773 patent, 6:28-33. “Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique.” ‘773 patent, 17:57-60. “The Data portion of a MinionNet network Standard Message with a Type Code meaning “Command” will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network.” ‘773 patent; 22:13-19.
placing a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically wherein the low power RF signal is received and repeated as required to communicate the information signal to a gateway, the gateway providing access to a WAN;	“It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning

	system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network

	such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit

	fields: a.. the serial number of the Minion device generating the message (originator); b.. the serial number of the Minion device transmitting the message (sender); c.. the serial number of the Minion device intended to receive the message (recipient); d.. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54. “Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23.

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	"A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
translating the low-power RF signal within the gateway to a WAN compatible data transfer protocol;	"Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.
transferring the translated low-power RF signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in said signal; and	"Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.
granting client access to the computer.	"Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.

56. The method of claim 55 wherein the WAN is the Internet.	The above contentions for claim 55 are hereby incorporated by reference. “This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm.” ‘773 patent, 7:6-17. “Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: “The PRNET can also be accessed from other networks via an Internet gateway.” Jubin page 23. Burchfiel discloses: “When some other network is present, it is important to provide connections

	between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116.

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	Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
57. The method of claim 55 wherein the WAN is an Intranet.	The above contentions for claim 55 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.

	"Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249.

	Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

	The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8
59. The method of claim 55 wherein the clients access the information using a web browser.	The above contentions for claim 55 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this

	limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses:

	"In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.

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60. A method for controlling an existing control system with a local controller comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
adaptively configuring a data translator disposed between and in communication with both a local controller and a wireless transceiver, wherein the data translator is configured to translate the local controller data stream into an information signal consisting of a transceiver identification code and a concatenation of function codes, the data translator further configured to translate control signals from the wireless transceiver into local controller recognized control signals;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or

	CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.

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	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." ‘773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." ‘773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message

	(sender); c. the serial number of the Minion device intended to receive the message (recipient); d.. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54. “Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control,

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	home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
remotely collecting data from the at least one relatively low-powered radio-frequency (RF) transceiver integrated with the data translator;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which

	permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway

	Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a

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	header area and a data area. The header area will contain the following bit fields: a.. the serial number of the Minion device generating the message (originator); b.. the serial number of the Minion device transmitting the message (sender); c.. the serial number of the Minion device intended to receive the message (recipient); d.. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54. “Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….”

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	'773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
processing the data into an RF signal;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to

	other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet^{TM} Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.

	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." '’773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a.. the serial number of the Minion device generating the message (originator);

	b.. the serial number of the Minion device transmitting the message (sender); c.. the serial number of the Minion device intended to receive the message (recipient); d.. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54. “Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance

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	management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
transmitting the RF signal to a gateway;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46.

	‘773 patent, Figure 1 and 2. “Messages are automatically routed through multiple device-to-device ‘hops’ to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration.” ‘773 patent, 4:53-56. “The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below.” ‘773 patent, 4:60-63. “Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source.” ‘773 patent, 6:48-51. “This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm.” ‘773 patent, 7:6-17. “The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination,

	(3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a.. the serial number of the Minion device generating the message (originator); b.. the serial number of the Minion device transmitting the message (sender); c.. the serial number of the Minion device intended to receive the message (recipient); d.. the serial number of the Minion device intended as the final destination of this message (destination); …

	j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each

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	Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
translating the data in the RF signal into a network transfer protocol;	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by at least one sensor by generating an appropriate control signal;	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm."

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sending the control signal via the network to the gateway;	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.
translating the control signal from a network transfer protocol into an RF control signal;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates

	multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based

	network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields:

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	a.. the serial number of the Minion device generating the message (originator); b.. the serial number of the Minion device transmitting the message (sender); c.. the serial number of the Minion device intended to receive the message (recipient); d.. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54. “Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23.

	"A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
transmitting the RF control signal;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless

	data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned

	during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a.. the serial number of the Minion device generating the message (originator); b.. the serial number of the Minion device transmitting the message (sender); c.. the serial number of the Minion device intended to receive the message (recipient);

	d.. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54. “Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management.” ‘773 patent, 6:28-33.

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receiving the RF control signal;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops'

	to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information,

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	MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
translating the received RF control signal into a local controller recognized control signal; and	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet^{TM} Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63.

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applying the local controller recognized control signal via a local control to effect the desired system	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off

response.	messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51.

	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion

	devices or receive data from the μMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a.. the serial number of the Minion device generating the message (originator); b.. the serial number of the Minion device transmitting the message (sender); c.. the serial number of the Minion device intended to receive the message (recipient); d.. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.

	"Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
61. The method of claim 60, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which

	permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet^{TM} Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will ne described below." '773 patent, 4:60-63. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-51. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway

	Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a

Exhibit P7 – Invalidity Chart for U.S. Patent No. 6,437,692 based on U.S. Patent No. 7,027,773

	header area and a data area. The header area will contain the following bit fields: a.. the serial number of the Minion device generating the message (originator); b.. the serial number of the Minion device transmitting the message (sender); c.. the serial number of the Minion device intended to receive the message (recipient); d.. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54. “Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….”

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	'773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
62. The method of claim 60, wherein the network is the Internet.	The above contentions for claim 60 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.

	"Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249.

	Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses:

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	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
63. The method of claim 60, wherein the network is an Intranet.	The above contentions for claim 60 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112.

	However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
64. The method of claim 60, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 60 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form

	in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an

	extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26.

	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.

Exhibit P7– Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 7,027,773

The '732 Patent – Claim	U.S. Patent No. 7,027,773
1. A system for remote data collection, assembly, storage, event detection and reporting and control, comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a

	plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet

	gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP

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	112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically inter- faced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning

type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission;	system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors

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	encountered during transmission." ''773 patent, 14:5-20. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture.

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	This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN and wherein at least one of said plurality of transceivers is also electrically interfaced with an actuator to control an actuated device.	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm."

	'773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as

	cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248.

	U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for

	performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
13. In a system comprising a plurality of wireless devices configured for remote wireless communication and comprising a device for monitoring and controlling remote devices, the device comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46.

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	'773 patent, Figure 1 and 2.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the

	message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: e. the serial number of the Minion device generating the message (originator); f. the serial number of the Minion device transmitting the message (sender); g. the serial number of the Minion device intended to receive the message (recipient); h. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time,

	history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	“The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging.” ‘773 patent, 4:44-46. ‘773 patent, Figure 1 and 2. “The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node.” ‘773 patent, 2:26-34.
a data controller operatively coupled to the transceiver and the sensor, the data controller configured to control the transceiver and receive data from the sensor, the data controller configured to format a data packet for transmission via the	“The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver

transceiver, the data packet comprising data representative of data sensed with the sensor.	to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the

	protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
14. The device of claim 13, wherein the data controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The above contentions for claim 13 are hereby incorporated by reference. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2.

	Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248.

	U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control."

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	'817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
16. The device of claim 13**,** wherein the data controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The above contentions for claim 13 are hereby incorporated by reference. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in

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	the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

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	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

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	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
17. The device of claim 13**,** wherein the data controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code	The above contentions for claim 13 are hereby incorporated by reference. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.

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	"The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses:

	"From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses:

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	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

Exhibit P7– Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 7,027,773

	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
18. The device of claim 13, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the data controller can implement.	The above contentions for claim 13 are hereby incorporated by reference. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.

19. The device of claim 13, further comprising an actuator configured to receive command data from the controller and in response implement the command.	The above contentions for claim 13 are hereby incorporated by reference. “Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management.” ‘773 patent, 6:28-33. “Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. “The Data portion of a MinionNet network Standard Message with a Type Code meaning “Command” will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network.” ‘773 patent; 22:13-19. “The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned

	during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the ‘217 patent"), U.S. Patent No. 5,907,491 ("the ‘491 patent"), U.S. Patent No. 5,963,650 ("the ‘650 patent"), U.S. Patent No. 6,100,817 ("the ‘817 patent"), U.S. Patent No. 5,874,903 ("the ‘903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the

	commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor

	4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

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31. A wireless communication system including wireless communication devices capable of wireless communication, the wireless communication system comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
at least one wireless communication device comprising a transceiver, the transceiver having a unique identification code and being interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to

	other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion

	devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: i. the serial number of the Minion device generating the message (originator); j. the serial number of the Minion device transmitting the message (sender); k. the serial number of the Minion device intended to receive the message (recipient); l. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.

a controller operatively coupled to the transceiver and the sensor, the controller configured to control transceiver operations and receive data from the sensor, the controller configured to format data packets for transmission via the transceiver with at least some data packets comprising data representative of data sensed with the sensor; and	"Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
wherein the controller is configured to receive control signals from a data packet and based on the	"Additional objects includes providing a system a method which: ***

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control signals send instructions to an actuator to implement a command.	shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Kahn, which is also directed to the PRNET, discloses: “From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated.” Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: “PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator.” Jubin page 23. “A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging.” Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: “The “function fields” provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process.” Burchfiel page 247. “A level-3 debugging protocol has been defined which supports debugging of remote PRU’s from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting “mousetraps” which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure.” Burchfiel page 248.

	U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control."

	'817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
32. The wireless communication system of claim 31**,** further comprising at least one gateway connected to a WAN configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to a computing device over the WAN.	The above contentions for claim 31 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type

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	codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." ‘773 patent; 22:13-19
33. The wireless communication system of claim 31, further comprising a computing device configured to receive user input and based on user input, the computing device formatting control signals, and wherein the controller is configured to receive the control signals via wireless transmission and take action based on the control signals.	The above contentions for claim 31 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." ‘773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2.

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	Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19
34. The wireless communication system of claim 31, wherein the controller is configured to provide one or more function codes in the data packet in response to data sensed by the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19

Exhibit P7– Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 7,027,773

35. The wireless communication system of claim 31, wherein the controller comprises a memory containing a plurality of function codes specific to the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Kahn, which is also directed to the PRNET, discloses: “From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated.” Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: “PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator.” Jubin page 23. “A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging.” Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: “The “function fields” provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process.” Burchfiel page 247. “A level-3 debugging protocol has been defined which supports debugging of remote PRU’s from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting “mousetraps” which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure.” Burchfiel page 248. U.S. Patent No. 5,907,491 discloses:

	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

	U.S. Patent No. 5,874,903 discloses: “Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements.” ‘903, 4:23-31.

Exhibit P7– Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 7,027,773

The '780 Patent – Claim	U.S. Patent No. 7,027,773
1. In a system comprising a plurality of wireless devices, a device comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from a second wireless transceiver in a predetermined signal type;	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system

Exhibit P7– Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 7,027,773

	having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and

	(4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion.

	Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the second wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	“The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission.” ‘’773 patent, 14:5-20.

Exhibit P7– Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 7,027,773

a controller operatively coupled to the transceiver and the sensor, the controller configured to control the transceiver and receive data from the sensor, the controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node." '773 patent, 2:26-34. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought

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	of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
2. The device of claim 1, wherein the controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The above contentions for claim 1 are hereby incorporated by reference. Additional objects includes providing a system a method which:

	*** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management.” ‘773 patent, 6:28-33. “Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. “The Data portion of a MinionNet network Standard Message with a Type Code meaning “Command” will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network.” ‘773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more

Exhibit P7– Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 7,027,773

	of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the

	measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity."

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	U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
4. The device of claim 1, wherein the controller is configured to receive data packets comprising a function code, and in response	The above contentions for claim 1 are hereby incorporated by reference.

to the function code, implement a function.	Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access….” ‘773 patent, 1:59-2:23. “A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management.” ‘773 patent, 6:28-33. “The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission.” ‘’773 patent, 14:5-20.

	"Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off,

	and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the

	command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater

	functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
5. The device of claim 1, wherein the controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code that identifies the transceiver.	The above contentions for claim 1 are hereby incorporated by reference. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect

Exhibit P7– Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 7,027,773

	errors encountered during transmission." ''773 patent, 14:5-20.
6. The device of claim 1, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the controller can implement.	The above contentions for claim 1 are hereby incorporated by reference. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses:

	"PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60.

	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
7. The device of claim 1, further comprising an actuator configured to receive command data from the controller and in response implement a command.	The above contentions for claim 1 are hereby incorporated by reference. Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought

	of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more

	of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the

	measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity."

	U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
8. The device of claim 1, wherein the second transceiver is nearby to the transceiver.	The above contentions for claim 1 are hereby incorporated by reference.

	"The devices used by the MinionNet network 100 are generally referred to as Minion devices and are actually extremely inexpensive two-way radios, such as a transceiver as will be described below." '217 patent, 4:60-63. '217 patent, Figure 1.

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The '842 Patent – Claim	U.S. Patent No. 7,027,773
1. A device for communicating information, the device comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a low-power transceiver configured to wirelessly transmit a signal comprising instruction data for delivery to a network of addressable devices;	"Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120

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	illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.
an interface circuit for communicating with a central location; and	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a

	µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.
a controller coupled to the interface circuit and to the low-power transceiver, the controller configured to establish a communication link between at least one device in the network of addressable devices and the central location using an address included in the signal, the communication link comprising one or more devices in the network of addressable, the controller further configured to receive one or more signals via the low-power transceiver and communicate information contained within the signals to the central location.	"Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.

	"Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.

7. The device of claim 1, wherein the controller is further configured to communicate a transceiver identification code to the central location via the interface circuit.	The above contentions for claim 1 are hereby incorporated by reference. “Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique.” ‘773 patent, 17:57-60. “As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7.” ‘773 patent, 7:18-26. “Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion.

	Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
9. The device of claim 1, wherein transmitted and received signals further comprise a field configured to indicate a destination device for a subsequent transmission path to follow.	The above contentions for claim 1 are hereby incorporated by reference. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options

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	and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: e. the serial number of the Minion device generating the message (originator); f. the serial number of the Minion device transmitting the message (sender); g. the serial number of the Minion device intended to receive the message (recipient); h. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information,

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	time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
16. A device for communicating information, the device comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a processor; and	"Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "This is accomplished by making a small percentage of the

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	Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.
a memory, the memory comprising logical instructions that when executed by the processor are configured to cause the device to:	"Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52.
wirelessly transmit a signal comprising instruction data for delivery to a network of addressable low-power transceivers;	"As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.

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establish a communication link between at least one low-power transceiver in the network of addressable low-power transceivers and a central location based on an address included in the signal, the communication link comprising one or more low-power transceivers in the network of addressable low-power transceivers; and	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient);

	d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54.
receive one or more low-power RF signals and communicate information contained within the signals to the central location along with a unique transceiver identification number over the communication link.	“This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network

	using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: e. the serial number of the Minion device generating the message (originator); f. the serial number of the Minion device transmitting the message (sender); g. the serial number of the Minion device intended to receive the message (recipient); h. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during

	manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
17. A device for communicating information, the device comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-

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	device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a low-power transceiver that is configured to wirelessly receive a signal including an instruction data from a remote device;	"Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.
an interface circuit for communicating with a central location;	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway

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	Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26.
a controller coupled to the interface circuit and to the low-power transceiver, the controller being configured to establish a communication link between the remote device and the central location using address-indicative data included in the signal;	"Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60.

	"As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: e. the serial number of the Minion device generating the message (originator); f. the serial number of the Minion device transmitting the message (sender); g. the serial number of the Minion device intended to receive the message (recipient); h. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command…." '773 patent, 18:14-40. "Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in

	some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes." '773 patent, 52:40-54.
the controller further configured to receive one or more data signals from the central location via the interface circuit and communicate information contained within the signals to the remote device.	"Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information

	originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.

Exhibit P7 – Invalidity Chart for U.S. Patent No. 6,914,893 based on U.S. Patent No. 7,027,773

The '893 Patent – Claim	U.S. Patent No. 7,027,773
1. A system for communicating commands and sensed data between remote devices, the system comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as

messages;	"Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set

	of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a μMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the μMinion devices or receive data from the μMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: a. the serial number of the Minion device generating the message (originator); b. the serial number of the Minion device transmitting the message (sender); c. the serial number of the Minion device intended to receive the message (recipient); d. the serial number of the Minion device intended as the final destination of this message (destination); … j. a type code that controls the interpretation of the data portion.

	Type codes include but are not limited to the following: position, time, history, request/response, command….” '773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” '773 patent, 52:40-54.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages;	“The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node.” '773 patent, 2:26-34. “Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source.” '773 patent, 6:48-52.

	"Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices

	means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the

	device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). …

	Routing Header: The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are

	supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network

	service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that

	uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
sender address comprising the unique address of the sending transceiver;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.

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a command indicator comprising a command code;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." ‘773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the ‘217 patent"), U.S. Patent No. 5,907,491 ("the ‘491 patent"), U.S.

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	Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports

	debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the

	preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
at least one data value comprising a scalable message; and	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the

	device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). …

	Routing Header: The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are

	supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network

	service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that

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an error detector comprising a redundancy check error detector; and	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.

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wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages.	"FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19.
2. The system of claim 1, wherein the plurality of transceivers further comprise at least one integrated transceiver, wherein the integrated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference. "Each Minion device would include an interface to a sensor related to a measurable phenomenon located in close proximity to the Minion device itself." '773 patent, 41:46-49.
one of the plurality of transceivers; and	"Each Minion device would include an interface to a sensor related to a measurable phenomenon located in close proximity to the Minion device itself." '773 patent, 41:46-49.

a sensor detecting a condition and outputting a sensed data signal to the transceiver.	"Each Minion device would include an interface to a sensor related to a measurable phenomenon located in close proximity to the Minion device itself." '773 patent, 41:46-49.
3. The system of claim 2, wherein the at least one integrated transceiver receives the preformatted command message requesting sensed data, confirms the receiver address as its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet, wherein the packets are equal to the number of segments.	"FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of

	the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used

	for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery

	subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

	Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
10. The system of claim 1, wherein the plurality of transceivers further comprise at least one actuated transceiver, wherein the actuated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference. Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-

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	bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.
one of the plurality of transceivers;	Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-

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	2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33.
a sensor detecting a second condition and outputting a sensed data signal to the transceiver; and	Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33.
an actuator controlling a third condition and receiving control signals from the transceiver.	Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most

	notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33.
17. A system for communicating commands and sensed data between remote devices, the system comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address,	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or

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wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.TM. devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "Messages are automatically routed through multiple device-to-device 'hops' to provide robust area coverage, redundancy, noise immunity and dynamic routing and reconfiguration." '773 patent, 4:53-56. "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17.

	"Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits." '773 patent, 14:11-17. "Each Minion device is assigned a unique serial number which is installed during manufacture that identifies that particular Minion device so that each Minion device is unique." '773 patent, 17:57-60. "As shown in FIG. 4, a gateway Minion device 120 comprises a µMinion device 110 configured to interface with a wide area network (WAN) interface 400. The WAN interface 400 would be in contact, either directly or wireless communication with other stations which would provide data to the µMinion devices or receive data from the µMinion devices. The power supply options and power control of the gateway Minion device 120 will be described below with regard to FIG. 7." '773 patent, 7:18-26. "Messages which are transmitted between Minion devices will each contain a header area and a data area. The header area will contain the following bit fields: e. the serial number of the Minion device generating the message (originator); f. the serial number of the Minion device transmitting the message (sender); g. the serial number of the Minion device intended to receive the message (recipient); h. the serial number of the Minion device intended as the

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	final destination of this message (destination); … j. a type code that controls the interpretation of the data portion. Type codes include but are not limited to the following: position, time, history, request/response, command….” ‘773 patent, 18:14-40. “Each Minion has a unique 32-bit serial number assigned during manufacture. This gives over four billion numbers, although number reuse is not as big an issue in this environment as it is in some others. Each message will contain space for four of these serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes.” ‘773 patent, 52:40-54.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages, wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	“The system comprises a plurality of at least three nodes. Each node hands off a message received from another node to a subsequent node. Each of the nodes comprises a transceiver receiving a message on the reference frequency from another node and transmitting the received message on the reference frequency to a subsequent node, and a controller controlling operation of the transceiver to receive the message transmitted by another node and to transmit the received message to a subsequent node.” ‘773 patent, 2:26-34.

	"Preferably, all Minion devices share a common structure in the form of a radio transceiver with antenna, microprocessor for controlling the transceiver, memory associated with the microprocessor and a power source." '773 patent, 6:48-52. "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. "A number of major market areas have been identified most notably utility monitoring and control, intelligent transportation systems (ITS), mobile finance management, building automation and control, factory automation and control, home automation and control, security and access control, and asset management." '773 patent, 6:28-33. "The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as

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	determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." ‘773 patent; 22:13-19.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of

	the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used

	for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery

	subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a “network message” field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet.” ‘252 patent, 55:40-59. ‘252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing “The Internet faces two serious scaling problems: address exhaustion and routing explosion.” Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

	Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
sender address comprising the unique address of the sending transceiver;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." '’773 patent, 14:5-20.
a command indicator comprising a command code;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended

	receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in

	the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses:

	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses:

	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
at least one data value comprising a scalable message; and	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of

	the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used

	for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery

	subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

	Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector comprising a redundancy check error detector;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages; and	"FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as

	indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19.
wherein at least one of the plurality of transceivers further sends preformatted emergency messages.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during

	special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
18. The system of claim 17, wherein the controller maintains periods of silence by not sending the preformatted command messages during predetermined time periods; and	The above contentions for claim 17 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more

	sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
wherein the at least one of the plurality of transceivers detects a period of silence and sends the preformatted emergency message during the period of silence.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more

	sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
37. A method of communicating between geographically remote devices, the method comprising:	"It is an object of this invention to provide a low cost, multi-node system which hands off messages from node-to-node; a system of nodes which hands off messages and provides implicit and/or explicit acknowledgment of the hand off; a flexible, adaptable multi-node system which is applicable in a plurality of environments and for a plurality of uses; a multi-node system having stationary nodes and mobile nodes (known as "Minion.™ devices") the position of which can be determined by the stationary nodes; a multi-node system which permits nodes to communicate with a wide area network or a global positioning system via a selected number of nodes; a multi-node system which operates multiple applications at each node; and a multi-node system which interfaces with a plurality of "gateways", e.g., wide area network (WAN) connections to other communications

	networks, whether wired or not, such as telephone or CATV or wireless, or satellite or terrestrial." '773 patent, 1:43-59. "The MinionNet™ Network 100 as illustrated in FIGS. 1 and 2 is a wireless data network characterized by short-range device-to-device messaging." '773 patent, 4:44-46. '773 patent, Figure 1 and 2.
sending a message;	"FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19.
receiving the message at one or more of the remote devices;	"FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is

	received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19.
processing the message;	"FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It

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	proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19.
preparing a response message;	"FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19.
receiving the response message;	"FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the

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	transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19.
processing the response message	"FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19.
wherein all messages comprise at least one packet, the packet having a predetermined format;	"The messages handled by the MinionNet network can be thought

	of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
wherein the predetermined format comprises:	
a receiver address comprising a scalable address of the at least one of the intended receiving remote devices;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would

	have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26.

	In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252

	patent, 39:28-43. ‘252 patent, Figure 31. “For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module’s assigned tier address for that network service module to be addressed.” ‘252, 42:18-39. “FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and “network message” field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. …

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	Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for

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	extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a sender address comprising an unique address of the sender;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." '773 patent, 14:5-20.
a command indicator comprising a command code;	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as

	determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ‘’773 patent, 14:5-20. "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." ‘773 patent; 22:13-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the ‘217 patent"), U.S. Patent No. 5,907,491 ("the ‘491 patent"), U.S. Patent No. 5,963,650 ("the ‘650 patent"), U.S. Patent No. 6,100,817 ("the ‘817 patent"), U.S. Patent No. 5,874,903 ("the ‘903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495.

	Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special

	requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-

Exhibit P7 – Invalidity Chart for U.S. Patent No. 6,914,893 based on U.S. Patent No. 7,027,773

	3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a scalable data value comprising a scalable message; and	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would

	have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26.

	In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: “FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers.” ‘252 patent, 38:34-43. ‘252 patent, Figure 25. “The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll.” ‘252

	patent, 39:28-43. ‘252 patent, Figure 31. “For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module’s assigned tier address for that network service module to be addressed.” ‘252, 42:18-39. “FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and “network message” field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. …

Exhibit P7 – Invalidity Chart for U.S. Patent No. 6,914,893 based on U.S. Patent No. 7,027,773

	Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for

	extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector that is a redundancy check error detector; and	"The messages handled by the MinionNet network can be thought of as being 32 bytes long and transferred at 9600 baud, although other data rates ate feasible. Each Minion device has a unique 32-bit serial number assigned during manufacture. … Each message will contain space for four of those serial numbers: (1) the message originator, (2) the message final destination, (3) the device actually transmitting for this hop, and (4) the intended receiver for this hop. Messages also contain a set of standard fields for message type codes, device status bits, message priority and handling bits. A payload area will contain application specific data such as geolocation information, time/date, etc., as determined by the message type codes. In addition, the protocol specifies a cyclic redundancy check (e.g., CRC) used to detect errors encountered during transmission." ''773 patent, 14:5-20.
wherein the steps of sending and receiving are repeated until the message is received by the intended receiver.	"The hop-to-hop routing is the same as for basic Minion device operation. Note that the burst data protocol causes an entire message to hop intact from one Minion device to the next." '773 patent, 15:30-33.

Exhibit P8 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent No. 6,100,817

The '492 Patent – Claim	U.S. Patent No. 6,100,817
1. In a communication system to communicate command and sensed data between remote devices, the system comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a receiver address comprising a scalable address of at least one remote device;	"Destination Address" at '817 patent, 6:45-55 (CEBUS Frame).

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin

	page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module,

	but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type.

	Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365,

	September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a command indicator comprising command code;	"Information Field" at '817 patent, 6:45-55 (CEBUS Frame). "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-

	3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23.

Exhibit P8 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent No. 6,100,817

	"A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the

	monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses:

	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a data value comprising a scalable message; and	"Information Field" at '817 patent, 6:45-55 (CEBUS Frame). "1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message … To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network implementation:" fields including Message Length). "4. Data thru-put The Information field in a CEBUS packet is limited to 32 bytes.

	The number of bytes in the information filed available for application information is summarized for different types of packets." ‘’817 patent, 15:22-47. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding

	through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one

	individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field),

	message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June

<u>**Exhibit P8 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent No. 6,100,817**</u>

	1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a controller associated with a remote device comprising a transceiver configured to send and receive wireless signals, the remote device configured to send a preformatted message comprising the receiver address, a command indicator, and the data value via the transceiver to at least one other remote device.	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
2. The system of claim 1, further comprising:	The above contentions for claim 1 are hereby incorporated by reference.
a plurality of transceivers each having a unique address, the transceiver being one of the plurality of transceivers;	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is

	preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.

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	'817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.

a plurality of controllers associated with each the controller associated with at least one of the transceivers, the controller being in communication with at least one other transceiver with a preformatted message, the preformatted message having at least one scalable field;	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
at least one sensor associated with at least one of the transceivers to detect a condition and output a data signal to the transceiver; and	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
at least one actuator associated with at least one of the transceivers to activate a device.	"Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation

	of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
3. The system of claim 1, wherein the controller sends the preformatted message via an associated transceiver, and at least one transceiver sends the preformatted response message.	The above contentions for claim 1 are hereby incorporated by reference. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
4. The system of claim 1, wherein at least one transceiver receives the preformatted message requesting sensed data, confirms the receiver address as its own unique address, receives a sensed data signal, formats the sensed data signal into scalable byte segments, determines the number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 1 are hereby incorporated by reference. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the

	individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "For group response messages in the preferred embodiments, the node is capable of eliciting individual responses from a selected group of meters by broadcasting a single command." '817 patent, 4:17-21. "The address fields used by the AMR system are buried in the CAL User Defined Message in the information field." '817 patent, 7:33-35. "1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-

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	3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message … To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network implementation:" fields including Message Length). "After a meter receives the node message and is waiting to transmit the response, it will use a Link layer filter to prevent other packets (responses to the node from other meters, etc.) from being passed to the meter application. This prevents the meter application from continually reading and processing received messages while waiting to transmit a response." '817 patent, 12:17-23. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers,

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	which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the

	length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the

	information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet."

	'252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
6. The system of claim 1, wherein each remote device is adapted	The above contentions for claim 1 are hereby incorporated by

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to transmit and receive radio frequency transmissions to and from at least one other transceiver.	reference. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter

	Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
8. A method of communicating command and sensed data between remote wireless devices, the method comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface,

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	digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
providing a receiver to receive at least one message;	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF

	communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support

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	As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
wherein the message has a packet comprising a command indicator comprising a command code, a scalable data value comprising a scalable message, and an error detector that is a redundancy check error detector; and	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the

	utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "For group response messages in the preferred embodiments, the node is capable of eliciting individual responses from a selected group of meters by broadcasting a single command." '817 patent, 4:17-21. "The address fields used by the AMR system are buried in the CAL User Defined Message in the information field." '817 patent, 7:33-35. "1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message … To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network implementation:" fields including Message Length).

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	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23.

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	"A.Packet Headers Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247.

	"A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses:

	"Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets:

	U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43.

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	'252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the

	nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.

	Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
providing a controller to determine if at least one received message is a duplicate message and determining a location from which the duplicate message originated.	"Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In the preferred embodiments of the invention, each response message from a meter contains the meter's unique address, and the Address Mask field is defined differently for meter response messages. For meter response messages, the bits of the Address Mask field are used by meters functioning as repeaters to indicate message transfer failure." '817 patent, 3:64-4:4. "No two meters responding to a message from the node are configured with the same timeslot but all meters responding to the message are configured with the same window size." '817 patent, 4:28-32.
9. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices comprise geographically remote transceivers adapted to transmit and receive at least one message using radio frequency transmissions.	The above contentions for claim 8 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18

	preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. "817 patent, Figure 1.
10. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices has a unique address and the packet further comprises at least one scalable address field to contain the unique address for at least one device.	The above contentions for claim 8 are hereby incorporated by reference. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "The address fields used by the AMR system are buried in the CAL User Defined Message in the information field." '817 patent, 7:33-35. "1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message

	… To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network implementation:" fields including Message Length). To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for

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	routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service

	module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to

	addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
11. The method of claim 8, further comprising providing an actuator associated with at least one of the remote devices, the actuator configured to actuate in response to the command code.	The above contention for claim 8 is hereby incorporated by reference. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner

	disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23.

	"A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the

	command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a

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	repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
13. The method of claim 8, further comprising determining if an error exists in a packet of the at least one message.	The above contention for claim 8 is hereby incorporated by reference. "1. The Basic CEBUS Protocol" '817 patent, 6:44-55 (CEBUS frame table showing Chksum).
14. A wireless communication device for use in a communication system to communicate command and sensed data between remote wireless communication devices, the wireless communication device comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C,

	. . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a transceiver configured to send and receive wireless communications; and	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol;

	and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered

	'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to format a message comprising a receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code, a data value comprising a scalable message.	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64.

	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR

	message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "For group response messages in the preferred embodiments, the node is capable of eliciting individual responses from a selected group of meters by broadcasting a single command." '817 patent, 4:17-21. "The address fields used by the AMR system are buried in the CAL User Defined Message in the information field." '817 patent, 7:33-35. "1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message … To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network

	implementation:" fields including Message Length). To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging."

	Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it

	selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity."

	U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

	In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module

	sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing

	performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network

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	numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
15. The wireless communication device of claim 14, further comprising at least one sensor configured to detect a condition and output a signal to the controller.	The above contentions for claim 14 are hereby incorporated by reference. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
16. The wireless communication device of claim 14, wherein the controller is further configured to determine if at least one received message is a duplicate message and determine a location from which the duplicate message originated.	The above contentions for claim 14 are hereby incorporated by reference. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In the preferred embodiments of the invention, each response message from a meter contains the meter's unique address, and

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	the Address Mask field is defined differently for meter response messages. For meter response messages, the bits of the Address Mask field are used by meters functioning as repeaters to indicate message transfer failure." '817 patent, 3:64-4:4. "No two meters responding to a message from the node are configured with the same timeslot but all meters responding to the message are configured with the same window size." '817 patent, 4:28-32.
17. The wireless communication device of claim 14, further comprising at least one actuator configured to implement an action corresponding to the command code.	The above contention for claim 14 is hereby incorporated by reference. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. To the extent that Plaintiffs contend that this claim limitation is

	not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses:

	"The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data

	for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data,

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	functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
18. The device of claim 14, wherein the transceiver comprises a unique transceiver address to distinguish the transceiver from other transceivers.	The above contentions for claim 14 are hereby incorporated by reference. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29.
19. In a system for communicating commands and sensed data between remote devices comprising a communications device for communicating commands and sensed data, the communications device comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or

	business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a transceiver operably configured to be in communication with at least one other of a plurality of transceivers, wherein the transceiver has a unique address, wherein the unique address identities the individual transceiver, wherein the transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with each of the other transceivers via preformatted messages;	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with

	the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-

	35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
a controller configured to be in communication with the transceiver, the controller configured to provide preformatted messages for communication;	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
wherein the preformatted message comprises at least one packet, wherein the packet comprises: a receiver address comprising a scalable address of the at least one of the intended receiving transceivers; sender address comprising the unique address of the sending transceiver; a command indicator comprising a command code; at least one data value comprising a scalable message; and an error detector comprising a redundancy check error detector; and wherein the controller is configured to interact with the	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol,

transceiver to send preformatted command messages.	wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "For group response messages in the preferred embodiments, the

	node is capable of eliciting individual responses from a selected group of meters by broadcasting a single command." '817 patent, 4:17-21. "The address fields used by the AMR system are buried in the CAL User Defined Message in the information field." '817 patent, 7:33-35. "1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message … To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network implementation:" fields including Message Length). To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more

	of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean,

	structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps"

	which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition

	device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link

	packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for

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	each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43

	illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

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20. The communication device of claim 19, further comprising a sensor operatively configured to detect a condition and output a sensed data signal that corresponds to the condition to the transceiver.	The above contentions for claim 19 are hereby incorporated by reference. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
21. The communication device of claim 20, wherein the transceiver is configured to receive a preformatted command message requesting sensed data, confirms the receiver address is its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 20 are hereby incorporated by reference. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in

	accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "For group response messages in the preferred embodiments, the node is capable of eliciting individual responses from a selected group of meters by broadcasting a single command." '817 patent, 4:17-21. "The address fields used by the AMR system are buried in the CAL User Defined Message in the information field." '817 patent, 7:33-35. "1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message

	… To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network implementation:" fields including Message Length). "After a meter receives the node message and is waiting to transmit the response, it will use a Link layer filter to prevent other packets (responses to the node from other meters, etc.) from being passed to the meter application. This prevents the meter application from continually reading and processing received messages while waiting to transmit a response." '817 patent, 12:17-23. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header

	and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43.

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	'252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network

	service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP

	addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
25. A wireless communication device for use in a communication system to communicate a number of commands and sensed data between remote wireless communication devices, the wireless communication device comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message

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	packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a transceiver configured to send and receive wireless communications; and	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by

	which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading

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	System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to reformat a message comprising receiver address comprising a scalable address of at	"Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for

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least one remote wireless device; a command indicator comprising a command code; a data value comprising a scalable message.	Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example,

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	Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than

	they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps"

	which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition

	device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link

	packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for

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	each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43

	illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

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The '661 Patent – Claim	U.S. Patent No. 6,100,817
1. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a

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	prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64.

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information associated with the transceiver making retransmission; and	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN.	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or

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	sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1.
5. A system for monitoring remote devices, comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail

	herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown, the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers." '817 patent,

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	5:58-64. '817 patent, figures 1 and 2.
at least one wireless transmitter electrically interfaced with the sensor and configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a radio-frequency (RF) signal;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown, the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a

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	disconnect switch drive circuit, and a set of analog transducers." '817 patent, 5:58-64. '817 patent, figures 1 and 2.
one or more additional wireless transmitters each electrically interfaced with a sensor and configured to receive the RF signal and retransmit the RF signal;	"Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
at least one gateway connected a wide area network (WAN) configured to receive and translate the retransmitted RF signal, the gateway further	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An

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configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing the use of TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one is shown in FIG. 1)." '817 patent, 6:1-8. '817 patent, Figure 3.

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a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address. Moreover, the node is also preferably capable of reading data of a selected group of meters with a single command." '817 patent, 3:27-31. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1.
6. The system of claim 5, wherein the at least one	The above contentions for claim 5 are hereby incorporated by reference.

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gateway is permanently connected to the WAN.	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing the use of TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one is shown in FIG. 1)." '817 patent, 6:1-8. '817 patent, Figure 3.
8. The system of claim 5, wherein the gateway translates the encoded electrical signal, the transmitter identification and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 5 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which

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	the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing the use of TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one is shown in FIG. 1)." '817 patent, 6:1-8. '817 patent, Figure 3.
9. A system for controlling a remote device comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF

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	module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a target remote device having an actuator to be controlled;	"In the presently preferred embodiment of the subject invention, the Source House Code is used to specify the ID of the concentrator node. Meters will typically only respond to messages which are from their assigned node." '817 patent, 7:18-23. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this

	limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging

	functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses:

	"The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "Each meter preferably has a unique address and the node is preferably capable

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	of reading data of individual meters using the individual meters' unique address. Moreover, the node is also preferably capable of reading data of a selected group of meters with a single command." '817 patent, 3:27-31. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1.
a gateway connected to the WAN configured to receive and translate the at least one control signal	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering

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	electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing the use of TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one is shown in FIG. 1)." '817 patent, 6:1-8. '817 patent, Figure 3.
a wireless transmitter coupled with the gateway for transmitting a wireless signal that contains the control signal;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.

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	'817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing the use of TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one is shown in FIG. 1)." '817 patent, 6:1-8. '817 patent, Figure 3.
a first wireless transceiver electrically interfaced with an actuator for receiving the wireless signal and further retransmitting the wireless signal to the target remote device; and	"In the presently preferred embodiment of the subject invention, the Source House Code is used to specify the ID of the concentrator node. Meters will typically only respond to messages which are from their assigned node." '817 patent, 7:18-23. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
logic coupled to the target remote device for extracting the control signal from the retransmitted wireless signal and imparting an action on the actuator in response to the extracted control signal.	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown, the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a

	disconnect switch drive circuit, and a set of analog transducers." '817 patent, 5:58-64. '817 patent, Figure 2. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34. To the extent that Plaintiffs contend that this claim limitation is not disclosed

	explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247.

	"A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data

	acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
10. The system of claim 9, further comprising:	The above contentions for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN

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	interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown, the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers." '817 patent, 5:58-64. '817 patent, Figure 2. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support

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	As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
11. The system of claim 9, further comprising:	The above contentions for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator or a sensor and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "In the presently preferred embodiment of the subject invention, the Source House Code is used to specify the ID of the concentrator node. Meters will typically only respond to messages which are from their assigned node." '817 patent, 7:18-23. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads."

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	This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
12. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network

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	(WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1.
a plurality of non-earth orbiting transceivers dispersed geographically at defined locations, each	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while

transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR

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WAN.	protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1.
14. The system as defined claim 12, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 12 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.

	'817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing the use of TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one is shown in FIG. 1)." '817 patent, 6:1-8. '817 patent, Figure 3.

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The '692 Patent – Claim	U.S. Patent No. 6,100,817
1. A system for remote data collection, assembly, and storage comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a

	prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
at least one wireless transmitter configured to transmit select information and transmitter identification information;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64.

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	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support

	As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically at defined locations configured to receive select information transmitted from at least one nearby wireless transmitter and further configured to transmit the select information, the transmitter identification information and transceiver identification information; and	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.

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	Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
at least one gateway connected to the wide area network configured to receive and translate the select information, the transmitter identification information, and transceiver identification	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of

information, said gateway further configured to farther transmit the translated information to the computer over the WAN.	utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "In the presently preferred embodiment of the subject invention, the Source House Code is used to specify the ID of the concentrator node. Meters will typically only respond to messages which are from their assigned node." '817 patent, 7:18-23. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated

	at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
3. The system as defined in claim 1, wherein each wireless transmitter is configured to transmit a relatively low-power, radio-frequency (RF) signal.	The above contentions for claim 1 are hereby incorporated by reference. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network

	(WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.

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4. The system as defined in claim 1, wherein each wireless transmitter is integrated with a sensor.	The above contentions for claim 1 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
5. The system as defined in claim 1, wherein the RF signal transmitted by the receiver contains a concatenation of information comprising select information and transmitter identification information from the originating transmitter and transceiver identification information for each transceiver that receives and repeats the RF signal.	The above contentions for claim 1 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.

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	"Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "The Source Address field is preferably used for repeated addresses to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 4:45-47. "If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area

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	Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
6. The system as defined in claim 5, wherein the at least one transmitter is replaced by a transceiver, the transceiver further integrated with an actuator.	The above contentions for claim 5 are hereby incorporated by reference. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
7. The system as defined in claim 6, wherein the transceivers are configured to communicate with the	The above contentions for claim 6 are hereby incorporated by reference.

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gateway via a RF signal.	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
8. The system as defined in claim 7, wherein the computer is further configured to respond to received select information by communicating a control signal to at least one transceiver, wherein the actuator integrated with the transceiver is responsive	The above contentions for claim 7 are hereby incorporated by reference. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for

to the control signal.	performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here.…" '817 patent, 5:57-65. '817 patent, Figure 2. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
11. The system as defined in claim 1, wherein the gateway includes one selected from the group consisting of:	The above contentions for claim 1 are hereby incorporated by reference.
a modem for establishing a dial-up connection with a remote computer; a network card for communicating across a local area network; a network card for communicating across the WAN, a DSL modem; and an ISDN card to permit backup access to the computer.	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
12. The system as defined in claim 1, wherein the	The above contentions for claim 1 are hereby incorporated by reference.

gateway translates the select information, the transmitter identification, and the transceiver identification information to TCP/IP for communication over the WAN.	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249.

	Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

13. The system as defined in claim 1, wherein the WAN is the Internet.	The above contentions for claim 1 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host

	protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers.” ‘650 patent, 8:42-44. “For example, the Internet allows weather data from DAs 102 located

	anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
14. The system as defined in claim 1, wherein the WAN is a dedicated Intranet.	The above contentions for claim 1 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the

	destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers.” ‘650 patent, 8:42-44.

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	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
24. A method for controlling a system comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
remotely collecting data from at least one sensor;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An

	AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the

	network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
processing the data into a radio-frequency (RF) signal;	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
transmitting the RF signal, via a relatively low-power transceiver, to a gateway;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a

	prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
translating the data in the RF signal into a network transfer protocol;	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by the at least one sensor by generating an appropriate control signal;	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by

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	the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
sending the control signal via the network to the gateway,	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
translating the control signal from a network transfer protocol into an RF control signal;	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
transmitting the RF control signal;	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
receiving the RF control signal;	"Further background information may be found in U.S. Pat. No. 5,696,695,

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	Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
translating the received RF control signal into an analog signal; and	"Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
applying the analog signal to an actuator to effect the desired system response.	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail

	here….” ‘817 patent, 5:57-65. ‘817 patent, Figure 2. “Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled “System for Rate-Related Control of Electrical Loads.” This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter.” ‘817 patent, 2:11-30.
25. The method of claim 24, wherein the RF signal contains a concatenation of information comprising encoded data information and transmitter identification information from an originating transmitter.	The above contentions for claim 24 are hereby incorporated by reference. “1. The Basic CEBUS Protocol” ‘817 patent, 6:44-7:17 (CEBUS frame table). “Source Address” at ‘817 patent, 6:45-55 (CEBUS Frame). “If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header.” ‘817 patent, 7:61-66.
26. The method of claim 25, wherein the step of transmitting the RF signal is further performed by at least one transceiver, wherein the transceiver is	The above contentions for claim 25 are hereby incorporated by reference. “In sum, the present invention provides a method and system by which the

configured to concatenate a transceiver identification code to the RF signal.	CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For

	example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
27. The method of claim 25, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 25 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a

	CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
28. The method of claim 25, wherein the steps of translating and applying the received RF control signal are performed only by an identified transceiver electrically integrated with an actuator.	The above contentions for claim 25 are hereby incorporated by reference. FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN

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	interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
29. The method of claim 25, wherein the network is the Internet.	The above contentions for claim 25 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below.

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	However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
30. The method of claim 25, wherein the network is an Intranet.	The above contentions for claim 25 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
31. The method of claim 25, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 25 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8
32. A system for monitoring remote devices comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR

	protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering

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	electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF

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	Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
at least one wireless transmitter configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a low-power radio-frequency (RF) signal;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.

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	"Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
at least one gateway connected a wide area network (WAN) configured to receive and translate the RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain

	embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present

	invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
34. The system defined in claim 32, wherein each wireless transmitter is configured to transmit a relatively low-power radio-frequency (RF) signal.	The above contentions for claim 32 are hereby incorporated by reference. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF

	module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
36. The system defined in claim 32, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communicating over the WAN.	The above contentions for claim 32 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

	Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As

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	shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
37. The system defined in claim 32, wherein the WAN in the Internet.	The above contentions for claim 32 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet

	gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP

	112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
38. The system defined in claim 32, wherein the WAN is a dedicated Intranet.	The above contentions for claim 32 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112.

	However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
42. A system for controlling remote devices comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering

	electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and

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	communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
at least one gateway connected to the WAN configured to receive and translate the at least one control signal; said gateway further configured to transmit a radio-frequency (RF) signal containing the control signal and destination information;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
at least one wireless low-power RF transceiver configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator; and	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF

	module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18,

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	which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response.	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as

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	specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
43. The system defined in claim 42, the system input signal comprising:	The above contentions for claim 42 are hereby incorporated by reference.
a concatenation of information including data from a sensor, transceiver identification information from the originating transceiver, and transceiver identification information for each transceiver that receives and repeats the RF signal.	"1. The Basic CEBUS Protocol" '817 patent, 6:44-7:17 (CEBUS frame table). "Destination Address" at '817 patent, 6:45-55 (CEBUS Frame). "Source Address" at '817 patent, 6:45-55 (CEBUS Frame). "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66. "Information Field" at '817 patent, 6:45-55 (CEBUS Frame). "1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message.

	1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message … To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network implementation:" fields including Message Length). "4. Data thru-put The Information field in a CEBUS packet is limited to 32 bytes. The number of bytes in the information filed available for application information is summarized for different types of packets." ''817 patent, 15:22-47.
46. The system defined in claim 42, wherein the gateway translates the RF signal and the RF control signal into TC/IP for communication over the WAN.	The above contentions for claim 42 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.

	‘817 patent, Figure 1. “FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1.” ‘817 patent, 6:1-8. ‘817 patent, Figure 3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: “The PRNET can also be accessed from other networks via an Internet gateway.” Jubin page 23. Burchfiel discloses: “When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the

	destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers.” ‘650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
47. The system defined in claim 42, wherein the WAN is the Internet.	The above contentions for claim 42 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example:

	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102.

	The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
48. The system defined in claim 42, wherein the WAN is a dedicated Intranet.	The above contentions for claim 42 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and

	communications fields." '817 patent, 5:32-57. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host

	protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers.” ‘650 patent, 8:42-44. “For example, the Internet allows weather data from DAs 102 located

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	anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
49. A system for managing an arrangement of application specific remote devices comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a computer configured to execute a multiplicity of computer programs, each computer program executed to generate at least one control signal in response to at least one application system input, said computer integrated with a wide area network (WAN);	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a

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	prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
at least one gateway connected to the WAN configured as a two-way communication device to receive and translate the at least one control signal and the at least one application system input; said gateway further configured to translate and transmit a radio-frequency (RF) signal containing the control signal and destination information, said gateway further configured to receive and translate the at least one application system input and source information;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.

	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
at least one wireless relatively low-power RF transceiver per computer program configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator and a sensor;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail

	herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support

	As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response; and	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817

	patent, 6:15-35.
a sensor configured to translate a physical condition into an analog version of the application system input.	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
51. The system as defined in claim 49, wherein the at least one gateway translates the RF signal and the RF control signal into TCP/IP for communication over the WAN.	The above contentions for claim 49 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or

	sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

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	Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As

	shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
52. The system as defined in claim 49, wherein the WAN in the Internet.	The above contentions for claim 49 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example:

	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102.

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	The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
53. The system as defined in claim 49, wherein the WAN is a dedicated Intranet.	The above contentions for claim 49 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.

	'817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
54. The system as defined in claim 49, wherein the at least one gateway is connected to the WAN by a network selected from the group consisting of a telecommunications network, private radio-frequency network, and a computer network.	The above contentions for claim 49 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below.

	However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
55. A method of collecting information and providing data services comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.

adaptively configuring a data translator at the output of a local controller, wherein the data translator converts the output data stream into an information signal consisting of a transmitter code and an information field;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
adaptively configuring at least one transmitter with the data translator, wherein the transmitter converts the information signal into a low-power RF signal;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network

	(WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
placing a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically wherein the low power RF signal is received and repeated as required to communicate the information signal to a gateway, the gateway providing access to a WAN;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.

	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
translating the low-power RF signal within the gateway to a WAN compatible data transfer protocol;	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
transferring the translated low-power RF signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in said signal; and	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1

	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
granting client access to the computer.	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
56. The method of claim 55 wherein the WAN is the Internet.	The above contentions for claim 55 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

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	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
57. The method of claim 55 wherein the WAN is an Intranet.	The above contentions for claim 55 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or

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	sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

	Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As

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	shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
59. The method of claim 55 wherein the clients access the information using a web browser.	The above contentions for claim 55 are hereby incorporated by reference. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example:

	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102.

	The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
60. A method for controlling an existing control system with a local controller comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present

	invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
adaptively configuring a data translator disposed between and in communication with both a local controller and a wireless transceiver, wherein the data translator is configured to translate the local controller data stream into an information signal consisting of a transceiver identification code and a concatenation of function codes, the data translator further configured to translate control signals from the wireless transceiver into local controller recognized control signals;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65.

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	‘817 patent, Figure 2.
remotely collecting data from the at least one relatively low-powered radio-frequency (RF) transceiver integrated with the data translator;	“FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields.” ‘817 patent, 5:32-57. ‘817 patent, Figure 1. “FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here….” ‘817 patent, 5:57-65. ‘817 patent, Figure 2. “If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header.” ‘817 patent, 7:61-66.

processing the data into an RF signal;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
transmitting the RF signal to a gateway;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN

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	interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
translating the data in the RF signal into a network transfer protocol;	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by at least one sensor by generating an appropriate control signal;	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains

	a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
sending the control signal via the network to the gateway;	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
translating the control signal from a network transfer protocol into an RF control signal;	"FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
transmitting the RF control signal;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.

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	'817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
receiving the RF control signal;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such

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	utility meters are well known and therefore will not be described in detail here….” ‘817 patent, 5:57-65. ‘817 patent, Figure 2.
translating the received RF control signal into a local controller recognized control signal; and	“FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields.” ‘817 patent, 5:32-57. ‘817 patent, Figure 1. “FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here….” ‘817 patent, 5:57-65. ‘817 patent, Figure 2.
applying the local controller recognized control signal via a local control to effect the desired system response.	“FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a

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	disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here….” ‘817 patent, 5:57-65. ‘817 patent, Figure 2. “Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled “System for Rate-Related Control of Electrical Loads.” This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter.” ‘817 patent, 2:11-30.
61. The method of claim 60, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 60 are hereby incorporated by reference. “FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail

	herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
62. The method of claim 60, wherein the network is the Internet.	The above contentions for claim 60 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical

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	to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
63. The method of claim 60, wherein the network is an Intranet.	The above contentions for claim 60 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a

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	CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13.
64. The method of claim 60, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 60 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and

	communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1). In addition, the inventive protocol employs the CEBUS RF protocol, which is implemented by the node after receiving a request over the WAN. The CEBUS packet contains a packet in accordance with the ANSI meter protocol, and that packet in turn contains specific data for a given meter or meters." '817 patent, 6:1-13. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol

	mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26.

	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

Exhibit P8 – Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 6,100,817

The '732 Patent – Claim	U.S. Patent No. 6,100,817
1. A system for remote data collection, assembly, storage, event detection and reporting and control, comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example:

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	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses:

	"In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present

	invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an

	extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26.

	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1.

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	"Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmit- ting transceivers, said gateway further configured to further transmit the	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain

translated information to the computer over the WAN and wherein at least one of said plurality of transceivers is also electrically interfaced with an actuator to control an actuated device.	embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. Figure 1. "In the presently preferred embodiment of the subject invention, the Source House Code is used to specify the ID of the concentrator node. Meters will typically only respond to messages which are from their assigned node." '817 patent, 7:18-23. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as

	specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
13. In a system comprising a plurality of wireless devices configured for remote wireless communication and comprising a device for monitoring and controlling remote devices, the device comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.

a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and

	communications fields." '817 patent, 5:32-57. Figure 1. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"The Source Address field is preferably used for repeated addresses to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 4:45-47. "1.2 Destination and Source Address Fields In the presently preferred embodiment of the subject invention, the Source House Code is used to specify the ID of the concentrator node. Meters will typically only respond o messaged which are from their assigned node. Moreover, all packets will be broadcast, and will therefore contain NULL Destination House Code and Destination Address fields. … If the Source Address field is non-zero, repeaters are being used to transfer the [packet between the node and the end meter." '817 patent, 7:18-31. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent

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	application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
a data controller operatively coupled to the transceiver and the sensor, the data controller configured to control the transceiver and receive data from the sensor, the data controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
14. The device of claim 13, wherein the data controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The above contentions for claim 13 are hereby incorporated by reference. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within

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	the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
16. The device of claim 13**,** wherein the data controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The above contentions for claim 13 are hereby incorporated by reference. "For group response messages in the preferred embodiments the node is capable of eliciting individual responses from a selected group of meters by broadcasting a single command. … Further still, in the presently preferred embodiments, the Group Response Select field allows the node to select one of a prescribed number of meter timeslots for the group response." '817 patent, 4:17-36. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses:

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	"PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command

	the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the

	system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
17. The device of claim 13**,** wherein the data controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code	The above contentions for claim 13 are hereby incorporated by reference. "For group response messages in the preferred embodiments the node is capable of eliciting individual responses from a selected group of meters by broadcasting a single command. … Further still, in the presently preferred embodiments, the Group Response Select field allows the node to select one of a prescribed number of meter timeslots for the group response." '817 patent, 4:17-36. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses:

	"PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm

	message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently

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	preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
18. The device of claim 13, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the data controller can implement.	The above contentions for claim 13 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses:

	"From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses:

	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the

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	MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
19. The device of claim 13, further comprising an actuator configured to receive command data from the controller and in response implement the command.	The above contentions for claim 13 are hereby incorporated by reference. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a

	person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247.

	"A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51.

	U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
31. A wireless communication system including wireless communication devices capable of wireless communication, the wireless communication system comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817

	patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
at least one wireless communication device comprising a transceiver, the transceiver having a unique identification code and being interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which

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	the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control transceiver operations and receive data from the sensor, the controller configured to format data packets for transmission via the transceiver with at least some data packets comprising data representative of data sensed with the sensor; and	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
wherein the controller is configured to receive control signals from a data packet and based on the control signals send instructions to an actuator to implement a command.	"Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within

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	the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses:

	"The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses:

	"Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
32. The wireless communication system of claim 31, further comprising at least one gateway connected to a WAN configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated	The above contentions for claim 31 are hereby incorporated by reference. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of

with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to a computing device over the WAN.	utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "In the presently preferred embodiment of the subject invention, the Source House Code is used to specify the ID of the concentrator node. Meters will typically only respond to messages which are from their assigned node." '817 patent, 7:18-23. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated

	at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. "The Source Address field is preferably used for repeated addresses to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 4:45-47. "1.2 Destination and Source Address Fields In the presently preferred embodiment of the subject invention, the Source House Code is used to specify the ID of the concentrator node. Meters will typically only respond o messaged which are from their assigned node. Moreover, all packets will be broadcast, and will therefore contain NULL Destination House Code and Destination Address fields. … If the Source Address field is non-zero, repeaters are being used to transfer the [packet between the node and the end meter." '817 patent, 7:18-31. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly,

	with single repeats or with dual repeats." '817 patent, 12:23-34.
33. The wireless communication system of claim 31, further comprising a computing device configured to receive user input and based on user input, the computing device formatting control signals, and wherein the controller is configured to receive the control signals via wireless transmission and take action based on the control signals.	The above contentions for claim 31 are hereby incorporated by reference. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "In the presently preferred embodiment of the subject invention, the Source

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	House Code is used to specify the ID of the concentrator node. Meters will typically only respond to messages which are from their assigned node." '817 patent, 7:18-23. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. "The Source Address field is preferably used for repeated addresses to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 4:45-47. "1.2 Destination and Source Address Fields In the presently preferred embodiment of the subject invention, the Source House Code is used to specify the ID of the concentrator node. Meters will typically only respond o messaged which are from their assigned node. Moreover, all packets will be broadcast, and will therefore contain NULL Destination House Code and Destination Address fields. … If the Source Address field is non-zero, repeaters are being used to transfer the [packet between the node and the end meter." '817 patent, 7:18-31.

	"2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S> patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator."

	Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9

	during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements."

	'903, 4:23-31.
34. The wireless communication system of claim 31, wherein the controller is configured to provide one or more function codes in the data packet in response to data sensed by the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "For group response messages in the preferred embodiments the node is capable of eliciting individual responses from a selected group of meters by broadcasting a single command. … Further still, in the presently preferred embodiments, the Group Response Select field allows the node to select one of a prescribed number of meter timeslots for the group response." '817 patent, 4:17-36. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the

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	commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor

	4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions,

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	commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
35. The wireless communication system of claim 31, wherein the controller comprises a memory containing a plurality of function codes specific to the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "For group response messages in the preferred embodiments the node is capable of eliciting individual responses from a selected group of meters by broadcasting a single command. … Further still, in the presently preferred embodiments, the Group Response Select field allows the node to select one of a prescribed number of meter timeslots for the group response." '817 patent, 4:17-36. "The command/response format typically used for meter communications is buried in the CAL User Defined Message field, and will adhere to the ANSI C12.18 standard protocol for meter communications." '817 patent, 9:37-40.

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The '780 Patent – Claim	U.S. Patent No. 6,100,817
1. In a system comprising a plurality of wireless devices, a device comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a transceiver having a unique identification code and being	"In the preferred embodiments of the invention, the CEBUS

electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from a second wireless transceiver in a predetermined signal type;	message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18

	preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter

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	Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the second wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered

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	'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control the transceiver and receive data from the sensor, the controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.

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	'817 patent, Figure 1. "FIG. 2 is a more detailed block diagram of a utility meter synch as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
2. The device of claim 1, wherein the controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The above contentions for claim 1 are hereby incorporated by reference. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64.

	"Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine

	and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it

	selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity."

	U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

4. The device of claim 1, wherein the controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The above contentions for claim 1 are hereby incorporated by reference. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

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	For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps"

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	which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition

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	device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
5. The device of claim 1, wherein the controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code that identifies the transceiver.	The above contentions for claim 1 are hereby incorporated by reference. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater

	functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface,

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	digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
6. The device of claim 1, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the controller can implement.	The above contentions for claim 1 are hereby incorporated by reference. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the

	utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET,

	discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel

Exhibit P8– Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 6,100,817

	page 248. U.S. Patent No. 5,907,491 discloses: “Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling.” ‘491 patent, 7:56-60. “During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity.” U.S. Patent No. 5,963,650 discloses: “Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices.” ‘650 patent, 5:46-51.

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	U.S. Patent No. 7,027,773 discloses: “The Data portion of a MinionNet network Standard Message with a Type Code meaning “Command” will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network.” ‘773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: “Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements.” ‘903, 4:23-31.
7. The device of claim 1, further comprising an actuator configured to receive command data from the controller and in response implement a command.	The above contentions for claim 1 are hereby incorporated by reference. “Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled “System for Rate-Related Control of Electrical Loads.” This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host

	site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495.

	Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special

	requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device

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	and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
8. The device of claim 1, wherein the second transceiver is nearby to the transceiver.	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.

	"Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35.

Exhibit P8 – Invalidity Chart for U.S. Patent No. 8,908,842 based on U.S. Patent No. 6,100,817

The '842 Patent – Claim	U.S. Patent No. 6,100,817
1. A device for communicating information, the device comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64.
a low-power transceiver configured to wirelessly transmit a signal comprising instruction data for delivery to a network of addressable devices;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1.
an interface circuit for communicating with a central location; and	"FIG. 1 depicts an AMR system comprising, in accordance with

	the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, figure 1.
a controller coupled to the interface circuit and to the low-power transceiver, the controller configured to establish a communication link between at least one device in the network of addressable devices and the central location using an address included in the signal, the communication link comprising one or more devices in the network of addressable, the controller further configured to receive one or more signals via the low-power transceiver and communicate information contained within the signals to the central location.	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, figure 1.
7. The device of claim 1, wherein the controller is further	The contentions for claim 1 are hereby incorporated by reference.

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configured to communicate a transceiver identification code to the central location via the interface circuit.	"2.1 Addressing The node or data concentrator in a fixed network system must be able to read individual meters using the meter's unique address…." '817 patent, 10:42-46.
9. The device of claim 1, wherein transmitted and received signals further comprise a field configured to indicate a destination device for a subsequent transmission path to follow.	The contentions for claim 1 are hereby incorporated by reference. "1/ The basic CEBUS Protocol, '817 patent 6:1-44-55, showing Destination Address and Source Address. "The majority of LAN communication packets will be point to point, with the Destination Address fields containing the address of one destination device." '817 patent, 7:41-45. "In the preferred embodiment of the present invention, the NPDU fields used for the fixed network are defined as: * * * Routing Type – Specifies how the message will be routed through the CEBUS network." '817 patent, 8:15-23.
16. A device for communicating information, the device comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR

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	message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64.
a processor; and	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, figure 1..
a memory, the memory comprising logical instructions that when executed by the processor are configured to cause the device to:	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking

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	and communications fields." '817 patent, 5:32-57. '817 patent, figure 1..
wirelessly transmit a signal comprising instruction data for delivery to a network of addressable low-power transceivers;	"In the presently preferred embodiment of the subject invention, the Source House Code is used to specify the ID of the concentrator node. Meters will typically only respond to messages which are from their assigned node." '817 patent, 7:18-23. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
establish a communication link between at least one low-power transceiver in the network of addressable low-power transceivers and a central location based on an address included in the signal, the communication link comprising one or more low-power transceivers in the network of addressable low-power transceivers; and	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a

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	CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, figure 1.
receive one or more low-power RF signals and communicate information contained within the signals to the central location along with a unique transceiver identification number over the communication link.	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, figure 1.
17. A device for communicating information, the device comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF)

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	module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64.
a low-power transceiver that is configured to wirelessly receive a signal including an instruction data from a remote device;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, figure 1.
an interface circuit for communicating with a central location;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a

	digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, figure 1.
a controller coupled to the interface circuit and to the low-power transceiver, the controller being configured to establish a communication link between the remote device and the central location using address-indicative data included in the signal;	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, figure 1.
the controller further configured to receive one or more data signals from the central location via the interface circuit and communicate information contained within the signals to the remote device.	"FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface,

	digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, figure 1.

Exhibit P8– Invalidity Chart for U.S. Patent No. 6,914,893 based on U.S. Patent No. 6,100,817

The '893 Patent – Claim	U.S. Patent No. 6,100,817
1. A system for communicating commands and sensed data between remote devices, the system comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters

transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a

	digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No.

	08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages;	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"1. The Basic CEBUS Protocol" '817 patent, 6:44-7:17 (CEBUS frame table).
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	"Destination Address" at '817 patent, 6:45-55 (CEBUS Frame). To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than

	they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are

	desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type

	ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

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	In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
sender address comprising the unique address of the sending transceiver;	"Source Address" at '817 patent, 6:45-55 (CEBUS Frame).
a command indicator comprising a command code;	"Information Field" at '817 patent, 6:45-55 (CEBUS Frame). "Further background information may be found in U.S. Pat. No.

	5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example,

	Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247.

	"A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses:

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	"Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
at least one data value comprising a scalable message; and	"Information Field" at '817 patent, 6:45-55 (CEBUS Frame). "1.3 Information Field

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	The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message … To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network implementation:" fields including Message Length). "4. Data thru-put The Information field in a CEBUS packet is limited to 32 bytes. The number of bytes in the information filed available for application information is summarized for different types of packets." ''817 patent, 15:22-47. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

	For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson:

	"FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in

	several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual

	address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more

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	commercialized and proposing extensions for IP addressing.
an error detector comprising a redundancy check error detector; and	"1. The Basic CEBUS Protocol" '817 patent, 6:44-55 (CEBUS frame table showing Chksum).
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages.	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence

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	to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. "Moreover, the node is also preferably capable of reading data of a selected group of meters with a single command." '817 patent, 3:27-32. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
2. The system of claim 1, wherein the plurality of transceivers further comprise at least one integrated transceiver, wherein the integrated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference.
one of the plurality of transceivers; and	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65.

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	‘817 patent, Figure 2.
a sensor detecting a condition and outputting a sensed data signal to the transceiver.	“FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here….” ‘817 patent, 5:57-65. ‘817 patent, Figure 2.
3. The system of claim 2, wherein the at least one integrated transceiver receives the preformatted command message requesting sensed data, confirms the receiver address as its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet, wherein the packets are equal to the number of segments.	The above contentions for claim 2 are hereby incorporated by reference. “In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol.” ‘817 patent, 2:50-64. “Information Field” at ‘817 patent, 6:45-55 (CEBUS Frame).

	"1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message … To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network implementation:" fields including Message Length). "4. Data thru-put The Information field in a CEBUS packet is limited to 32 bytes. The number of bytes in the information filed available for application information is summarized for different types of packets." '’817 patent, 15:22-47. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

	For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link

	packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for

	each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43

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	illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

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10. The system of claim 1, wherein the plurality of transceivers further comprise at least one actuated transceiver, wherein the actuated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference. "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
one of the plurality of transceivers;	"Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation

	of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
a sensor detecting a second condition and outputting a sensed data signal to the transceiver; and	"Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
an actuator controlling a third condition and receiving control signals from the transceiver.	"Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of

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	a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
17. A system for communicating commands and sensed data between remote devices, the system comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface,

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	digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF

	communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57. '817 patent, Figure 1. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support

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	As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages, wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	"Destination Address" at '817 patent, 6:45-55 (CEBUS Frame). To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers*

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	Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields

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	demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service

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	modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse

	poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
sender address comprising the unique address of the sending	"Source Address" at '817 patent, 6:45-55 (CEBUS Frame).

transceiver;	
a command indicator comprising a command code;	"Information Field" at '817 patent, 6:45-55 (CEBUS Frame). "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30. "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. To the extent that Plaintiffs contend that this claim limitation is

	not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses:

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	"The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data

	for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data,

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	functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
at least one data value comprising a scalable message; and	"Information Field" at '817 patent, 6:45-55 (CEBUS Frame). "1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message … To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network implementation:" fields including Message Length). "4. Data thru-put The Information field in a CEBUS packet is limited to 32 bytes. The number of bytes in the information filed available for application information is summarized for different types of packets." ''817 patent, 15:22-47. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine

	and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable

	fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43.

	'252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is

	identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.

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	Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector comprising a redundancy check error detector;	"1. The Basic CEBUS Protocol" '817 patent, 6:44-55 (CEBUS frame table showing Chksum).
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages; and	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "For group response messages in the preferred embodiments, the node is capable of eliciting individual responses from a selected group of meters by broadcasting a single command." '817 patent, 4:17-21.
wherein at least one of the plurality of transceivers further sends preformatted emergency messages.	"Thus, a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter. The information in the meter can be extracted using CEBUS powerline or RF by a

	controller in the home that makes decisions based on the metering data or other critical inputs." '817 patent, 2:27-33. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command

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	station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
18. The system of claim 17, wherein the controller maintains periods of silence by not sending the preformatted command messages during predetermined time periods; and	The above contentions for claim 17 are hereby incorporated by reference. "Each meter is assigned a unique window during which it is allowed to broadcast a response to the node." '817 patent, 11:42-43. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of

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	continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
wherein the at least one of the plurality of transceivers detects a period of silence and sends the preformatted emergency message during the period of silence.	"Thus, a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter. The information in the meter can be extracted using CEBUS powerline or RF by a controller in the home that makes decisions based on the metering data or other critical inputs." '817 patent, 2:27-33. "FIG. 2 is a more detailed block diagram of a utility meter such as meter 12A. A s shown the exemplary meter 12A includes a display, a metering board (e.g., including analog to digital

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	convertors, a digital signal processor, etc., for performing the metering function), a power supply, a CEBUS RF board, a disconnect switch drive circuit, and a set of analog transducers. Again, such utility meters are well known and therefore will not be described in detail here…." '817 patent, 5:57-65. '817 patent, Figure 2. "For meter response messages, the bits of the Address Mask field are used by meters functioning as repeaters to indicate message transfer failure." '817 patent, 4:1-3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during

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	special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
37. A method of communicating between geographically remote devices, the method comprising:	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "FIG. 1 depicts an AMR system comprising, in accordance with the present invention, a plurality of utility meters 12A, 12B, 12C, . . . 12D (for metering electricity, gas or water). Each of the meters has a corresponding CEBUS RF module for receiving RF

	communications from a node, or collector, 18, or sending RF communications to the node, and also for communication with a CEBUS local area network (LAN) within the residence or business with which the meter is associated. The node 18 preferably includes a wide area network (WAN) interface, a digital controller, and a CEBUS RF module. The WAN interface, digital controller, and CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields." '817 patent, 5:32-57.
sending a message;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. "2.2 Group Responses CEBUS broadcast messages do not generate responses from the receiving devices. To utilize the communication bandwidth most efficiently, a fixed network needs to issue a single command to a

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	group of meters and get individual responses from each meter. Application layer timing at the node and meters will provide a mechanism for command/multiple response messaging." '817 patent, 11:27-35.
receiving the message at one or more of the remote devices;	"2.2 Group Responses CEBUS broadcast messages do not generate responses from the receiving devices. To utilize the communication bandwidth most efficiently, a fixed network needs to issue a single command to a group of meters and get individual responses from each meter. Application layer timing at the node and meters will provide a mechanism for command/multiple response messaging." '817 patent, 11:27-35.
processing the message;	"After broadcasting a message, the node will set a timer and wait for meter responses before it is allowed to broadcast another message. …Each meter is assigned a unique window during which its is allowed to broadcast a response to the node." '817 patent, 11:36-43. "After a meter receives the node message and is waiting to transmit the response it will use a Link payer filter to prevent other packets (responses to the node from other meters, etc.) from being passed to the meter application. This prevents the meter application from continually reading and processing received messages while waiting to transmit a response." '817 patent, 12:17-23.
preparing a response message;	"After broadcasting a message, the node will set a timer and wait for meter responses before it is allowed to broadcast another message. …Each meter is assigned a unique window during which its is allowed to broadcast a response to the node." '817 patent, 11:36-43.
receiving the response message;	"2.2 Group Responses

	CEBUS broadcast messages do not generate responses from the receiving devices. To utilize the communication bandwidth most efficiently, a fixed network needs to issue a single command to a group of meters and get individual responses from each meter. Application layer timing at the node and meters will provide a mechanism for command/multiple response messaging." '817 patent, 11:27-35.
processing the response message	"FIG. 3 schematically illustrates a communications protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing the use of the TCP and IP protocols for communicating among the server 20 (FIG. 1) and the node/collector units 18 (only one is shown in FIG. 1)." '817 patent, 6:1-8. '817 patent, Figures 1 and 3.
wherein all messages comprise at least one packet, the packet having a predetermined format;	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS protocol." '817 patent, 2:50-64.
wherein the predetermined format comprises:	"1. The Basic CEBUS Protocol" '817 patent, 6:44-7:17 (CEBUS frame table).

a receiver address comprising a scalable address of the at least one of the intended receiving remote devices;	"Destination Address" at '817 patent, 6:45-55 (CEBUS Frame). To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed

	throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to

	eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and

	"network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

	Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a sender address comprising an unique address of the sender;	"Source Address" at '817 patent, 6:45-55 (CEBUS Frame).
a command indicator comprising a command code;	"Information Field" at '817 patent, 6:45-55 (CEBUS Frame). "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.

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	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. "Each meter preferably has a unique address and the node is preferably capable of reading data of individual meters using the individual meters' unique address." '817 patent, 3:27-29. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses:

	"PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60.

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	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet

	network." '773 patent; 22:13-19. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a scalable data value comprising a scalable message; and	"Information Field" at '817 patent, 6:45-55 (CEBUS Frame). "1.3 Information Field The Information field includes a NPDU header (Network layer header), an APDU header (Application layer header) and a CAL message. 1.3.1 NPDU Header The NPDU headers required for the fixed network system are 1-3 bytes in length. If a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header. … 1.3.3 CAL Message … To minimize the number of communication interfaces to the meter, the application layer of the C12.18 protocol is passed in a CEBUS CAL message using the Utility Meter Context and the CAL User Defined Message Structure." '817 patent, 7:55-10:11 (with CAL User Defined message format and fixed network

	implementation:" fields including Message Length). "4. Data thru-put The Information field in a CEBUS packet is limited to 32 bytes. The number of bytes in the information filed available for application information is summarized for different types of packets." ''817 patent, 15:22-47. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '817 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '817 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR,

	encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules

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	belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

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	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source

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	Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector that is a redundancy check error detector; and	"1. The Basic CEBUS Protocol" '817 patent, 6:44-55 (CEBUS frame table showing Chksum).
wherein the steps of sending and receiving are repeated until the message is received by the intended receiver.	"In sum, the present invention provides a method and system by which the CEBUS protocol can be utilized in an AMR fixed network RF system while maintaining commonality and compliance with other CEBUS equipment. An AMR system in accordance with the present invention comprises a plurality of utility meters, each meter comprising a radio frequency (RF) module for transmitting and receiving RF CEBUS message packets in accordance with a prescribed CEBUS protocol, wherein the CEBUS message packets contain embedded AMR message packets in accordance with a prescribed AMR protocol; and a node for accessing data stored by any one or a group of the utility meters via RF communications using the CEBUS

	protocol." '817 patent, 2:50-64. "Copending U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System," and U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks" disclose related inventions concerning the use of fixed RF networks for AMR applications with utility meters having CEBUS capabilities. For example, the '640 application teaches a way to make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Thus, referring to FIG. 1, meter 12D may be considered 'inaccessible' with respect to the responsible node 18. The node 18, which is coupled to the AMR server 20 by a telephone link or some other wired or wireless link, sends information to the 'inaccessible' meter 12D by routing it through, say, meter 12C, which in this example function as a repeater." '817 patent, 6:15-35. "2.2.1 Repeater Support As discussed earlier, the Source Address field is preferably used for repeater addresses (for a detailed understanding of the repeater algorithms, refer to U.S. patent application Ser. No. 08/870,640, filed Jun. 6, 1997, entitled "RF Repeater for Automatic Meter Reading System"; see also U.S. patent application Ser. No. 08/908,728, filed Aug. 7, 1997, entitled "Energy Meter with Multiple Protocols for Communication with Local and Wide Area Networks") to either implement RF communications that read meters directly, with single repeats or with dual repeats." '817 patent, 12:23-34

Exhibit P8– Invalidity Chart for U.S. Patent No. 6,914,893 based on U.S. Patent No. 6,100,817

Exhibit P9 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent No. 5,874,903

The '492 Patent – Claim	U.S. Patent No. 5,874,903
1. In a communication system to communicate command and sensed data between remote devices, the system comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43.

	"The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a receiver address comprising a scalable address of at least one remote device;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

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	For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson:

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	"FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in

	several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual

	address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more

	commercialized and proposing extensions for IP addressing.
a command indicator comprising command code;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495.

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	Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by

	monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be

	used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
a data value comprising a scalable message; and	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header

	corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or

	destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information

	is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59.

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	'252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a controller associated with a remote device comprising a transceiver configured to send and receive wireless signals, the remote device configured to send a preformatted message	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to

comprising the receiver address, a command indicator, and the data value via the transceiver to at least one other remote device.	receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "In all cases, the two-way RF system can be utilized for read/write data required for the system (with all messages ported through the meter)." '903 patent 2:36-38. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14. The meter also includes a modem for so called dialback telephone communications with the AMR network, a UART transceiver, or the like, for communicating with the CEBus LAN 10, and a meter processor for controlling the metering functions as required for a

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	given application." 4:1-7.
2. The system of claim 1, further comprising:	The above contentions for claim 1 are hereby incorporated by reference.
a plurality of transceivers each having a unique address, the transceiver being one of the plurality of transceivers;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. '903 patent, Figure 1. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16.

	'903 patent, Figure 2. "This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C, … 12D, where meter 12D is considered 'inaccessible' (i.e., difficult to reach by direct RF communications) with respect to a responsible node 18." '903 patent, 5:4-8. '903 Figure 5. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is

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	intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
a plurality of controllers associated with each the controller associated with at least one of the transceivers, the controller being in communication with at least one other transceiver with a preformatted message, the preformatted message having at least one scalable field;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "In all cases, the two-way RF system can be utilized for read/write data required for the system (with all messages ported through the meter)." '903 patent 2:36-38. "The basic requirement for all the various systems mentioned

	above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14. The meter also includes a modem for so called dialback telephone communications with the AMR network, a UART transceiver, or the like, for communicating with the CEBus LAN 10, and a meter processor for controlling the metering functions as required for a given application." 4:1-7. "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

at least one sensor associated with at least one of the transceivers to detect a condition and output a data signal to the transceiver; and	"System Overview (FIGS 1-4) To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, an electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14. The meter 12 utilizes a two-way RF protocol, for communicating with the AMR network 14, that allows very cost effective meter reading to take place." '903 patent, 3:16-24.
at least one actuator associated with at least one of the transceivers to activate a device.	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.
3. The system of claim 1, wherein the controller sends the preformatted message via an associated transceiver, and at least one transceiver sends the preformatted response message.	The above contentions for claim 1 are hereby incorporated by reference. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins

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	with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6.
4. The system of claim 1, wherein at least one transceiver receives the preformatted message requesting sensed data, confirms the receiver address as its own unique address, receives a sensed data signal, formats the sensed data signal into scalable byte segments, determines the number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 1 are hereby incorporated by reference. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step

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	S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs'

	stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25.

	"The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the

	first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385,

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	November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
6. The system of claim 1, wherein each remote device is adapted to transmit and receive radio frequency transmissions to and from at least one other transceiver.	The above contentions for claim 1 are hereby incorporated by reference. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903

	patent, 2:11-18. "An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43.

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	"The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
8. A method of communicating command and sensed data between remote wireless devices, the method comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18.

	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
providing a receiver to receive at least one message;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13.

	"In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. '903 patent, Figure 1. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. '903 patent, Figure 2. "This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C, … 12D, where meter 12D is considered 'inaccessible' (i.e., difficult to reach by direct RF communications) with respect to a responsible node 18." '903 patent, 5:4-8.

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	'903 Figure 5. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be

	repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
wherein the message has a packet comprising a command indicator comprising a command code, a scalable data value comprising a scalable message, and an error detector that is a redundancy check error detector; and	"Referring now to FIG. 3, a pass through protocol useful in this system includes a CEBus protocol which in turn is embedded in a meter protocol." '903 patent, 4:20-22. '903 patent, Figure 3. "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example,

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	Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than

	they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some

	anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition

	devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are

	desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type

	ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

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	In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
providing a controller to determine if at least one received message is a duplicate message and determining a location from which the duplicate message originated.	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node

	or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60. "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
9. The method of claim 8, further comprising providing at least	The above contentions for claim 8 are hereby incorporated by

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one remote wireless communication device, wherein at least one of the devices comprise geographically remote transceivers adapted to transmit and receive at least one message using radio frequency transmissions.	reference. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
10. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices has a unique address and the packet further comprises at least one scalable address field to contain the unique address for at least one device.	The above contentions for claim 8 are hereby incorporated by reference. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins

	with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and

	fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g.,

	information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some

	information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

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	In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
11. The method of claim 8, further comprising providing an actuator associated with at least one of the remote devices, the actuator configured to actuate in response to the command code.	The above contention for claim 8 is hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition

	to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '903 patent, Figure 2. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected

	devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data

	transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information

	originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
13. The method of claim 8, further comprising determining if an error exists in a packet of the at least one message.	The above contention for claim 8 is hereby incorporated by reference. "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
14. A wireless communication device for use in a communication system to communicate command and sensed data between remote wireless communication devices, the wireless communication device comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to

	the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application),

	message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a transceiver configured to send and receive wireless communications; and	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. '903 patent, Figure 1. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2.

	"The AMR network 14, in the embodiment of FIG. 2. includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. '903 patent, Figure 2. "This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C, … 12D, where meter 12D is considered 'inaccessible' (i.e., difficult to reach by direct RF communications) with respect to a responsible node 18." '903 patent, 5:4-8. '903 Figure 5. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21.

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	"Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to format a message comprising a receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code, a data value comprising a scalable message.	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18.

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	"Referring now to FIG. 3, a pass through protocol useful in this system includes a CEBus protocol which in turn is embedded in a meter protocol." '903 patent, 4:20-22. '903 patent, Figure 3. "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses:

	"From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). …

	Routing Header: The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by

	monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be

	used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first,

	broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a

	network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing

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	explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
15. The wireless communication device of claim 14, further comprising at least one sensor configured to detect a condition and output a signal to the controller.	The above contentions for claim 14 are hereby incorporated by reference. "System Overview (FIGS 1-4) To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, an electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14. The meter 12 utilizes a two-way RF protocol, for communicating with the AMR network 14, that allows very cost effective meter reading to take place." '903 patent, 3:16-24.

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16. The wireless communication device of claim 14, wherein the controller is further configured to determine if at least one received message is a duplicate message and determine a location from which the duplicate message originated.	The above contentions for claim 14 are hereby incorporated by reference. "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
17. The wireless communication device of claim 14, further comprising at least one actuator configured to implement an action corresponding to the command code.	The above contention for claim 14 is hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent,

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	3:53-67. '930 patent, Figure 2.
18. The device of claim 14, wherein the transceiver comprises a unique transceiver address to distinguish the transceiver from other transceivers.	The above contentions for claim 14 are hereby incorporated by reference. "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
19. In a system for communicating commands and sensed data between remote devices comprising a communications device for communicating commands and sensed data, the communications device comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903

	patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a transceiver operably configured to be in communication with at least one other of a plurality of transceivers, wherein the	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver,

transceiver has a unique address, wherein the unique address identities the individual transceiver, wherein the transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with each of the other transceivers via preformatted messages;	metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. '903 patent, Figure 1. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. '903 patent, Figure 2. "This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C, … 12D, where meter 12D is considered 'inaccessible' (i.e., difficult to reach by direct RF

	communications) with respect to a responsible node 18." '903 patent, 5:4-8. '903 Figure 5. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate

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	the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
a controller configured to be in communication with the transceiver, the controller configured to provide preformatted messages for communication;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "In all cases, the two-way RF system can be utilized for read/write data required for the system (with all messages ported through the meter)." '903 patent 2:36-38. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application),

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	message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14. The meter also includes a modem for so called dialback telephone communications with the AMR network, a UART transceiver, or the like, for communicating with the CEBus LAN 10, and a meter processor for controlling the metering functions as required for a given application." 4:1-7. "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
wherein the preformatted message comprises at least one packet, wherein the packet comprises: a receiver address comprising a scalable address of the at least one of the intended receiving transceivers; sender address comprising the unique address of the sending transceiver; a command indicator comprising a command	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node

code; at least one data value comprising a scalable message; and an error detector comprising a redundancy check error detector; and wherein the controller is configured to interact with the transceiver to send preformatted command messages.	or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "Referring now to FIG. 3, a pass through protocol useful in this system includes a CEBus protocol which in turn is embedded in a meter protocol." '903 patent, 4:20-22. '903 patent, Figure 3. "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below.

	For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs'

	stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data

	transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information

	originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25.

	"The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the

	first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385,

	November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
20. The communication device of claim 19, further comprising a sensor operatively configured to detect a condition and output a sensed data signal that corresponds to the condition to the transceiver.	The above contentions for claim 19 are hereby incorporated by reference. "System Overview (FIGS 1-4) To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, an electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14. The meter 12 utilizes a two-way RF protocol, for communicating with the

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	AMR network 14, that allows very cost effective meter reading to take place." '903 patent, 3:16-24.
21. The communication device of claim 20, wherein the transceiver is configured to receive a preformatted command message requesting sensed data, confirms the receiver address is its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 20 are hereby incorporated by reference. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more

	of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header

	corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and

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	depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command

	or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or

	destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information

	is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59.

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	'252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
25. A wireless communication device for use in a communication system to communicate a number of commands and sensed data	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure.

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between remote wireless communication devices, the wireless communication device comprising:	The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the

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	CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a transceiver configured to send and receive wireless communications; and	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. '903 patent, Figure 1. "The meter includes an RF transceiver for communicating normal

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	and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. '903 patent, Figure 2. "This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C, … 12D, where meter 12D is considered 'inaccessible' (i.e., difficult to reach by direct RF communications) with respect to a responsible node 18." '903 patent, 5:4-8. '903 Figure 5. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to

	access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to reformat a message comprising receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code; a data value comprising a scalable	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format

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message.	that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "In all cases, the two-way RF system can be utilized for read/write data required for the system (with all messages ported through the meter)." '903 patent 2:36-38. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14. The meter also includes a modem for so called dialback telephone communications with the AMR network, a UART transceiver, or the like, for communicating with the CEBus LAN 10, and a meter processor for controlling the metering functions as required for a given application." 4:1-7. "Meter information in a node protocol packet includes meter ID, a

	repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6. To the extent that Plaintiffs contend that this claim limitation is

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	not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers*

	Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports

	debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the

	preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields

	demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service

	modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse

	poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

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The '661 Patent – Claim	U.S. Patent No. 5,874,903
1. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message

	displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "Node 18 is called the "responsible" node in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a given node." '903 patent, 5:9-13. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent Figures 2 and 5.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "To make an AMR system adaptive to higher functions, a variety of

electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the

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	message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN.	'903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17.
5. A system for monitoring remote devices, comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network.

	The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a

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	controller." '903 patent, 2:11-13. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14. The meter 12 utilizes a two-way RF protocol, for communicating with the AMR network 14, that allows very cost effective meter reading to take place." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2.
at least one wireless transmitter electrically interfaced with the sensor and configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a radio-frequency (RF) signal;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14. The meter 12 utilizes a two-way RF protocol, for communicating with the AMR network 14, that allows very cost effective meter reading to take place." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16.

	"Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10.
one or more additional wireless transmitters each electrically interfaced with a sensor and configured to receive the RF signal and retransmit the RF signal;	"To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14. The meter 12 utilizes a two-way RF protocol, for communicating with the AMR network 14, that allows very cost effective meter reading to take place." '903 patent, 3:17-22. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present

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	invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21.
at least one gateway connected a wide area network (WAN) configured to receive and translate the retransmitted RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	'903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "Node 18 is called the "responsible" node in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a given node." '903 patent, 5:9-13. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17.

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	'903 patent Figures 2 and 5.
6. The system of claim 5, wherein the at least one gateway is permanently connected to the WAN.	The above contentions for claim 5 are hereby incorporated by reference. '903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17.
8. The system of claim 5, wherein the gateway translates the encoded electrical signal, the transmitter identification and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 5 are hereby incorporated by reference. '903 patent, Figure 3.
9. A system for controlling a remote device comprising:	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18.
a target remote device having an actuator to be controlled;	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43.

	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495.

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	Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in

	memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity.” U.S. Patent No. 5,963,650 discloses: “Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices.” ‘650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: “The Data portion of a MinionNet network Standard Message with a Type Code meaning “Command” will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network.” ‘773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: “In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control.”

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	'817 patent, 2:65-3:2.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "Node 18 is called the "responsible" node in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a given node." '903 patent, 5:9-13. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent Figures 2 and 5.
a gateway connected to the WAN configured to receive and translate the at least one control signal	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17.
a wireless transmitter coupled with the gateway for transmitting a wireless signal that contains the control signal;	'903 patent, Figure 2. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system

	for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67.
a first wireless transceiver electrically interfaced with an actuator for receiving the wireless signal and further retransmitting the wireless signal to the target remote device; and	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '903 patent, Figure 2.
logic coupled to the target remote device for extracting the control signal from the retransmitted wireless signal and imparting an action on the actuator in response to the extracted control signal.	"FIG 4 is a more detailed block diagram of a solid state electronic meter 12. As shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital (A/D) convertor (for digitizing input voltage and current measurements); math coprocessor energy, demand and time of use processors, and button, display, and relay handlers. The various processor functions may be implemented with one or more microprocessors or digital signal processors controlled by various firmware or software modules, and the button, display and relay handlers may be implemented with combinations of hard wired circuitry and/or software or firmware. One or more serial buses are employed for communications between

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	the meter display and control buttons (where the relay, display, and buttons may be part of the CEBus LAN 10 (FIG. 2)." '903 patent, 4:42-57. '903 patent Figure 4. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure,

	etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity."

	U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
10. The system of claim 9, further comprising:	The above contentions for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the	"The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the

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wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and

	which RPT from the RPT field." '903 patent, 7:2-3.
11. The system of claim 9, further comprising:	The above contentions for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator or a sensor and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '903 patent, Figure 2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the

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	'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
12. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract.

	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a computer configured to execute at least one	"The present invention provides a utility meter for use in an AMR network.

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computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "Node 18 is called the "responsible" node in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a given node." '903 patent, 5:9-13. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent Figures 2 and 5.
a plurality of non-earth orbiting transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2.

transceiver making retransmission; and	"The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an

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	appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN.	'903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17.
14. The system as defined claim 12, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 12 are hereby incorporated by reference. '903 patent, Figure 3.

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The '692 Patent – Claim	U.S. Patent No. 5,874,903
1. A system for remote data collection, assembly, and storage comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message

	displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "Node 18 is called the "responsible" node in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a given node." '903 patent, 5:9-13. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent Figures 2 and 5.
at least one wireless transmitter configured to transmit select information and transmitter identification information;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable

	to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be

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	summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically at defined locations configured to receive select information transmitted from at least one nearby wireless transmitter and further configured to transmit the select information, the transmitter identification information and transceiver identification information; and	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic

	meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3.

	(For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
at least one gateway connected to the wide area network configured to receive and translate the select information, the transmitter identification information, and transceiver identification information, said gateway further configured to farther transmit the translated information to the computer over the WAN.	'903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17.
3. The system as defined in claim 1, wherein each wireless transmitter is configured to transmit a relatively low-power, radio-frequency (RF) signal.	The above contentions for claim 1 are hereby incorporated by reference. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23.

	"To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21.
4. The system as defined in claim 1, wherein each wireless transmitter is integrated with a sensor.	The above contentions for claim 1 are hereby incorporated by reference. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a

	controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2.
5. The system as defined in claim 1, wherein the RF signal transmitted by the receiver contains a concatenation of information comprising select information and transmitter identification information from the originating transmitter and transceiver identification information for each transceiver that receives and repeats the RF signal.	The above contentions for claim 1 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67.

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	'903 patent, Figure 2. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3. To the extent that Plaintiffs contend that this claim limitation is not disclosed

	explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
6. The system as defined in claim 5, wherein the at least one transmitter is replaced by a transceiver, the transceiver further integrated with an actuator.	The above contentions for claim 5 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '903 patent, Figure 2.
7. The system as defined in claim 6, wherein the transceivers are configured to communicate with the gateway via a RF signal.	The above contentions for claim 6 are hereby incorporated by reference. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node

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	via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18.
8. The system as defined in claim 7, wherein the computer is further configured to respond to received select information by communicating a control signal to at least one transceiver, wherein the actuator integrated with the transceiver is responsive to the control signal.	The above contentions for claim 7 are hereby incorporated by reference. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23.
11. The system as defined in claim 1, wherein the gateway includes one selected from the group consisting of:	The above contentions for claim 1 are hereby incorporated by reference.
a modem for establishing a dial-up connection with a remote computer; a network card for communicating across a local area network; a network card for communicating across the WAN, a DSL modem; and an ISDN card to permit backup	"The meter also includes a modem for so called dialback telephone communications with the AMR network…." '903 patent, 4:3-4. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17.

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access to the computer.	
12. The system as defined in claim 1, wherein the gateway translates the select information, the transmitter identification, and the transceiver identification information to TCP/IP for communication over the WAN.	The above contentions for claim 1 are hereby incorporated by reference. '903 patent, Figure 3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249.

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	Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
13. The system as defined in claim 1, wherein the	The above contentions for claim 1 are hereby incorporated by reference.

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WAN is the Internet.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
14. The system as defined in claim 1, wherein the WAN is a dedicated Intranet.	The above contentions for claim 1 are hereby incorporated by reference. "The meter also includes a modem for so called dialback telephone communications with the AMR network…." '903 patent, 4:3-4. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or

	some other wired or wireless communication link." '903 patent, 5:15-17. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway

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	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
24. A method for controlling a system comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract.

	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.

remotely collecting data from at least one sensor;	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading network. The inventive method comprises the steps of: receiving a message originated by an AMR node, determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message." '903 patent, 32-41.
processing the data into a radio-frequency (RF) signal;	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading network. The inventive method comprises the steps of: receiving a message originated by an AMR node, determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message." '903 patent, 32-41.
transmitting the RF signal, via a relatively low-power transceiver, to a gateway;	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading network. The inventive method comprises the steps of: receiving a message originated by an AMR node, determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message." '903 patent, 32-41.
translating the data in the RF signal into a network transfer protocol;	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent, Figure 5. '903 patent, Figure 3 (IP/TCP)
sending the translated data to a computer, wherein	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or

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the computer is configured to appropriately respond to the data generated by the at least one sensor by generating an appropriate control signal;	some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent, Figure 5.
sending the control signal via the network to the gateway,	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent, Figure 5.
translating the control signal from a network transfer protocol into an RF control signal;	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent, Figure 5. 903 patent, Figure 3.
transmitting the RF control signal;	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent, Figure 5.
receiving the RF control signal;	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.

translating the received RF control signal into an analog signal; and	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2. FIG. 4 is a more detailed block diagram of a solid state electronic meter 12. As shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital convertor (for digitizing input voltage and current measurements); math coprocessor; energy, demand and time of use processors, and button, display and relay handlers. The various processor functions may be implemented with one or more microprocessors or digital signal processors controlled by various firmware or software modules, and the button, display and relay handlers may be implemented with combinations of hard wired circuitry and/or software or firmware. One or more serial buses are employed for communication between the meter 12 and radio (RF transceiver), modem, transceiver, relays, display and control buttons (where the relay, display, and buttons may be part of the CEBus LAN 10 (FIG. 2)." '903 patent, 4:42-58.
applying the analog signal to an actuator to effect the desired system response.	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to

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	pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.
25. The method of claim 24, wherein the RF signal contains a concatenation of information comprising encoded data information and transmitter identification information from an originating transmitter.	The above contentions for claim 24 are hereby incorporated by reference. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this

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	limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
26. The method of claim 25, wherein the step of transmitting the RF signal is further performed by at least one transceiver, wherein the transceiver is configured to concatenate a transceiver identification code to the RF signal.	The above contentions for claim 25 are hereby incorporated by reference. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus

	network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3.
27. The method of claim 25, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 25 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.
28. The method of claim 25, wherein the steps of translating and applying the received RF control signal are performed only by an identified transceiver electrically integrated with an actuator.	The above contentions for claim 25 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10.

	This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2. FIG. 4 is a more detailed block diagram of a solid state electronic meter 12. As shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital convertor (for digitizing input voltage and current measurements); math coprocessor; energy, demand and time of use processors, and button, display and relay handlers. The various processor functions may be implemented with one or more microprocessors or digital signal processors controlled by various firmware or software modules, and the button, display and relay handlers may be implemented with combinations of hard wired circuitry and/or software or firmware. One or more serial buses are employed for communication between the meter 12 and radio (RF transceiver), modem, transceiver, relays, display and control buttons (where the relay, display, and buttons may be part of the CEBus LAN 10 (FIG. 2)." '903 patent, 4:42-58.
29. The method of claim 25, wherein the network is the Internet.	The above contentions for claim 25 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this

	limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses:

	"In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
30. The method of claim 25, wherein the network is an Intranet.	The above contentions for claim 25 are hereby incorporated by reference. "The meter also includes a modem for so called dialback telephone communications with the AMR network…." '903 patent, 4:3-4. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17.
31. The method of claim 25, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 25 are hereby incorporated by reference. "Referring now to FIG. 3, a pass through protocol useful in this system include

	a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into

	the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed

	over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
32. A system for monitoring remote devices comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR

	network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16.

	"To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6.

	"The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
at least one wireless transmitter configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a low-power radio-frequency (RF) signal;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter

	12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
at least one gateway connected a wide area network (WAN) configured to receive and translate the RF signal, the gateway further configured to deliver the	'903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or

encoded electrical signal and transmitter identification information to a computer on the WAN; and	some other wired or wireless communications link." '903 patent, 5:15-17.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	"The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nods) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. '903 patent, Figure 2.
34. The system defined in claim 32, wherein each wireless transmitter is configured to transmit a relatively low-power radio-frequency (RF) signal.	The above contentions for claim 32 are hereby incorporated by reference. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16.
36. The system defined in claim 32, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communicating over the WAN.	The above contentions for claim 32 are hereby incorporated by reference. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32.

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	'903 patent, Figure 3.
37. The system defined in claim 32, wherein the WAN in the Internet.	The above contentions for claim 32 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249.

	Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
38. The system defined in claim 32, wherein the WAN is a dedicated Intranet.	The above contentions for claim 32 are hereby incorporated by reference.

	'903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249.

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	Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
42. A system for controlling remote devices comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio

	system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is

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	included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "Node 18 is called the "responsible" node in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a given node." '903 patent, 5:9-13. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent Figures 2 and 5.
at least one gateway connected to the WAN configured to receive and translate the at least one control signal; said gateway further configured to transmit a radio-frequency (RF) signal containing the control signal and destination information;	'903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17.
at least one wireless low-power RF transceiver configured to receive the RF signal from the gateway; said wireless transceiver configured to	"Node 18 is called the "responsible" node in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a

translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator; and	given node." '903 patent, 5:9-13. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response.	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.

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43. The system defined in claim 42, the system input signal comprising:	The above contentions for claim 42 are hereby incorporated by reference.
a concatenation of information including data from a sensor, transceiver identification information from the originating transceiver, and transceiver identification information for each transceiver that receives and repeats the RF signal.	"Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
46. The system defined in claim 42, wherein the gateway translates the RF signal and the RF control signal into TC/IP for communication over the WAN.	The above contentions for claim 42 are hereby incorporated by reference. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes meter

	ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3.
47. The system defined in claim 42, wherein the WAN is the Internet.	The above contentions for claim 42 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into

	the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed

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	over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
48. The system defined in claim 42, wherein the WAN is a dedicated Intranet.	The above contentions for claim 42 are hereby incorporated by reference. '903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into

	the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed

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	over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
49. A system for managing an arrangement of application specific remote devices comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR

	network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a computer configured to execute a multiplicity of computer programs, each computer program executed to generate at least one control signal in response to at least one application system input, said computer integrated with a wide area network (WAN);	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "Node 18 is called the "responsible" node in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a given node." '903 patent, 5:9-13. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent Figures 2 and 5.
at least one gateway connected to the WAN	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or

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configured as a two-way communication device to receive and translate the at least one control signal and the at least one application system input; said gateway further configured to translate and transmit a radio-frequency (RF) signal containing the control signal and destination information, said gateway further configured to receive and translate the at least one application system input and source information;	some other wired or wireless communication link." '903 patent, 5:15-17. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.

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at least one wireless relatively low-power RF transceiver per computer program configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator and a sensor;	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response; and	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.
a sensor configured to translate a physical condition into an analog version of the application system	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a

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input.	controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.
51. The system as defined in claim 49, wherein the at least one gateway translates the RF signal and the RF control signal into TCP/IP for communication over the WAN.	The above contentions for claim 49 are hereby incorporated by reference. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
52. The system as defined in claim 49, wherein the WAN in the Internet.	The above contentions for claim 49 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this

	limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses:

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	"In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
53. The system as defined in claim 49, wherein the WAN is a dedicated Intranet.	The above contentions for claim 49 are hereby incorporated by reference. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example:

	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102.

	The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
54. The system as defined in claim 49, wherein the at least one gateway is connected to the WAN by a network selected from the group consisting of a telecommunications network, private radio-frequency network, and a computer network.	The above contentions for claim 49 are hereby incorporated by reference. "The meter also includes a modem for so called dialback telephone communications with the AMR network…." '903 patent, 4:3-4. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17.
55. A method of collecting information and providing data services comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract.

	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.

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adaptively configuring a data translator at the output of a local controller, wherein the data translator converts the output data stream into an information signal consisting of a transmitter code and an information field;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the

	'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection

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	bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3.
adaptively configuring at least one transmitter with the data translator, wherein the transmitter converts the information signal into a low-power RF signal;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The

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	present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.

	"Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3.
placing a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically wherein the low power RF signal is received and repeated as required to communicate the information signal to a gateway, the gateway providing access to a WAN;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A

	(actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10.

	Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3.
translating the low-power RF signal within the gateway to a WAN compatible data transfer protocol;	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32.

	'903 patent, Figure 3.
transferring the translated low-power RF signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in said signal; and	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17.
granting client access to the computer.	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the

	destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers.” ‘650 patent, 8:42-44.

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	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
56. The method of claim 55 wherein the WAN is the Internet.	The above contentions for claim 55 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249.

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	Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

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57. The method of claim 55 wherein the WAN is an Intranet.	The above contentions for claim 55 are hereby incorporated by reference. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249.

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	Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
59. The method of claim 55 wherein the clients access the information using a web browser.	The above contentions for claim 55 are hereby incorporated by reference.

	'903 patent, Figure 3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway

	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
60. A method for controlling an existing control system with a local controller comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract.

Exhibit P9 – Invalidity Chart for U.S. Patent No. 6,437,692 based on U.S. Patent No. 5,874,903

	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.

adaptively configuring a data translator disposed between and in communication with both a local controller and a wireless transceiver, wherein the data translator is configured to translate the local controller data stream into an information signal consisting of a transceiver identification code and a concatenation of function codes, the data translator further configured to translate control signals from the wireless transceiver into local controller recognized control signals;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the

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	'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection

	bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
remotely collecting data from the at least one relatively low-powered radio-frequency (RF) transceiver integrated with the data translator;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the

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	modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43.
processing the data into an RF signal;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18.
transmitting the RF signal to a gateway;	"Node 18 is called the "responsible" node in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a given node." '903 patent, 5:9-13. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent Figures 2 and 5.
translating the data in the RF signal into a network transfer protocol;	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32.

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	'903 patent, Figure 3.
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by at least one sensor by generating an appropriate control signal;	"The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17.
sending the control signal via the network to the gateway;	"The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
translating the control signal from a network transfer protocol into an RF control signal;	"Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3. FIG. 4 is a more detailed block diagram of a solid state electronic meter 12. As

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	shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital convertor (for digitizing input voltage and current measurements); math coprocessor; energy, demand and time of use processors, and button, display and relay handlers. The various processor functions may be implemented with one or more microprocessors or digital signal processors controlled by various firmware or software modules, and the button, display and relay handlers may be implemented with combinations of hard wired circuitry and/or software or firmware. One or more serial buses are employed for communication between the meter 12 and radio (RF transceiver), modem, transceiver, relays, display and control buttons (where the relay, display, and buttons may be part of the CEBus LAN 10 (FIG. 2)." '903 patent, 4:42-58.
transmitting the RF control signal;	"Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3.
receiving the RF control signal;	"The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2.
translating the received RF control signal into a local controller recognized control signal; and	"FIG. 4 is a more detailed block diagram of a solid state electronic meter 12. As shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital convertor (for digitizing input voltage and current measurements); math coprocessor; energy, demand and time of use processors, and button, display and relay handlers. The various

	processor functions may be implemented with one or more microprocessors or digital signal processors controlled by various firmware or software modules, and the button, display and relay handlers may be implemented with combinations of hard wired circuitry and/or software or firmware. One or more serial buses are employed for communication between the meter 12 and radio (RF transceiver), modem, transceiver, relays, display and control buttons (where the relay, display, and buttons may be part of the CEBus LAN 10 (FIG. 2)." '903 patent, 4:42-58.
applying the local controller recognized control signal via a local control to effect the desired system response.	"FIG. 4 is a more detailed block diagram of a solid state electronic meter 12. As shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital convertor (for digitizing input voltage and current measurements); math coprocessor; energy, demand and time of use processors, and button, display and relay handlers. The various processor functions may be implemented with one or more microprocessors or digital signal processors controlled by various firmware or software modules, and the button, display and relay handlers may be implemented with combinations of hard wired circuitry and/or software or firmware. One or more serial buses are employed for communication between the meter 12 and radio (RF transceiver), modem, transceiver, relays, display and control buttons (where the relay, display, and buttons may be part of the CEBus LAN 10 (FIG. 2)." '903 patent, 4:42-58.
61. The method of claim 60, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 60 are hereby incorporated by reference. FIG. 4 is a more detailed block diagram of a solid state electronic meter 12. As shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital convertor (for digitizing input voltage and current measurements); math coprocessor; energy, demand and time of use processors, and button, display and relay handlers. The various processor functions may be implemented with one or more microprocessors or digital signal processors controlled by various firmware or software modules, and the

	button, display and relay handlers may be implemented with combinations of hard wired circuitry and/or software or firmware. One or more serial buses are employed for communication between the meter 12 and radio (RF transceiver), modem, transceiver, relays, display and control buttons (where the relay, display, and buttons may be part of the CEBus LAN 10 (FIG. 2)." '903 patent, 4:42-58.
62. The method of claim 60, wherein the network is the Internet.	The above contentions for claim 60 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host

	protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers.” ‘650 patent, 8:42-44. “For example, the Internet allows weather data from DAs 102 located

	anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
63. The method of claim 60, wherein the network is an Intranet.	The above contentions for claim 60 are hereby incorporated by reference. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent Figure 2. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host

	protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers.” ‘650 patent, 8:42-44. “For example, the Internet allows weather data from DAs 102 located

	anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
64. The method of claim 60, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 60 are hereby incorporated by reference. '903 patent, Figure 3. "Referring now to FIG. 3, a pass through protocol useful in this system include a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes mete ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:20-32. '903 patent, Figure 3. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses:

	"When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors

	110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

Exhibit P9 – Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 5,874,903

The '732 Patent – Claim	U.S. Patent No. 5,874,903
1. A system for remote data collection, assembly, storage, event detection and reporting and control, comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message

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	displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "Node 18 is called the "responsible" node in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a given node." '903 patent, 5:9-13. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communication link." '903 patent, 5:15-17. '903 patent Figures 2 and 5. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with

	the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250.

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	The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically inter- faced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As

information associated with the transceiver making retransmission;	shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be

	received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmit- ting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN and wherein at least one of said plurality of transceivers is also electrically interfaced with an actuator to control an actuated device.	'903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network

	can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more

	monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.

	U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
13. In a system comprising a plurality of wireless devices configured for remote wireless communication and comprising a device for monitoring and controlling remote devices, the device comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43.

	"The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '903 patent, 3:53-67. '903 patent, Figure 2.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable

predetermined signal type;	to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. Includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be

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	summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF

	communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6.
a data controller operatively coupled to the transceiver and the sensor, the data controller configured to control the transceiver and receive data from the sensor, the data controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18.

14. The device of claim 13, wherein the data controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The above contentions for claim 13 are hereby incorporated by reference. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a

	person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247.

	"A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data

	acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
16. The device of claim 13**,** wherein the data controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The above contentions for claim 13 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent,

	3:53-67. "In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:27-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23.

	"A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after

	installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
17. The device of claim 13**,** wherein the data controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed	The above contentions for claim 13 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus

data and the unique identification code	provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. "In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:27-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic

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	sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60.

	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses:

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	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
18. The device of claim 13, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the data controller can implement.	The above contentions for claim 13 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. "In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:27-31. "FIG. 4 is a more detailed block diagram of a solid state electronic meter 12. As shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital (A/D) convertor (for digitizing input voltage and current measurements); math coprocessor; energy, demand and time of use processors; and button, display and relay handlers." '903 patent 4:42-48.

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19. The device of claim 13, further comprising an actuator configured to receive command data from the controller and in response implement the command.	The above contentions for claim 13 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. "In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:27-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below.

	For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses:

	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control

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	Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
31. A wireless communication system including wireless communication devices capable of wireless communication, the wireless communication system comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the

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	modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
at least one wireless communication device comprising a transceiver, the transceiver having a unique identification code and being interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16.

	"To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6.

	"The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control transceiver operations and receive data from the sensor, the controller configured to format data packets for transmission via the transceiver with at least some data packets comprising data representative of data sensed with the sensor; and	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43.
wherein the controller is configured to receive control signals from a data packet and based on the control signals send instructions to an actuator to implement a command.	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67.

	'903 patent, Figure 2. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23.

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	Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses:

	"Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
32. The wireless communication system of claim 31, further comprising at least one gateway connected to a WAN configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to a computing device over	The above contentions for claim 31 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the

the WAN.	CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the

	destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers.” ‘650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.
33. The wireless communication system of claim 31, further comprising a computing device configured to receive user input and based on user input, the computing device formatting control signals, and wherein the controller is configured to receive the control signals via wireless transmission and take action based on the control signals.	The above contentions for claim 31 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '903 patent, Figure 2. "The node 18 is coupled to an AMR server 20, e.g., by a telephone link or some other wired or wireless communications link." '903 patent, 5:15-17. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773

	patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when

	some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type

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	Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
34. The wireless communication system of claim 31, wherein the controller is configured to provide one or more function codes in the data packet in response to data sensed by the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '903 patent, Figure 2. "In presently preferred embodiments of the invention, the pass through

	protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:27-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23.

	Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity."

Exhibit P9 – Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 5,874,903

	U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
35. The wireless communication system of claim 31, wherein the controller comprises a memory containing a plurality of function codes specific to the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "FIG. 4 is a more detailed block diagram of a solid state electronic meter 12.

	As shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital (A/D) convertor (for digitizing input voltage and current measurements); math coprocessor; energy, demand and time of use processors; and button, display and relay handlers." '903 patent 4:42-48. '903 patent, Figure 4. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23.

	"A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless

	commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

Exhibit P9 – Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 5,874,903

The '780 Patent – Claim	U.S. Patent No. 5,874,903
1. In a system comprising a plurality of wireless devices, a device comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43.

	"The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from a second wireless transceiver in a predetermined signal type;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22.

	"The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5),

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	the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the second wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified

	message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from

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	"10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control the transceiver and receive data from the sensor, the controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "In all cases, the two-way RF system can be utilized for read/write data required for the system (with all messages ported through the meter)." '903 patent 2:36-38. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This

	capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14. The meter also includes a modem for so called dialback telephone communications with the AMR network, a UART transceiver, or the like, for communicating with the CEBus LAN 10, and a meter processor for controlling the metering functions as required for a given application." 4:1-7.
2. The device of claim 1, wherein the controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The above contentions for claim 1 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67.

	'930 patent, Figure 2. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14. The meter also includes a modem for so called dialback telephone communications with the AMR network, a UART transceiver, or the like, for communicating with the CEBus LAN 10, and a meter processor for controlling the metering functions as required for a given application." 4:1-7. "In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:27-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted,

	if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses:

	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message

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	with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
4. The device of claim 1, wherein the controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The above contentions for claim 1 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent,

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	3:53-67. '930 patent, Figure 2. "In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:27-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses:

	"PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60.

	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.

	U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
5. The device of claim 1, wherein the controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code that identifies the transceiver.	The above contentions for claim 1 are hereby incorporated by reference. "In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:27-31 "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the

	intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
6. The device of claim 1, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the controller can implement.	The above contentions for claim 1 are hereby incorporated by reference. "FIG. 4 is a more detailed block diagram of a solid state electronic meter 12. As shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital (A/D) convertor (for digitizing input voltage and current measurements); math coprocessor; energy, demand and time of use processors; and button, display and relay handlers." '903 patent 4:42-48. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below.

	For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps"

	which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition

Exhibit P9 – Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 5,874,903

	device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
7. The device of claim 1, further comprising an actuator configured to receive command data from the controller and in response implement a command.	The above contentions for claim 1 are hereby incorporated by reference. "The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements.

	FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14. The meter also includes a modem for so called dialback telephone communications with the AMR network, a UART transceiver, or the like, for communicating with the CEBus LAN 10, and a meter processor for controlling the metering functions as required for a given application." 4:1-7. "In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:27-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No.

	7,027,773, ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. Also, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central

	station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S. Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer

	operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.
8. The device of claim 1, wherein the second transceiver is nearby to the transceiver.	The above contentions for claim 1 are hereby incorporated by reference. "Radio frequency technology has recently tended to be the solution of choice due to its higher data rates and independence of the distribution network. RF frequencies approaching a gigahertz can be unlicensed or licensed, but unlicensed systems are significantly restricted in power output. This power restriction

	coupled with typical RF problems of attenuation, fading, noise and reflection makes some sites in a fixed network very inaccessible to a central node, and thus it can be difficult to achieve two-way performance adequate for the desired functions." '903 patent, 1:60-2:2. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23.

Exhibit P9 – Invalidity Chart for U.S. Patent No. 8,908,842 based on U.S. Patent No. 5,874,903

The '842 Patent – Claim	U.S. Patent No. 5,874,903
1. A device for communicating information, the device comprising:	"To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. Node 18 is called the "responsible node" in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node o have the ability to communicate with a given node. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21.
a low-power transceiver configured to wirelessly transmit a signal comprising instruction data for delivery to a network of addressable devices;	"The present invention (FIGS. 5-6) "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a

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	responsible node 18. Node 18 is called the "responsible node" in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node o have the ability to communicate with a given node. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:65-5:21. Figure 5.
an interface circuit for communicating with a central location; and	'903 patent, Figure 5.
a controller coupled to the interface circuit and to the low-power transceiver, the controller configured to establish a communication link between at least one device in the network of addressable devices and the central location using an address included in the signal, the communication link comprising one or more devices in the network of addressable, the controller further configured to receive one or more signals via the low-power transceiver and communicate information contained within the signals to the central location.	'903 patent, Figure 5. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from

	"10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Fig. 6.
7. The device of claim 1, wherein the controller is further configured to communicate a transceiver identification code to the central location via the interface circuit.	The contentions for claim 1 are hereby incorporated by reference. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
9. The device of claim 1, wherein transmitted and received signals further comprise a field configured to indicate a destination device for a subsequent transmission path to follow.	The contentions for claim 1 are hereby incorporated by reference. "referring now to FIG. 3, a pass through protocol useful in this system includes a CEBus protocol embedded in a meter protocol, which in turn is embedded in a node protocol. Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits." '903 patent, Figure 3.
16. A device for communicating information, the device comprising:	"To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…,

	12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. Node 18 is called the "responsible node" in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node to have the ability to communicate with a given node. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21.
a processor; and	The receive signal from the node 18 is modulated by ASK (amplitude shift keying) at a first rate (rate 1). … To permit the meter to function as a repeater and allow a downstream meter to be heard by the repeater, the meter transmitters are able to duplicate the signals normally received from the node 18.
a memory, the memory comprising logical instructions that when executed by the processor are configured to cause the device to:	"Node 18 is called the "responsible node" in this example because it has primary responsibility for communicating with meters 12A-12D…." '903 patent, 5:9-11.
wirelessly transmit a signal comprising instruction data for delivery to a network of addressable low-power transceivers;	"Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from

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	"10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10.
establish a communication link between at least one low-power transceiver in the network of addressable low-power transceivers and a central location based on an address included in the signal, the communication link comprising one or more low-power transceivers in the network of addressable low-power transceivers; and	"Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10.
receive one or more low-power RF signals and communicate information contained within the signals to the central location along with a unique transceiver identification number over the communication link.	"Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5),

	the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6.
17. A device for communicating information, the device comprising:	"To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. Node 18 is called the "responsible node" in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node o have the ability to communicate with a given node. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter."

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	'903 patent, 4:66-5:21.
a low-power transceiver that is configured to wirelessly receive a signal including an instruction data from a remote device;	"The present invention (FIGS. 5-6) "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. Node 18 is called the "responsible node" in this example because it has primary responsibility for communicating with meters 12A-12D, although it is possible for more than one node o have the ability to communicate with a given node. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:65-5:21. Figure 5.
an interface circuit for communicating with a central location;	'903 patent, Figure 5.
a controller coupled to the interface circuit and to the low-power transceiver, the controller being configured to establish a communication link between the remote device and the central location using address-indicative data included in the signal;	'903 patent, Figure 5. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3. "Referring now to FIG. 6, the method of operation of a given

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	meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Fig. 6.
the controller further configured to receive one or more data signals from the central location via the interface circuit and communicate information contained within the signals to the remote device.	'903 patent, Figure 5. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FOG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FOG. 5),

	the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Fig. 6.

Exhibit P9 – Invalidity Chart for U.S. Patent No. 6,914,893 based on U.S. Patent No. 5,874,903

The '893 Patent – Claim	U.S. Patent No. 5,874,903
1. A system for communicating commands and sensed data between remote devices, the system comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43.

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	"The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22.

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	'903 patent, Figure 1. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. '903 patent, Figure 2. "This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C, … 12D, where meter 12D is considered 'inaccessible' (i.e., difficult to reach by direct RF communications) with respect to a responsible node 18." '903 patent, 5:4-8. '903 Figure 5. "To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information

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	from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to

communicating via preformatted messages;	receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "In all cases, the two-way RF system can be utilized for read/write data required for the system (with all messages ported through the meter)." '903 patent 2:36-38. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14. The meter also includes a modem for so called dialback telephone communications with the AMR network, a UART transceiver, or the like, for communicating with the CEBus LAN 10, and a meter processor for controlling the metering functions as required for a

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	given application." 4:1-7.
wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"Referring now to FIG. 3, a pass through protocol useful in this system includes a CEBus protocol which in turn is embedded in a meter protocol." '903 patent, 4:20-22.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header.

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	ETE Header: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43.

	'252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition

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	to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing:

	Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
sender address comprising the unique address of the sending transceiver;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

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a command indicator comprising a command code;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
at least one data value comprising a scalable message; and	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header

	corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or

	destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information

	is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59.

	'252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector comprising a redundancy check error detector; and	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed

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	through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages.	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "For example, a host can send table information to a node that will cause a group of meters to be read. The node can send table information to the meter that will cause a CEBus communication to take place. In addition, the normal meter reading information is passed in table format from the meter to the node. '903 patent, 4:32-41.
2. The system of claim 1, wherein the plurality of transceivers further comprise at least one integrated transceiver, wherein the integrated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference. "System Overview (FIGS 1-4) To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, an electronic meter 12 (actually a plurality of such

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	meters and LANs), and a fixed AMR network 14. The meter 12 utilizes a two-way RF protocol, for communicating with the AMR network 14, that allows very cost effective meter reading to take place." '903 patent, 3:16-24.
one of the plurality of transceivers; and	"System Overview (FIGS 1-4) To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, an electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14. The meter 12 utilizes a two-way RF protocol, for communicating with the AMR network 14, that allows very cost effective meter reading to take place." '903 patent, 3:16-24.
a sensor detecting a condition and outputting a sensed data signal to the transceiver.	"System Overview (FIGS 1-4) To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, an electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14. The meter 12 utilizes a two-way RF protocol, for communicating with the AMR network 14, that allows very cost effective meter reading to take place." '903 patent, 3:16-24.
3. The system of claim 2, wherein the at least one integrated transceiver receives the preformatted command message requesting sensed data, confirms the receiver address as its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message	The above contentions for claim 2 are hereby incorporated by reference. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and,

comprising at least one packet, wherein the packets are equal to the number of segments.	depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903 patent, 4:27-31 "For example, a host can send table information to a node that will cause a group of meters to be read. The node can send table information to the meter that will cause a CEBus communication to take place. In addition, the normal meter reading information is passed in table format from the meter to the node." '903 patent, 4:32-41. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and

	fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g.,

	information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some

	information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

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	In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
10. The system of claim 1, wherein the plurality of transceivers further comprise at least one actuated transceiver, wherein the actuated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference. The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition

	to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14. The meter also includes a modem for so called dialback telephone communications with the AMR network, a UART transceiver, or the like, for communicating with the CEBus LAN 10, and a meter processor for controlling the metering functions as required for a given application." 4:1-7.
one of the plurality of transceivers;	The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements.

	FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.
a sensor detecting a second condition and outputting a sensed data signal to the transceiver; and	The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10. This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.
an actuator controlling a third condition and receiving control signals from the transceiver.	"The CEBus protocol provides a link to a remote residential display for simple AMR as well as higher functions. In addition to the display capability, CEBus provides a peer-to-peer communication capability which allows the meter to pass through information to any other device that is on the CEBus LAN 10.

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	This effectively allows the meter to be the gateway into the residential system for all levels of communications requirements. FIG. 2 provides a more detailed illustration of the system. As shown, the CEBus LAN 10 includes a thermostat/display device 10A that can be used by the meter to display information to the customer (via CEBus communications). In addition, the LAN 10 may include relay 10B, lighting 10C and security 10D subsystems that may be controlled through the CEBus protocol." '930 patent, 3:53-67. '930 patent, Figure 2.
17. A system for communicating commands and sensed data between remote devices, the system comprising:	"An automatic meter reading system utilizes repeater technology to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the

	steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller." '903 patent, 2:11-13. "In one presently preferred embodiment of the invention, the meter is operable to receive messages transmitted with a first

communicates with the other transceivers via preformatted messages;	prescribed signal type, to transmit responsive messages with a second prescribed signal type, and to repeat messages with the first prescribed signal type." '903 patent, 2:19-23. "To make an AMR system adaptive to higher functions, a variety of communication protocols may be incorporated into a solid state meter. As shown in FIG. 1, the AMR system includes a CEBus LAN 10, and electronic meter 12 (actually a plurality of such meters and LANs), and a fixed AMR network 14." '903 patent, 3:17-22. '903 patent, Figure 1. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14." '903 patent, 4:1-2. "The AMR network 14, in the embodiment of FIG. 2. includes an RF node 14A (actually a plurality of such nodes) and a host computer, or server, 14B (or multiple hosts, as needed)." '903 patent, 4:14-16. '903 patent, Figure 2. "This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C, … 12D, where meter 12D is considered 'inaccessible' (i.e., difficult to reach by direct RF communications) with respect to a responsible node 18." '903 patent, 5:4-8. '903 Figure 5.

	"To make the RF system adaptive to read the hard to access meters within the network, it would be advantageous to have a method by which the node transceiver could be effectively moved closer to the heard to access meter. The present invention provides just such a method by allowing any meter in the network to be a repeater. This concept is depicted in FIG. 5, which schematically depicts a plurality of meters 12A, 12B, 12C…, 12D, where meter 12D is considered 'inaccessible" (i.e., difficult to reach by direct RF communication) with respect to a responsible node 18. … With the present invention, information from the AMR node 18 that does not each the 'inaccessible" meter 12D can be routed through a meter (e.g., meter 12C) that the node does reach and has the capability to reach the hard to access meter." '903 patent, 4:66-5:21. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond

	(step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6. "The node knows which meter the data is from by the unique address and which RPT from the RPT field." '903 patent, 7:2-3.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages, wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "In all cases, the two-way RF system can be utilized for read/write data required for the system (with all messages ported through the meter)." '903 patent 2:36-38. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This

	capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60. "The meter includes an RF transceiver for communicating normal and exception AMR traffic to the AMR network 14. The meter also includes a modem for so called dialback telephone communications with the AMR network, a UART transceiver, or the like, for communicating with the CEBus LAN 10, and a meter processor for controlling the metering functions as required for a given application." 4:1-7.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers*

	Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields

	demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service

	modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse

	poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
sender address comprising the unique address of the sending	"Meter information in a node protocol packet includes meter ID, a

transceiver;	repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a command indicator comprising a command code;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
at least one data value comprising a scalable message; and	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more

	of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets:

	U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43.

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	'252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the

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	nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.

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	Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector comprising a redundancy check error detector;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages; and	"The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "For example, a host can send table information to a node that will cause a group of meters to be read. The node can send table information to the meter that will cause a CEBus communication to take place. In addition, the normal meter reading information is passed in table format from the meter to the node. '903 patent, 4:32-41. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins

	with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10. '903 patent, Figure 6.
wherein at least one of the plurality of transceivers further sends preformatted emergency messages.	"The protocol preferably also has the capacity to allow the meter to report an exception for events such as security related activities and outage reporting." '903 patent, 3:47-49. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to

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	the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1.
18. The system of claim 17, wherein the controller maintains periods of silence by not sending the preformatted command messages during predetermined time periods; and	The above contentions for claim 17 are hereby incorporated by reference. "FIG. 4 is a more detailed block diagram of a solid state electronic meter 12. As shown, the meter 12 includes a control processor; communications processor; clock; memory; analog-to-digital (A/D) convertor (for digitizing input voltage and current measurements); math coprocessor; energy, demand and time of use processors; and button, display and relay handlers." '903 patent 4:42-48. "The protocol preferably also has the capacity to allow the meter

	to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1.
wherein the at least one of the plurality of transceivers detects a	"The protocol preferably also has the capacity to allow the meter

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period of silence and sends the preformatted emergency message during the period of silence.	to report an exception for events such as security related activities and outage reporting." '903 patent, 3:47-49. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1.
37. A method of communicating between geographically remote	"An automatic meter reading system utilizes repeater technology

devices, the method comprising:	to access hard to read meters within a fixed network structure. The components of the radio system that are needed for two-way communications are employed without adding significant cost to the meter. Using this approach, each meter in the network has the ability to repeat messages as required." '903 patent, abstract. "The present invention provides a utility meter for use in an AMR network. The meter includes a radio frequency (RF) transceiver, metering means, and a controller. The meter is programmed to receive a message from an AMR node via the RF transceiver and, depending on the content of the message, to respond to the node or repeat the message by sending a modified message in a format that is receivable by another meter in the AMR network." '903 patent, 2:11-18. "The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "The basic requirement for all the various systems mentioned above is a robust two-way RF protocol that links the meter with a host computer of the AMR network 14. This protocol must have

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	the capability to pass messages through the meter 12 into the CEBus network 10. This pass through signaling permits rate management for electricity (in an electric meter application), message displays for customer alerts, demand side management deployment and other activities. The protocol preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting. This capability within the RF protocol for advanced functions is included without burdening the basic capability of the meter to accomplish simple AMR in a very cost effective manner." '903 patent, 3:39-60.
sending a message;	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5),

	the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10
receiving the message at one or more of the remote devices;	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5),

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processing the message;	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5),

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preparing a response message;	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5),

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receiving the response message;	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5),

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processing the response message	"The present invention also provides a method for operating a utility meter used in connection with a fixed automatic meter reading (AMR) network. The inventive method comprises the steps of: receiving a message originated by an AMR node; determining whether the message is to be repeated; if the message is not to be repeated, determining whether the meter must respond to the message and, if so, transmitting a responsive message containing meter data; and if the message must be repeated, creating a modified message and transmitting the modified message. In accordance with the invention, the modified message is formatted to be receivable by another meter in the AMR network." '903 patent, 2:32-43. "Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is intended for a downstream meter (such as meter 12D of FIG. 5),

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wherein all messages comprise at least one packet, the packet having a predetermined format;	"Referring now to FIG. 3, a pass through protocol useful in this system includes a CEBus protocol which in turn is embedded in a meter protocol." '903 patent, 4:20-22.
wherein the predetermined format comprises:	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a receiver address comprising a scalable address of the at least one of the intended receiving remote devices;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different

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	system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed

	throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to

	eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and

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	"network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

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	Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a sender address comprising an unique address of the sender;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a command indicator comprising a command code;	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a scalable data value comprising a scalable message; and	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection

	bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '903 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '903 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR,

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	encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules

	belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source

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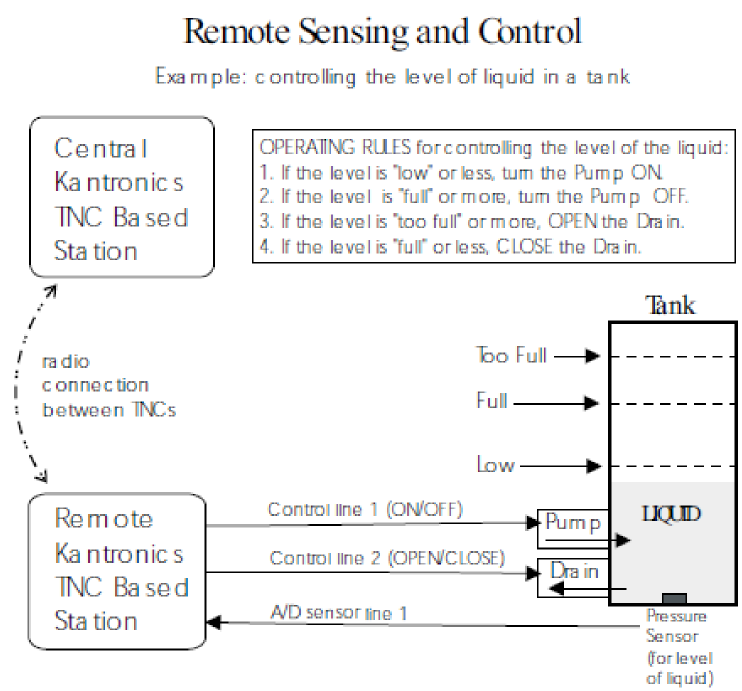
	Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector that is a redundancy check error detector; and	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
wherein the steps of sending and receiving are repeated until the message is received by the intended receiver.	"Referring now to FIG. 6, the method of operation of a given meter will now be summarized. The inventive method begins with the reception of a message (step S1). Next, the meter determines whether this is a message to be repeated (step S2). This is accomplished by examining the "repeat" field of the meter protocol (FIG. 3). If the message is to be repeated, i.e., is

	intended for a downstream meter (such as meter 12D of FIG. 5), the meter modifies the message (step S3) and then retransmits it as an ASK signal that may be received by the other meters (step S4). The message is modified in step S3. (For example, the message may be modified by changing a two-bit field to indicate the end meter is to respond (e.g., the filed may be changed from "10" to "00")….If, on the other hand, the message is not to be repeated (as determined at step S2), meaning that this meter is the intended recipient, the meter determines whether it must respond (step S5) and if so, transmits an appropriate response (step S6) in the FSK format for reception by the node 18." '903 patent, 5:56-6:10.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,697,492 based on Kantronics

The '492 Patent – Claim	Kantronics KPC-3 – Users Guide, 1997 ("Kantronics")
1. In a communication system to communicate command and sensed data between remote devices, the system comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to

	two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

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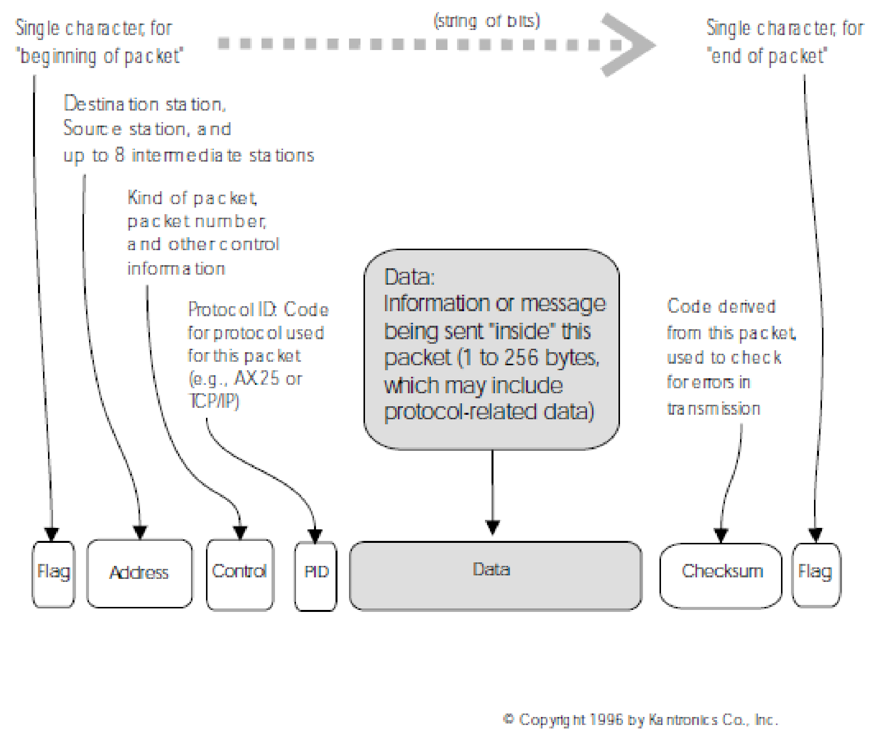
a receiver address comprising a scalable address of at least one remote device;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,697,492 based on Kantronics

	to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.  The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been

	obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets:

	U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31.

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	"For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND

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	broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a command indicator comprising command code;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote

	control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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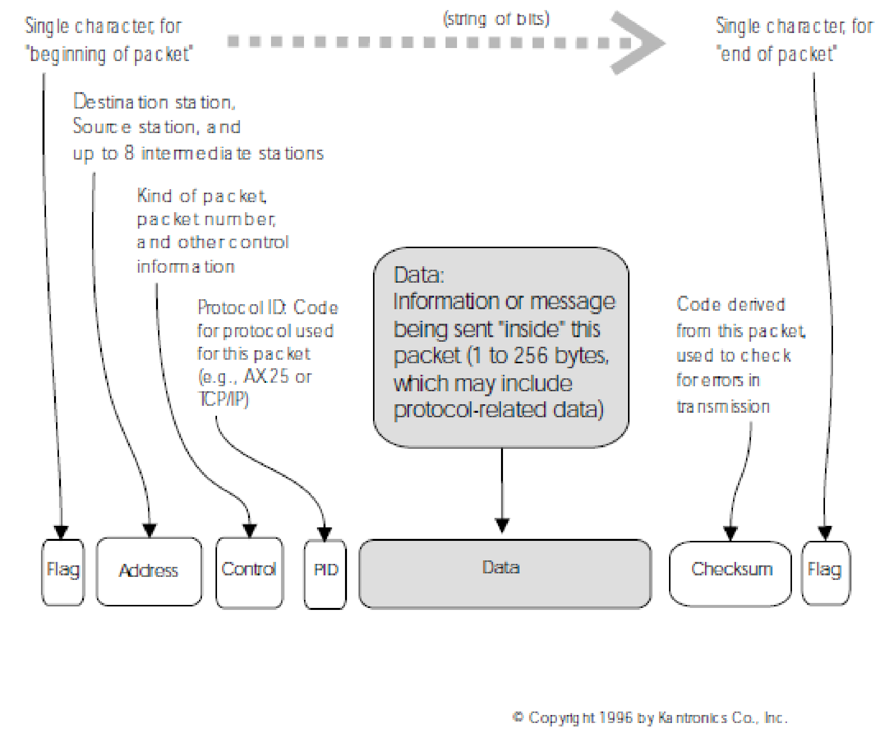
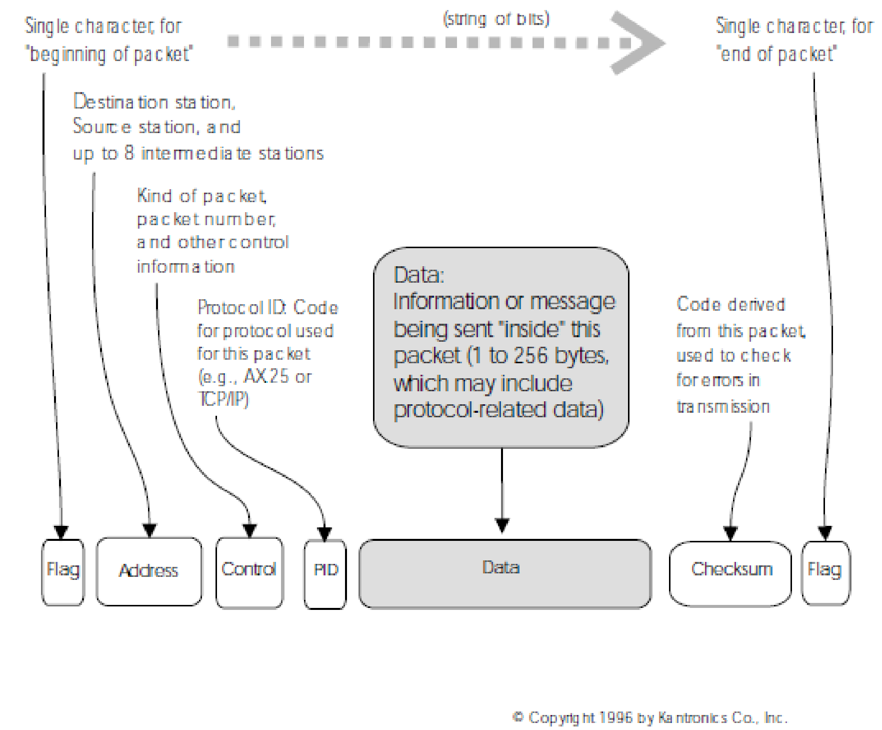
	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 (“the ‘217 patent”), U.S. Patent No. 5,963,650 (“the ‘650 patent”), U.S. Patent No. 5,907,491 (“the ‘491 patent”),

	U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to

	one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to

	be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a data value comprising a scalable message; and	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC.

	• The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
a controller associated with a remote device comprising a transceiver configured to send and receive wireless signals, the remote device configured to send a preformatted message comprising the receiver address, a command indicator, and the data value via the transceiver to at least one other remote device.	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth

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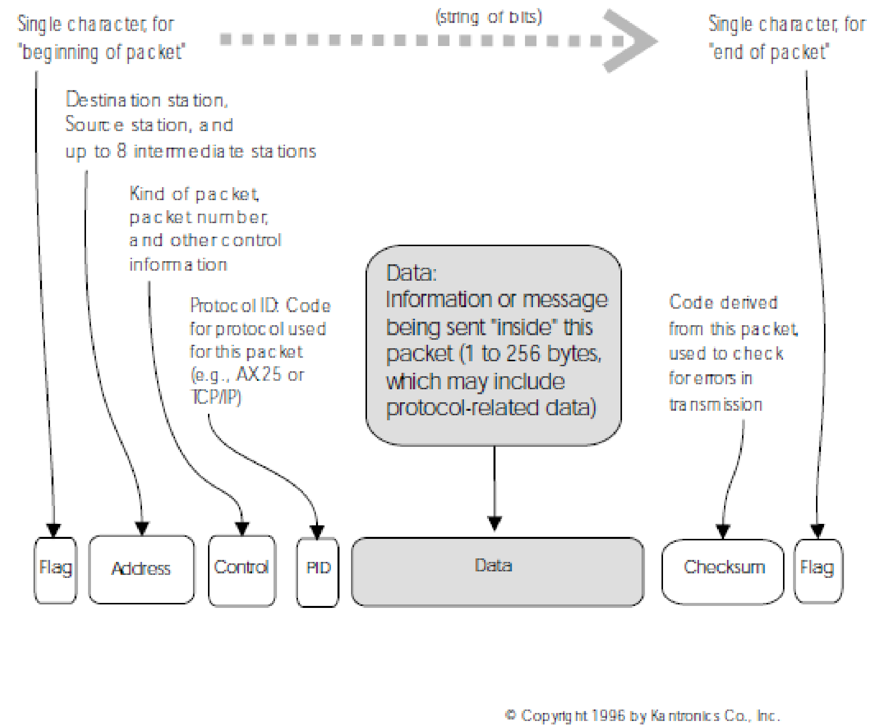
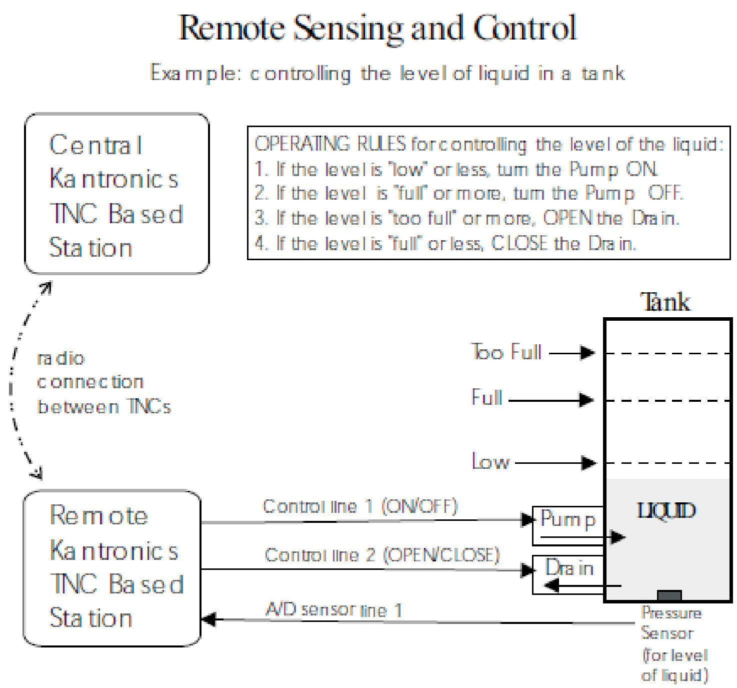
	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
2. The system of claim 1, further comprising:	The above contentions for claim 1 are hereby incorporated by reference.
a plurality of transceivers each having a unique address, the transceiver being one of the plurality of transceivers;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics

	TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long

	(about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
a plurality of controllers associated with each the controller associated with at least one of the transceivers, the controller being in communication with at least one other transceiver with a preformatted message, the preformatted message having at least one scalable field;	"The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio

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	signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference.

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	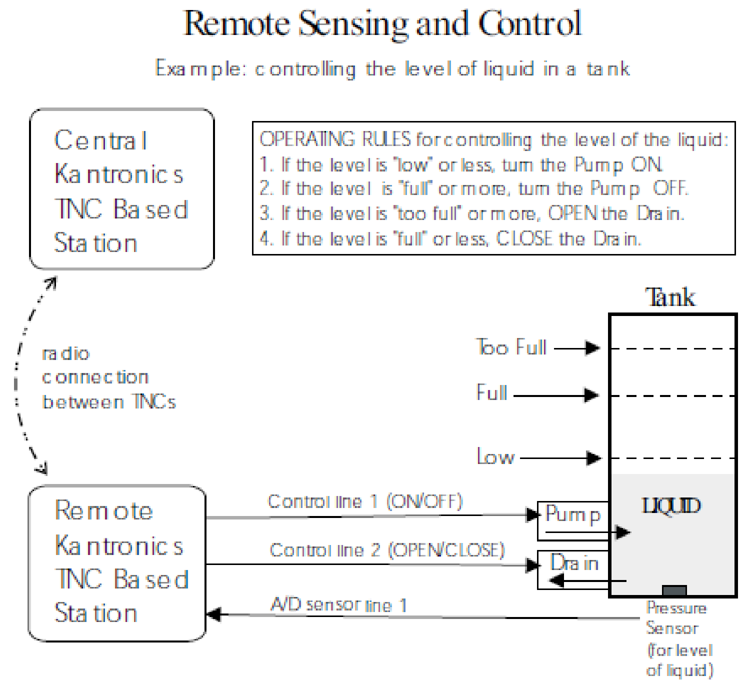 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which

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	add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired,

	control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset,

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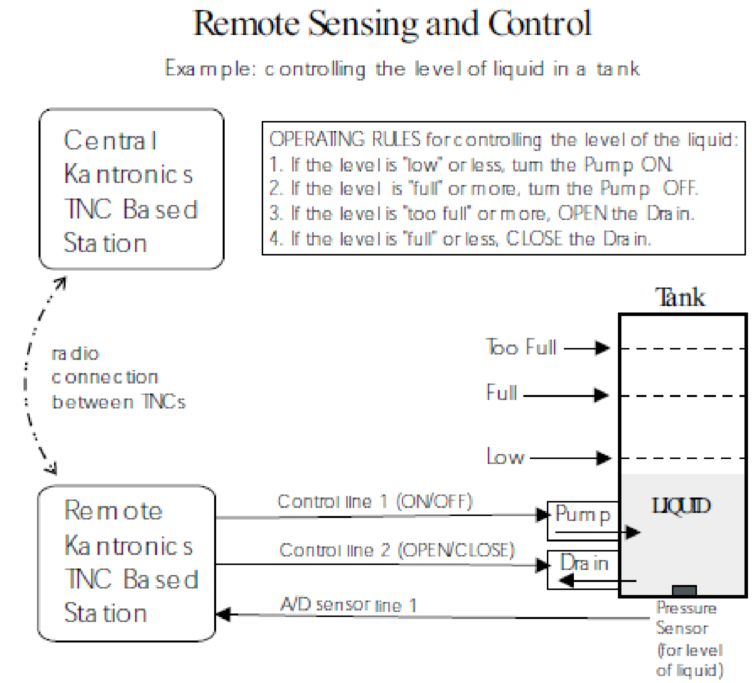
at least one sensor associated with at least one of the transceivers to detect a condition and output a data signal to the transceiver; and	 Kantronics, p. 167.

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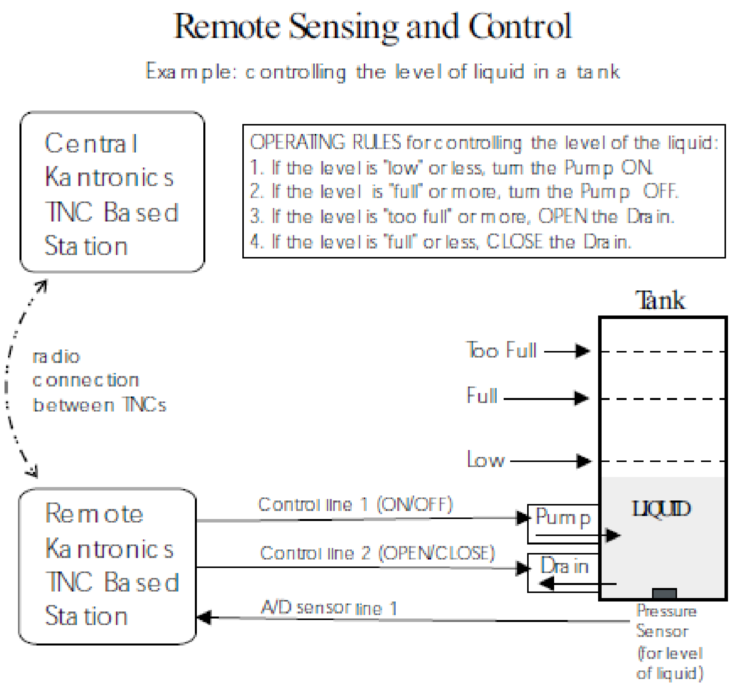
at least one actuator associated with at least one of the transceivers to activate a device.	 Kantronics, p. 167.
3. The system of claim 1, wherein the controller sends the preformatted message via an associated transceiver, and at least one transceiver sends the preformatted response message.	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio

	signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	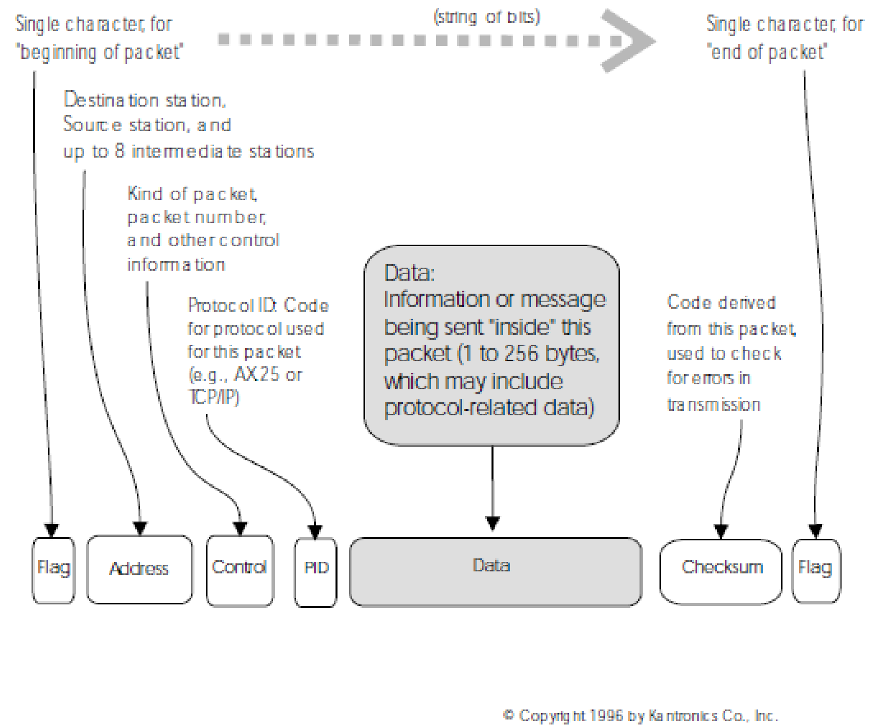 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
4. The system of claim 1, wherein at least one transceiver receives the preformatted message requesting sensed data, confirms the receiver address as its own unique address, receives a sensed data signal, formats the sensed data signal into scalable byte segments, determines the number of segments required to contain the sensed data signal, and	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to

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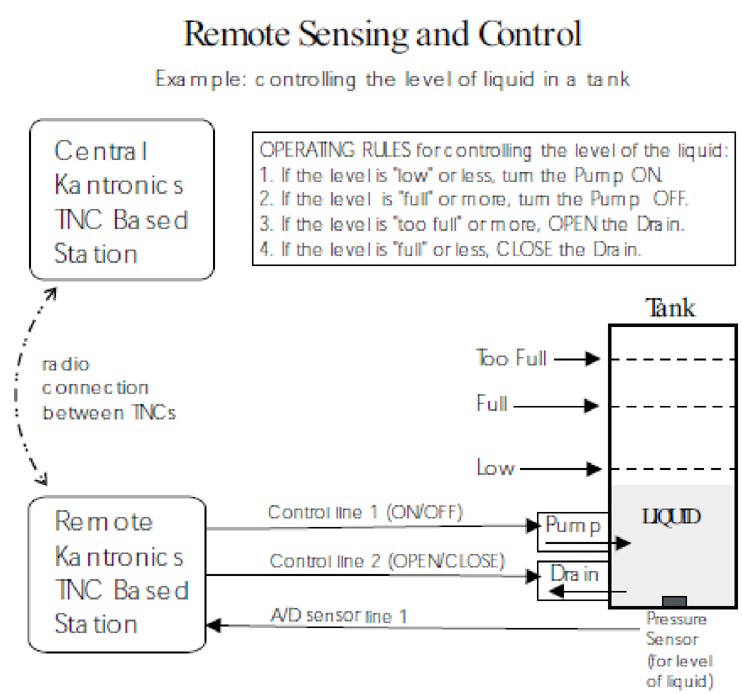
generates and transmits the preformatted response message comprising at least one packet.	establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL

	command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
6. The system of claim 1, wherein each remote device is adapted to transmit and receive radio frequency transmissions to and from at least one other transceiver.	The above contentions for claim 1 are hereby incorporated by reference. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth

	between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the

	analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	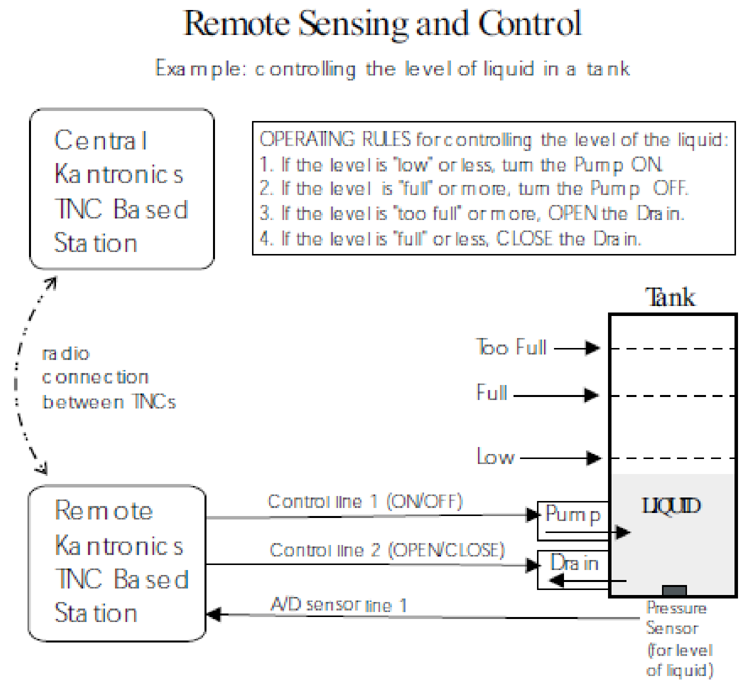 Kantronics, p. 167.
8. A method of communicating command and sensed data between remote wireless devices, the method comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

	• **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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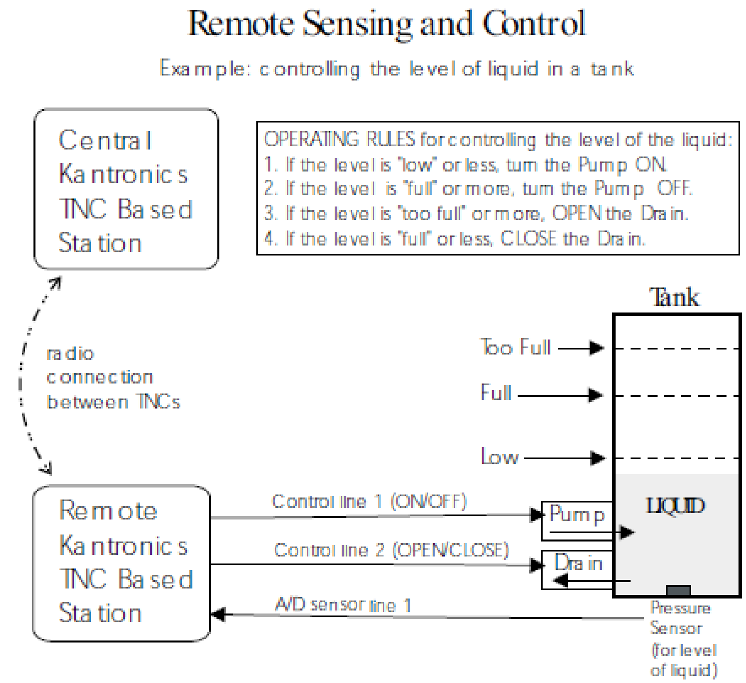
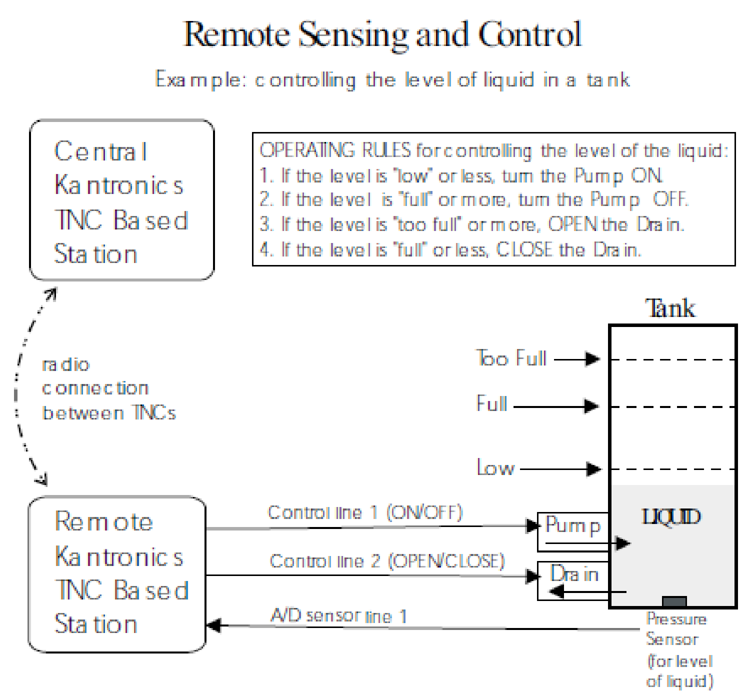
	 Kantronics, p. 167.
providing a receiver to receive at least one message;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio

	signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.  Kantronics, p. 167.
wherein the message has a packet comprising a command	"You can use two (or more) packet radio stations, each containing a

indicator comprising a command code, a scalable data value comprising a scalable message, and an error detector that is a redundancy check error detector; and	Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	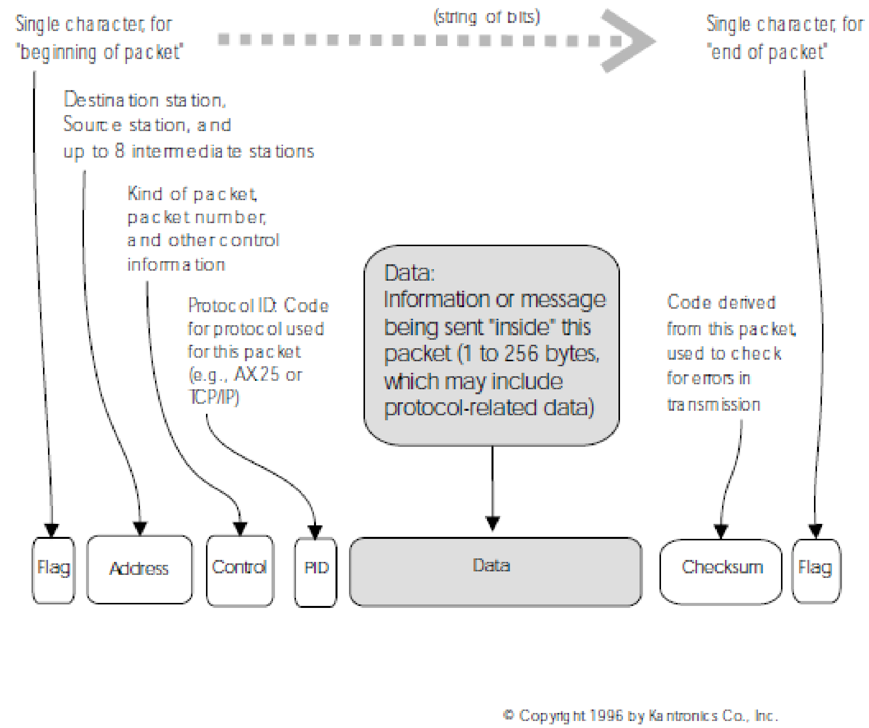 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"),

	U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. "*A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding

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	through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently

	stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions,

	authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25.

	"The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network

	service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination

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<table>
<tr><td></td><td>Network field as an extension to addressing space.

Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing “shortage of network numbers that can be assigned” for IP addressing and proposal for extending addressing fields.

Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.</td></tr>
<tr><td>providing a controller to determine if at least one received message is a duplicate message and determining a location from which the duplicate message originated.</td><td>“You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control.” Kantronics, p. 166.

“The three parts of a packet radio station work together as follows:
The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC.
The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer.
The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to,</td></tr>
</table>

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	and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	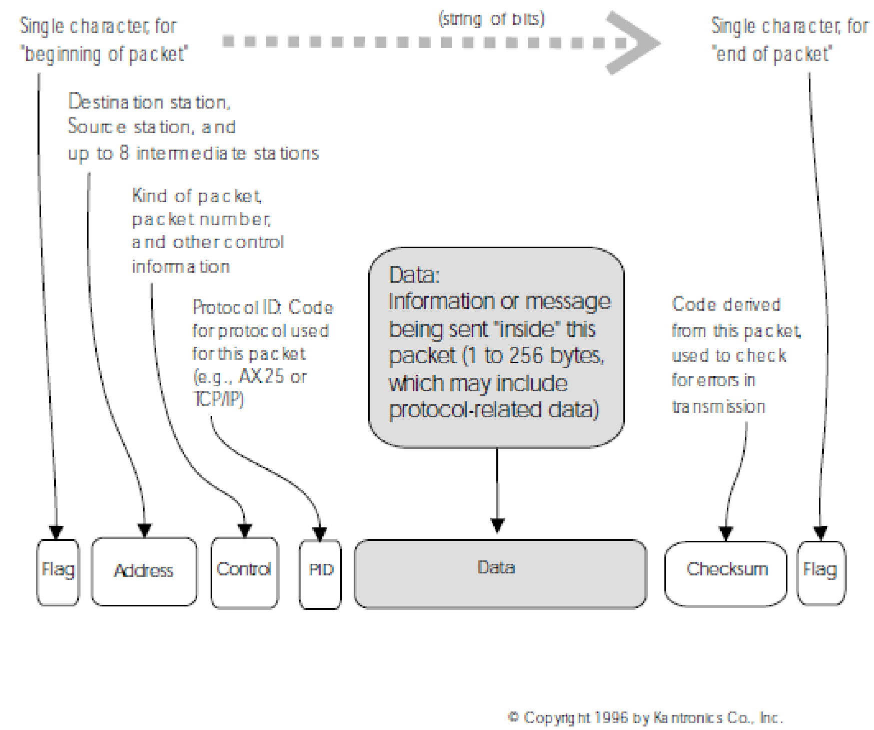 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
9. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices comprise geographically remote transceivers adapted to transmit and receive at least one message using radio frequency transmissions.	The above contentions for claim 8 are hereby incorporated by reference. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a

	Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these

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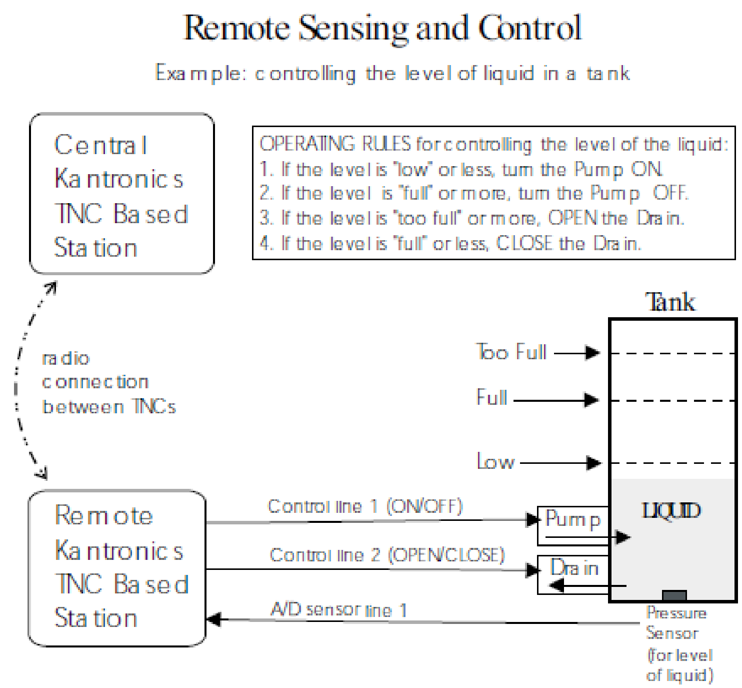
	output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
10. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at	The above contentions for claim 8 are hereby incorporated by reference.

least one of the devices has a unique address and the packet further comprises at least one scalable address field to contain the unique address for at least one device.	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets

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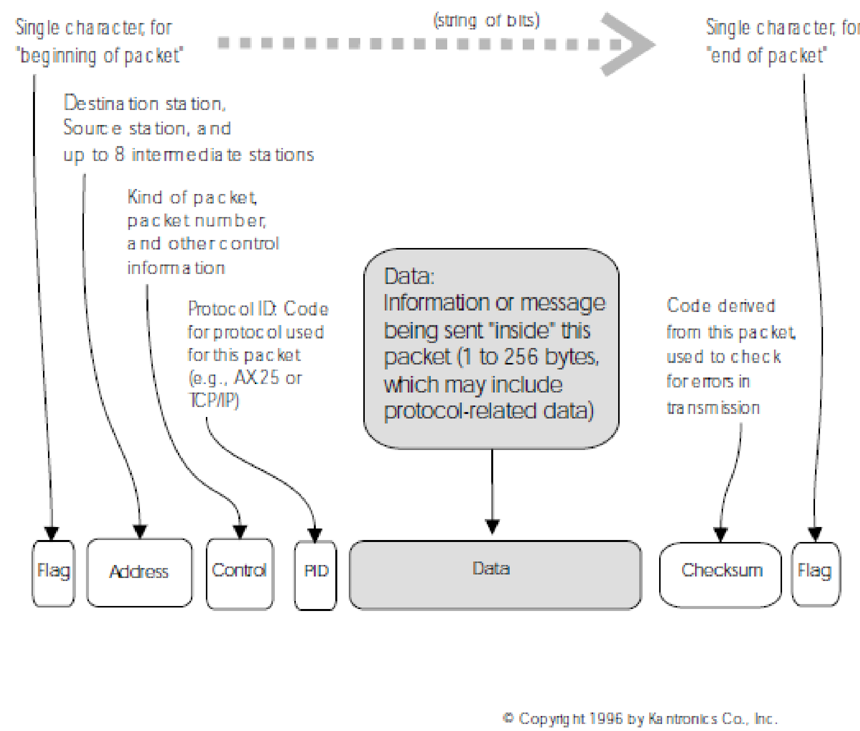

The Organization of an AX.25 Connected Information Packet

Kantronics, p. 27.

To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other

	references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link

	packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is

	identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59.

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	'252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
11. The method of claim 8, further comprising providing an actuator associated with at least one of the remote devices, the actuator configured to actuate in response to the command code.	The above contention for claim 8 is hereby incorporated by reference.

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	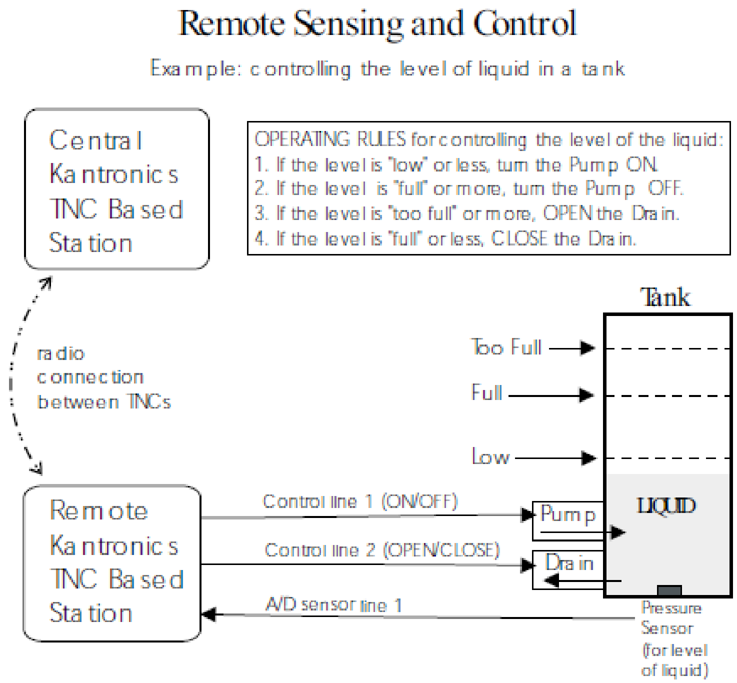 Kantronics, p. 167.
13. The method of claim 8, further comprising determining if an error exists in a packet of the at least one message.	The above contention for claim 8 is hereby incorporated by reference.

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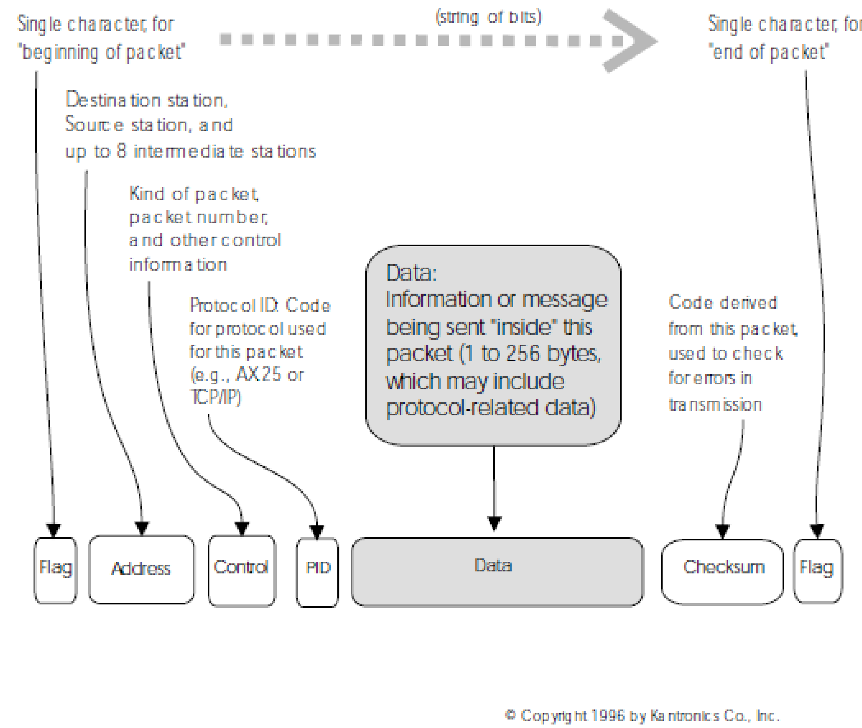
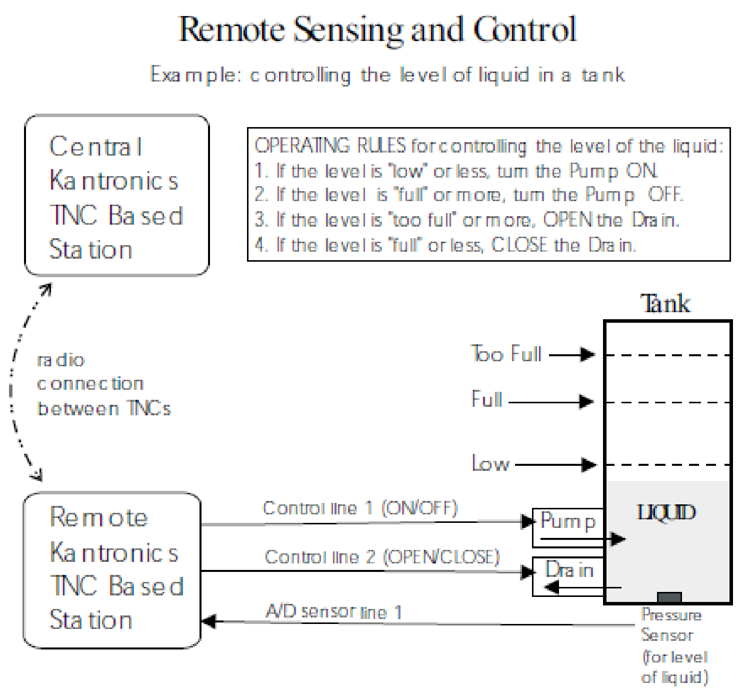
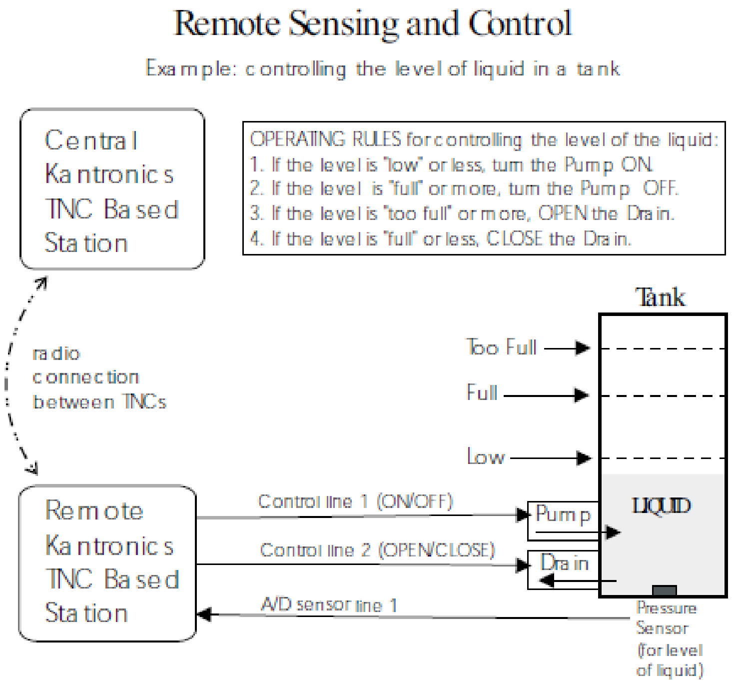
	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
14. A wireless communication device for use in a communication system to communicate command and sensed data between remote wireless communication devices, the wireless communication device comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to

	establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL

	command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
a transceiver configured to send and receive wireless communications; and	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth

	between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to format a message comprising a receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code, a data value comprising a scalable message.	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.

	 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. "*A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are

	updated by every intermediate packet radio." Jubin page 25-26. Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands

	transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses:

	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to

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	be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986,

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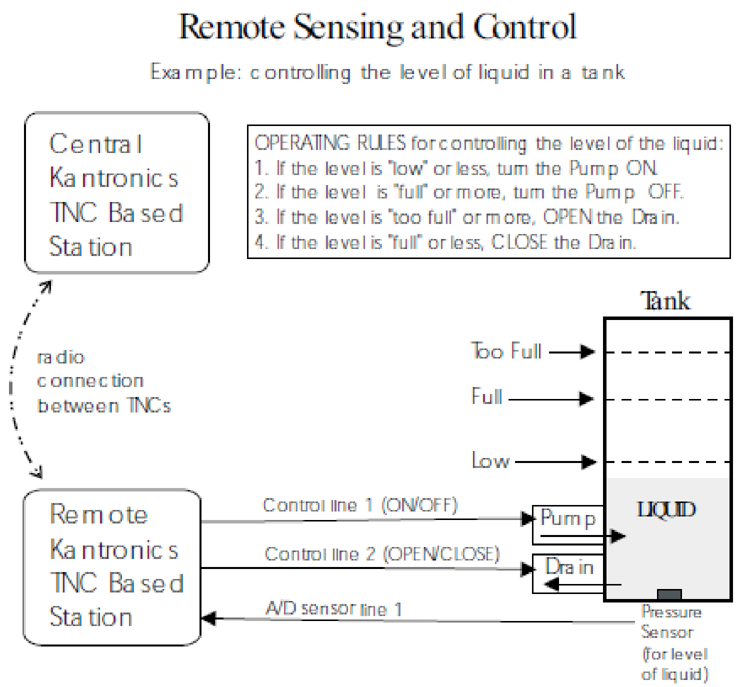
	R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
15. The wireless communication device of claim 14, further comprising at least one sensor configured to detect a condition and output a signal to the controller.	The above contentions for claim 14 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored

	in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.  Kantronics, p. 167.
16. The wireless communication device of claim 14, wherein the controller is further configured to determine if at least one received message is a duplicate message and determine a location from which the duplicate message originated.	The above contentions for claim 14 are hereby incorporated by reference.

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	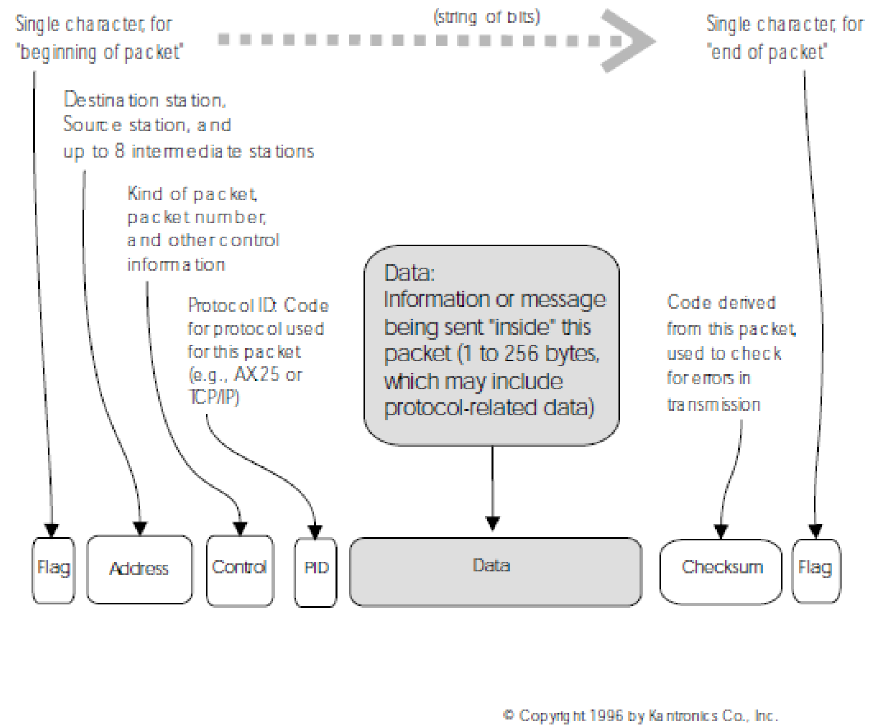 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
17. The wireless communication device of claim 14, further comprising at least one actuator configured to implement an action corresponding to the command code.	The above contention for claim 14 is hereby incorporated by reference.

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	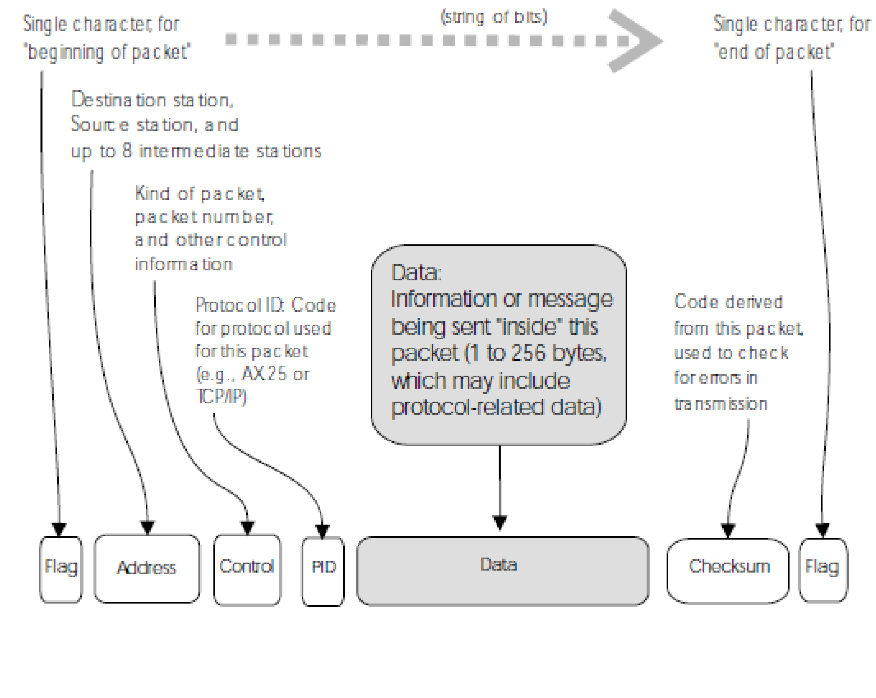 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"),

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	U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to

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	one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to

	be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
18. The device of claim 14, wherein the transceiver comprises a unique transceiver address to distinguish the transceiver from other transceivers.	The above contentions for claim 14 are hereby incorporated by reference. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20.

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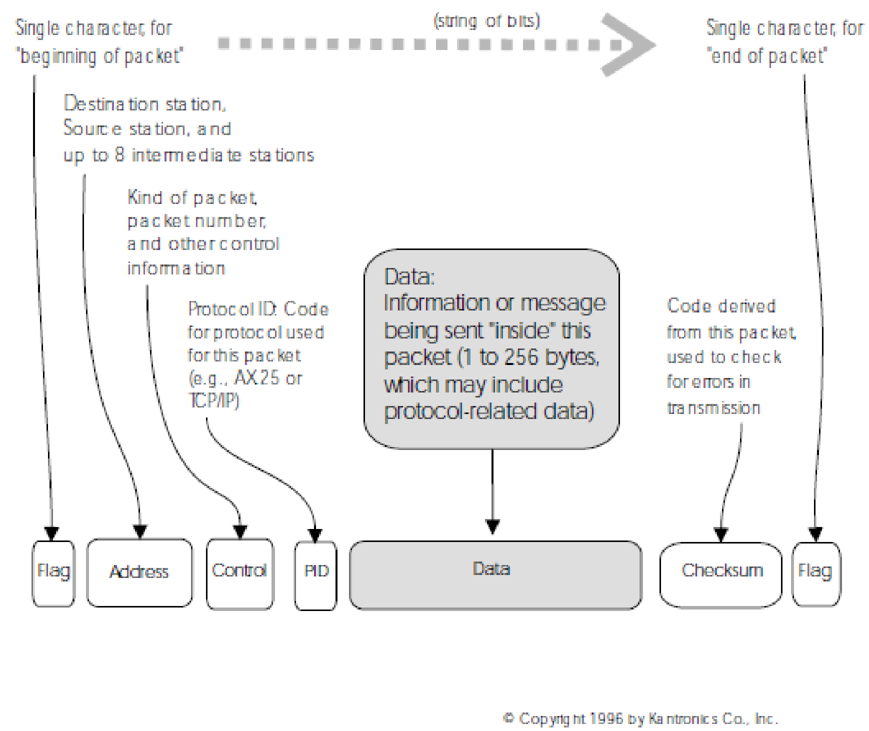
	"All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.  The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.

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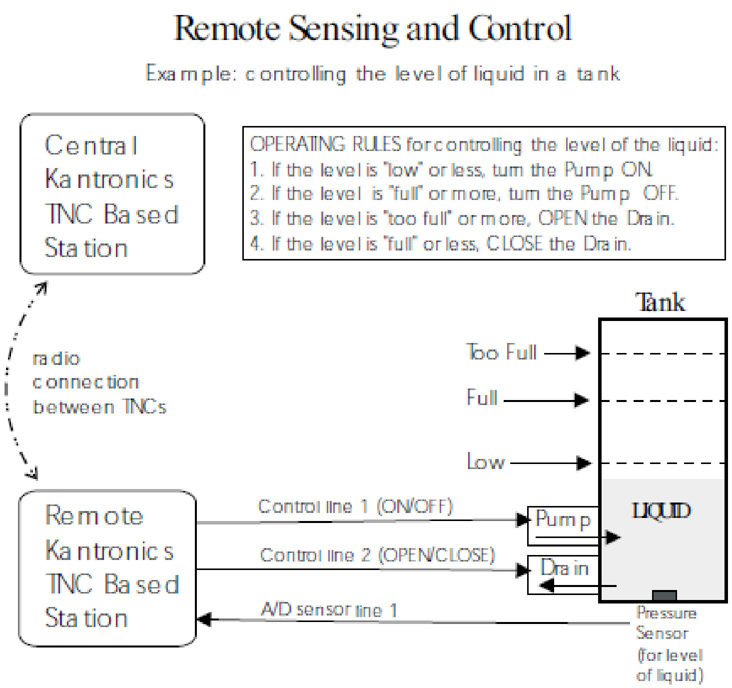
19. In a system for communicating commands and sensed data between remote devices comprising a communications device for communicating commands and sensed data, the communications device comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in

	multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

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a transceiver operably configured to be in communication with at least one other of a plurality of transceivers, wherein the transceiver has a unique address, wherein the unique address identities the individual transceiver, wherein the transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with each of the other transceivers via preformatted messages;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.
a controller configured to be in communication with the transceiver, the controller configured to provide preformatted messages for communication;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3)

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	communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.
wherein the preformatted message comprises at least one packet, wherein the packet comprises: a receiver address comprising a scalable address of the at least one of the intended receiving transceivers; sender address comprising the unique address of the sending transceiver; a command indicator comprising a command code; at least one data value comprising a scalable message; and an error detector comprising a redundancy check error detector; and wherein the controller is configured to interact with the transceiver to send preformatted command messages.	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs

	involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	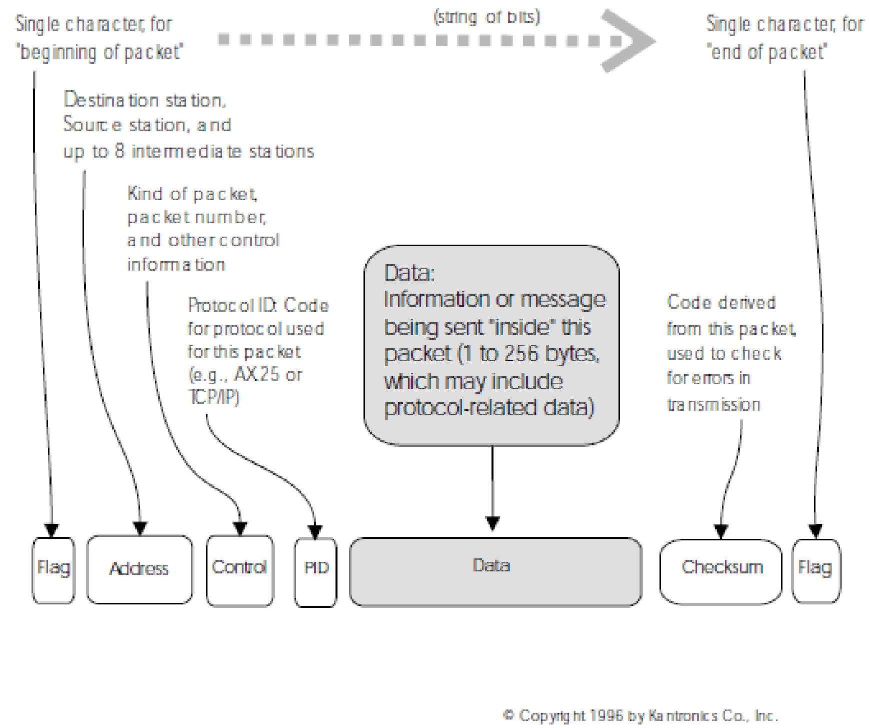 The Organization of an AX.25 Connected Information Packet To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No.

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	6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. "*A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and

	destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at

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	the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

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	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three

	delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service

	module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space.

	Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
20. The communication device of claim 19, further comprising a sensor operatively configured to detect a condition and output a sensed data signal that corresponds to the condition to the transceiver.	The above contentions for claim 19 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer.

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	• The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.
21. The communication device of claim 20, wherein the transceiver is configured to receive a preformatted command message requesting sensed data, confirms the receiver address is its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 20 are hereby incorporated by reference. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the

	Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	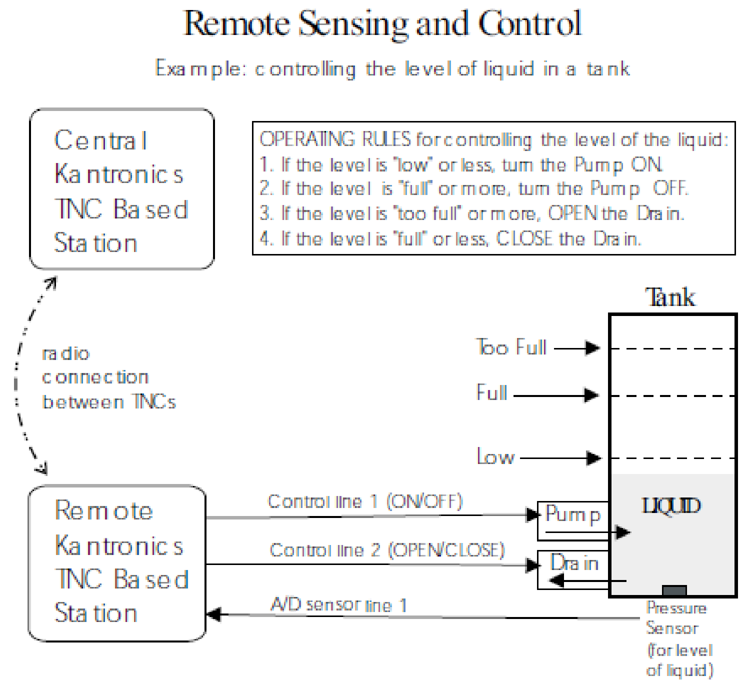 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which

	add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired,

	control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset,

	or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing:

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	Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
25. A wireless communication device for use in a communication system to communicate a number of commands and sensed data between remote wireless communication devices, the wireless communication device comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

	• **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	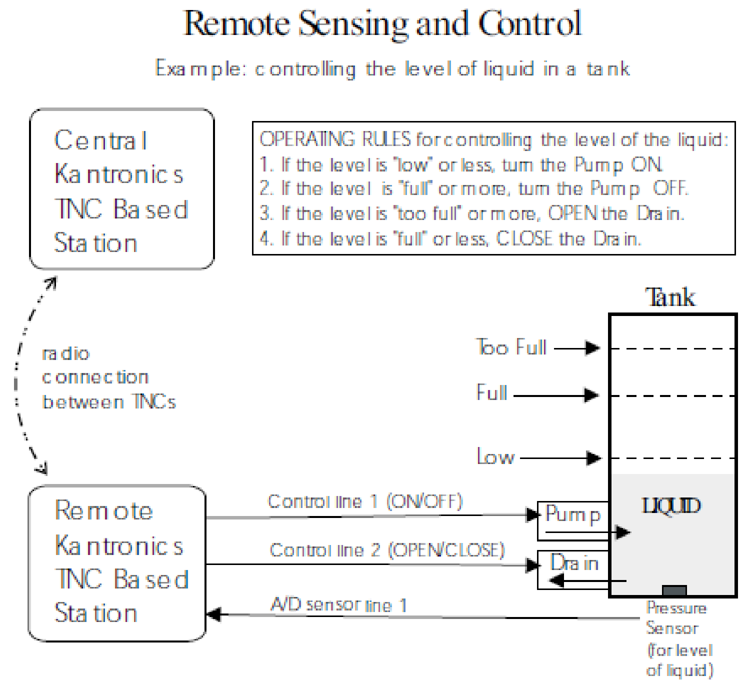 Kantronics, p. 167.
a transceiver configured to send and receive wireless communications; and	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio

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	signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to reformat a message comprising receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code; a data value comprising a scalable message.	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a

	destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	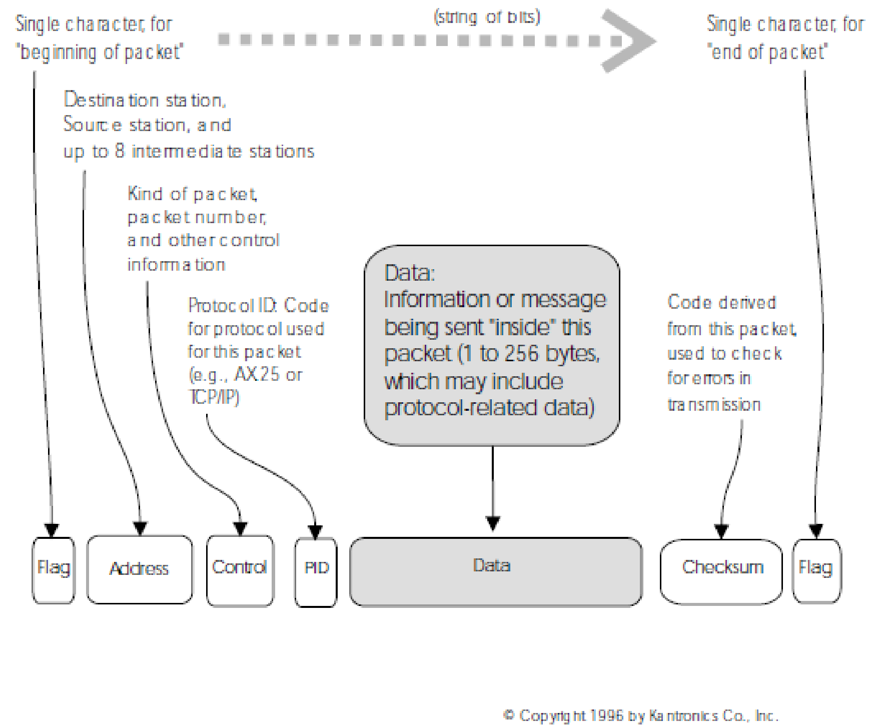 The Organization of an AX.25 Connected Information Packet To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No.

	6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. "*A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and

	destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at

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	the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three

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	delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service

	module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space.

	Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

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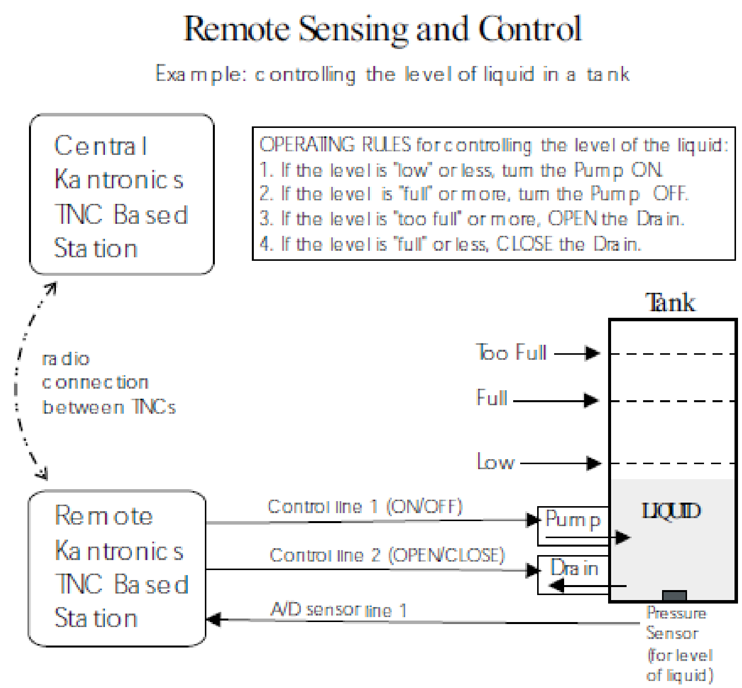
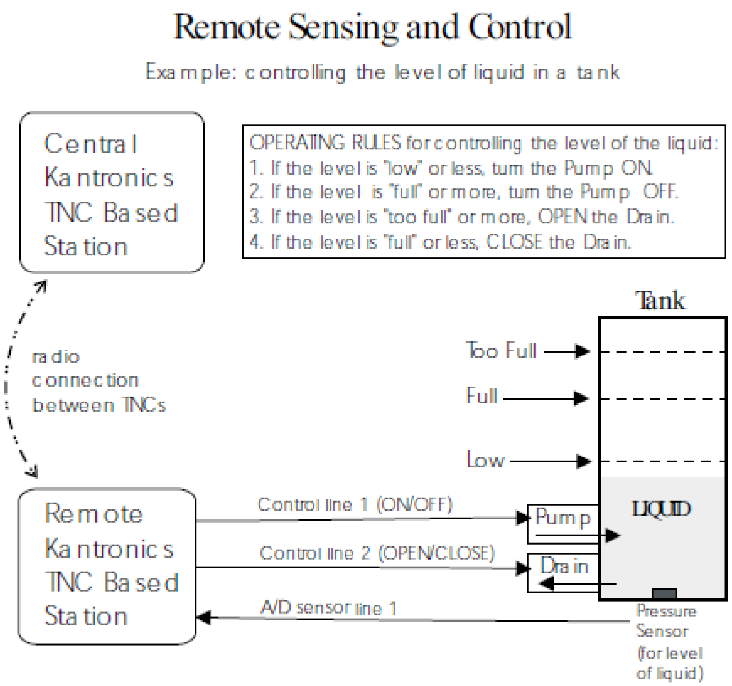
The '661 Patent – Claim	Kantronics KPC-3 – Users Guide, 1997 ("Kantronics")
1. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used

	with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated	"The following diagram illustrates the use of two Kantronics TNC/radio stations for remote controlling and sensing. These operations could be carried out manually or via a terminal program running in the computer in the central TNC station.

with a wide area network (WAN);	 Kantronics, p. 167. "**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows:

	• The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.

	"Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	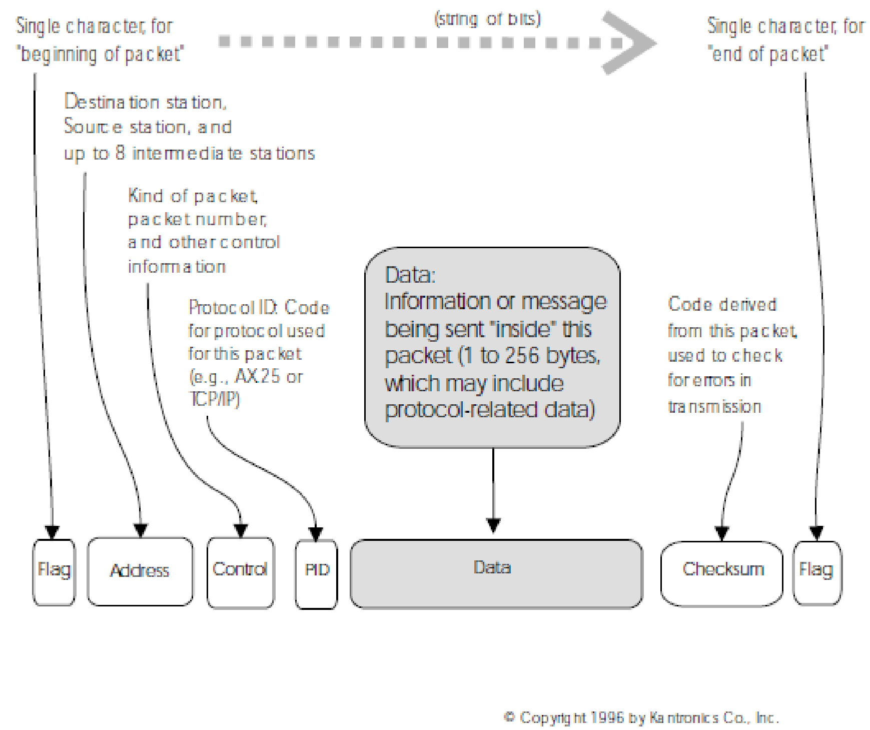 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the	"**Gateways** In Kantronics' muti-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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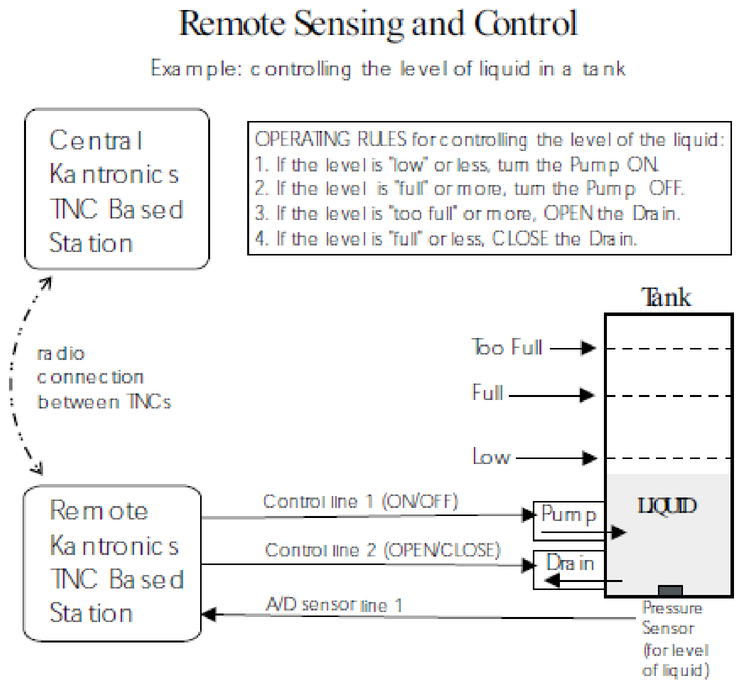
translated information to the computer over the WAN.	 Kantonics p. 167.
5. A system for monitoring remote devices, comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report

	the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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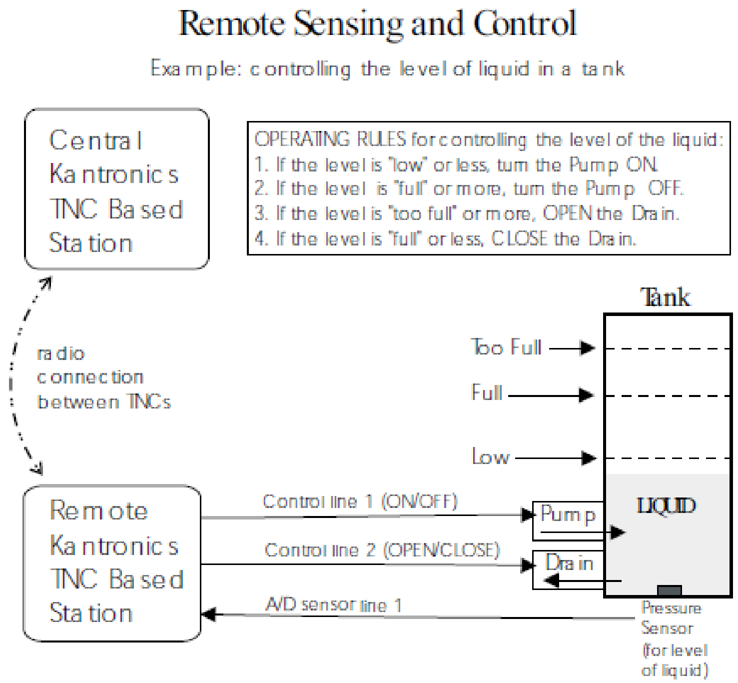
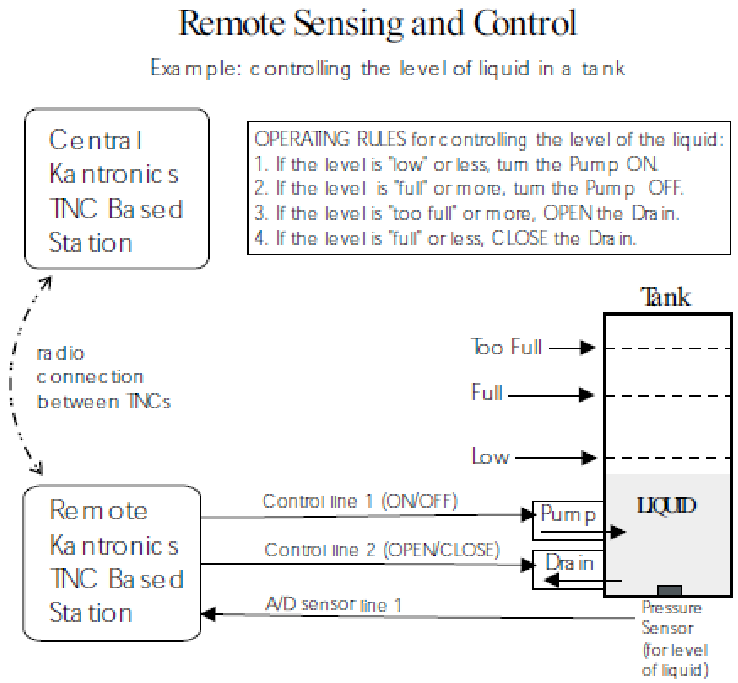
	 Kantronics, p. 167.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	

	 Kantronics, p. 167.

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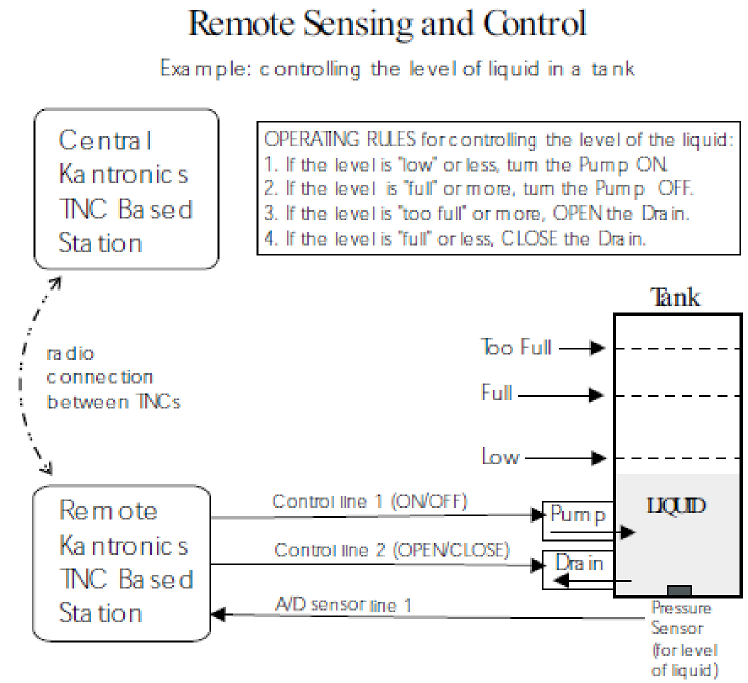
at least one wireless transmitter electrically interfaced with the sensor and configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a radio-frequency (RF) signal;	 "**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and

	the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
one or more additional wireless transmitters each electrically interfaced with a sensor and configured to receive the RF signal and retransmit the RF signal;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference.

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	+ **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167. "Digipeating Everything we have done so far will only be heard by those within range to hear your signal. With packet radio it is possible to go farther than that. The DIGIPEAT parameter in the TNC comes defaulted ON. This makes your TNC a possible relay station, or digital repeater—digipeater, or just digi for short." Kantronics page 105.

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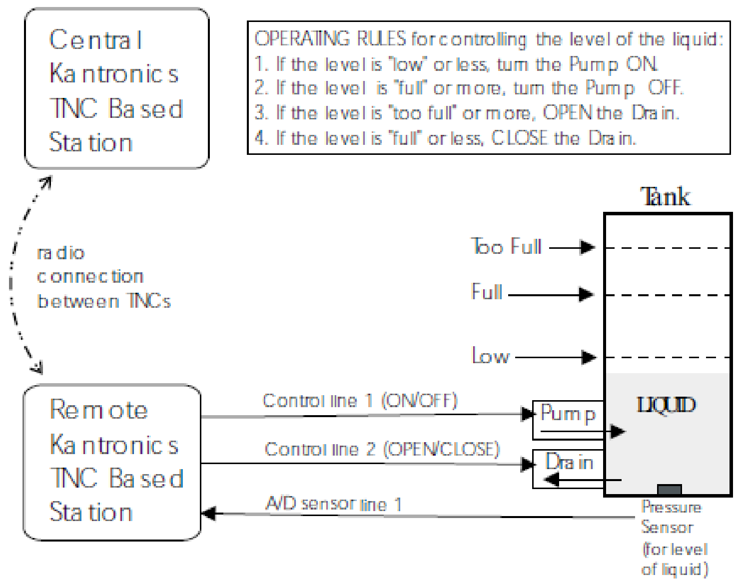
	Remote Sensing and Control Example: controlling the level of liquid in a tank 
at least one gateway connected a wide area network (WAN) configured to receive and translate the retransmitted RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	"**Gateways** In Kantronics' muti-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	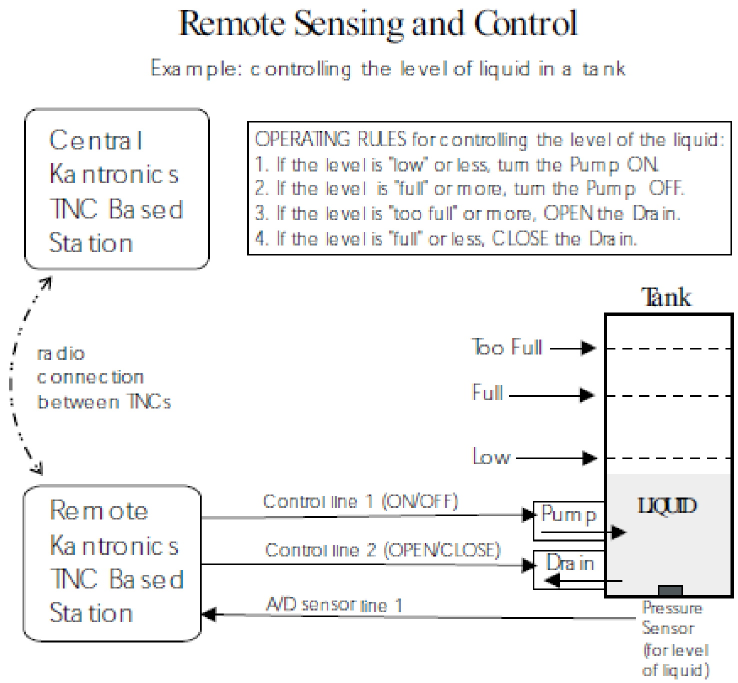 Kantonics p. 167.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and

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	the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
6. The system of claim 5, wherein the at least one gateway is permanently connected to the WAN.	The above contentions for claim 5 are hereby incorporated by reference.

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	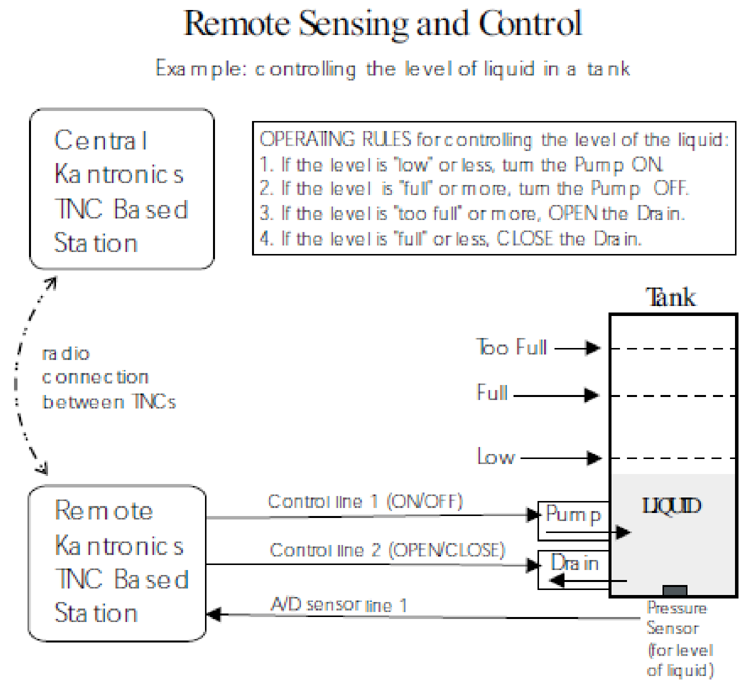 Kantonics p. 167.
8. The system of claim 5, wherein the gateway translates the encoded electrical signal, the transmitter identification and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 5 are hereby incorporated by reference. "**KISS Mode** Amateur packet radio communications can use the TCP/IP suite of protocols instead of AX.25 by switching to KISS mode and running software that supports the KISS code designed by Phil Karn (see references at end of this section). The KISS protocol specifies the communication between a TNC and a host (e.g., computer). KISS Mode allows the TNC to act as a modem and packet assembler/disassembler (PAD). In KISS Mode, data-processing is shifted from the TNC to a computer running special software supporting the

	KISS code designed by Phil Karn. KISS code supports higher level protocols (i.e. TCP/IP) for sharing computer resources in a network fashion." Kantronics pages 169-170.
9. A system for controlling a remote device comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices).

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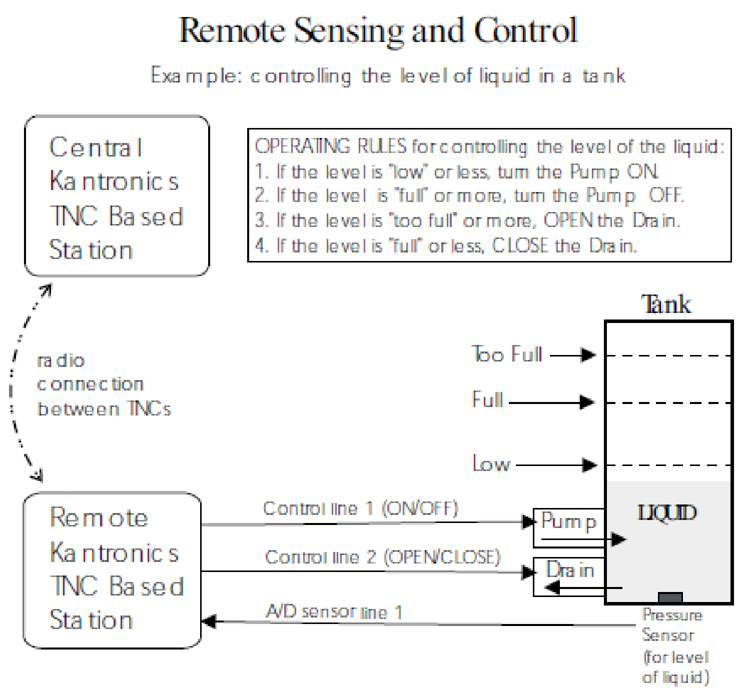
	Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

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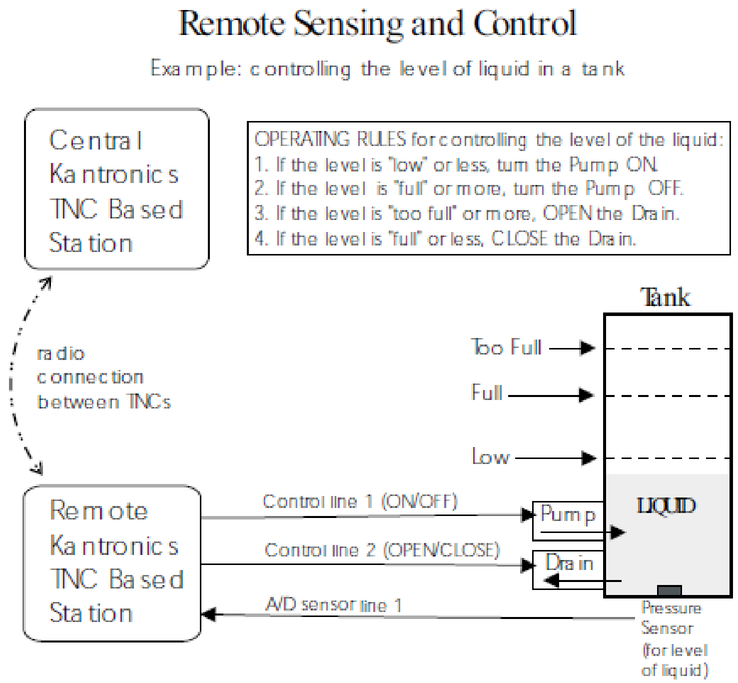
a target remote device having an actuator to be controlled;	 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

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	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in

	memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control."

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	'817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	

	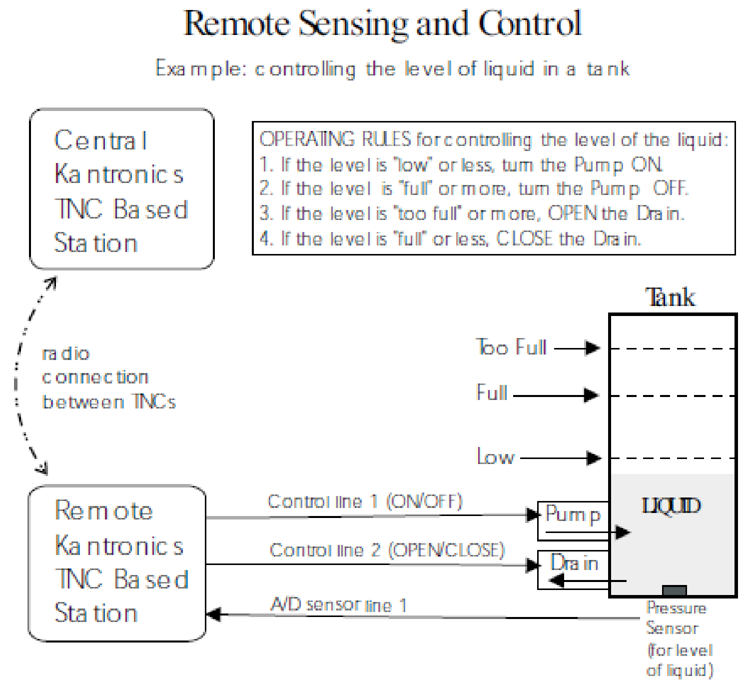 Kantronics, p. 167. "**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows:

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

	• The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
a gateway connected to the WAN configured to receive and translate the at least one control signal	"**Gateways** In Kantronics' muti-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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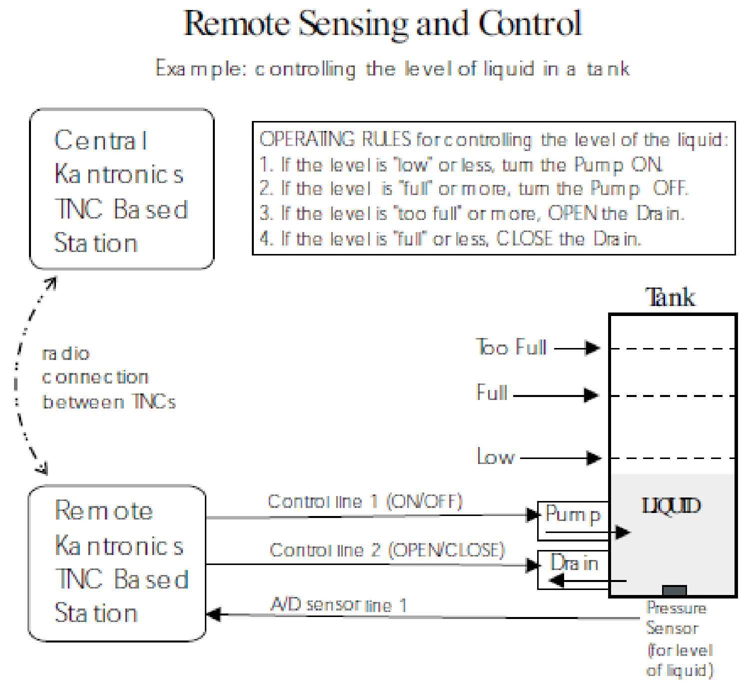
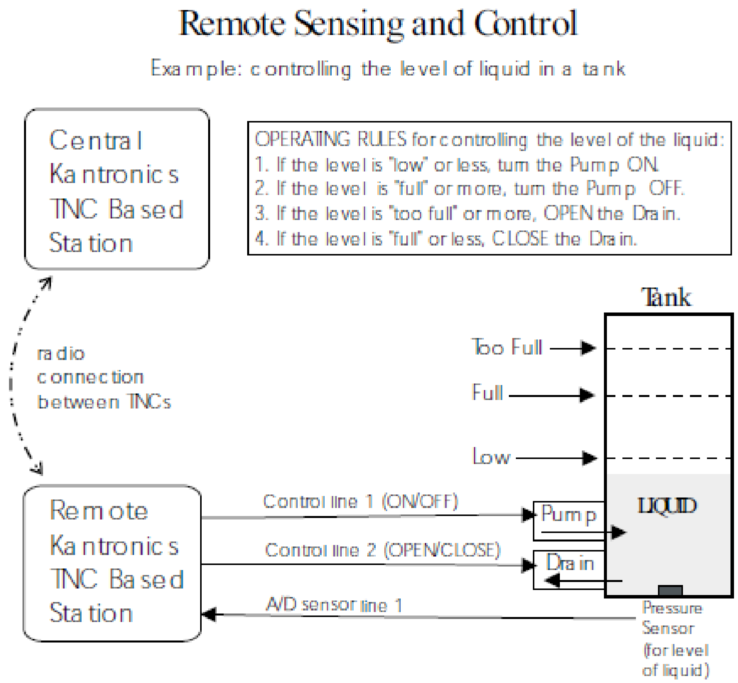
	 Kantronics p. 167.
a wireless transmitter coupled with the gateway for transmitting a wireless signal that contains the control signal;	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

	the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

a first wireless transceiver electrically interfaced with an actuator for receiving the wireless signal and further retransmitting the wireless signal to the target remote device; and	 "**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and

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	the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
logic coupled to the target remote device for extracting the control signal from the retransmitted wireless signal and imparting an action on the actuator in response to the extracted control signal.	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data

	from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of

	remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

	U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
10. The system of claim 9, further comprising:	The above contentions for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator and configured to receive the wireless signal and to retransmit the wireless signal,	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows:

wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	• **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

	"Digipeating Everything we have done so far will only be heard by those within range to hear your signal. With packet radio it is possible to go farther than that. The DIGIPEAT parameter in the TNC comes defaulted ON. This makes your TNC a possible relay station, or digital repeater—digipeater, or just digi for short." Kantronics page 105.
11. The system of claim 9, further comprising:	The above contentions for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator or a sensor and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use

	different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167. "Digipeating Everything we have done so far will only be heard by those within range to hear your signal. With packet radio it is possible to go farther than that. The DIGIPEAT parameter in the TNC comes defaulted ON. This makes your TNC a possible relay station, or digital repeater—digipeater, or just digi for short." Kantronics page 105.
12. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC.

	Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

<table>
<tr>
<td></td>
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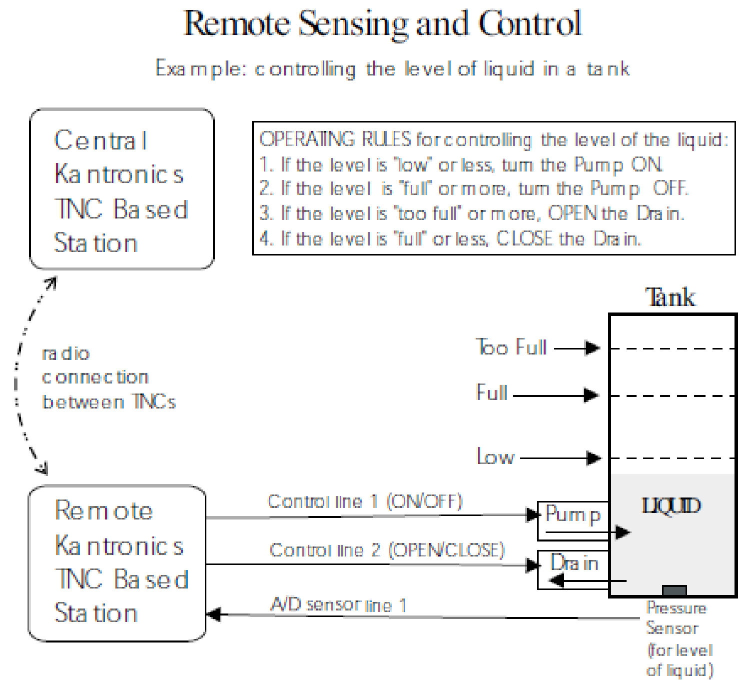
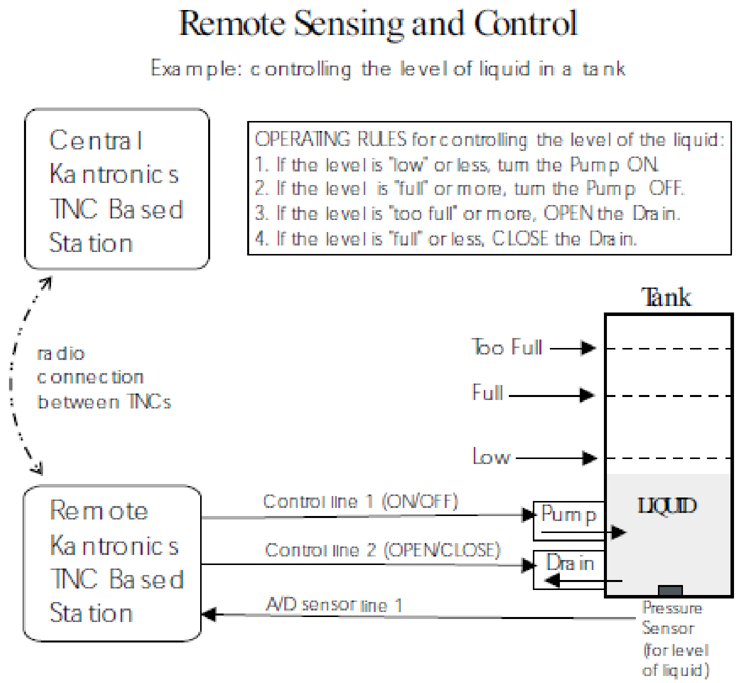


Kantronics, p. 167.
</td>
</tr>
<tr>
<td>a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);</td>
<td>"The following diagram illustrates the use of two Kantronics TNC/radio stations for remote controlling and sensing. These operations could be carried out manually or via a terminal program running in the computer in the central TNC station.</td>
</tr>
</table>

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

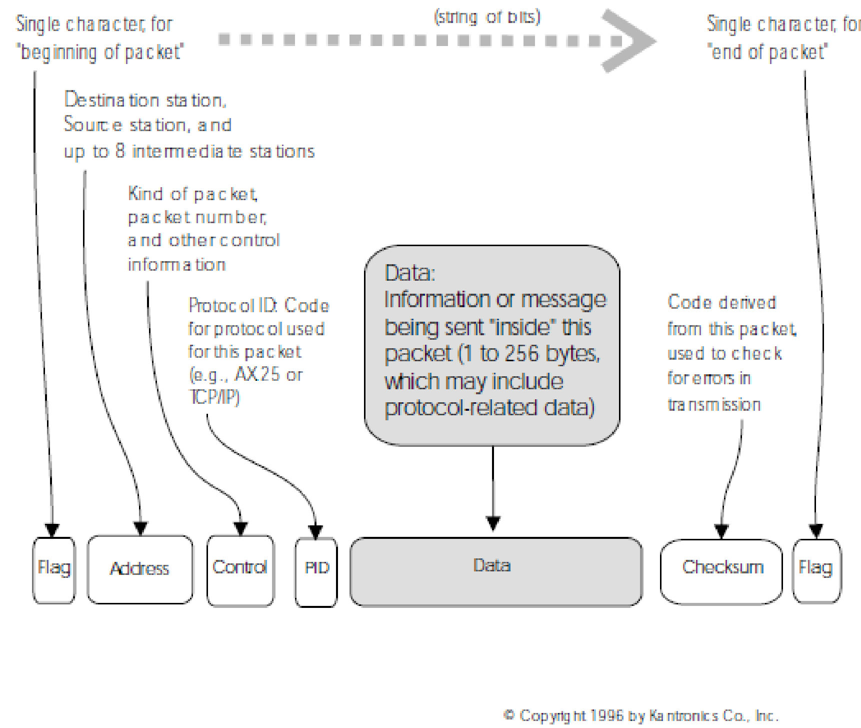
	 Kantronics, p. 167. "**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your

	antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
a plurality of non-earth orbiting transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

	"Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

<table>
<tr><td></td><td>

The Organization of an AX.25 Connected Information Packet

Kantronics, p. 27.</td></tr>
<tr><td>at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the</td><td>"Gateways
In Kantronics' muti-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available.
Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.</td></tr>
</table>

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

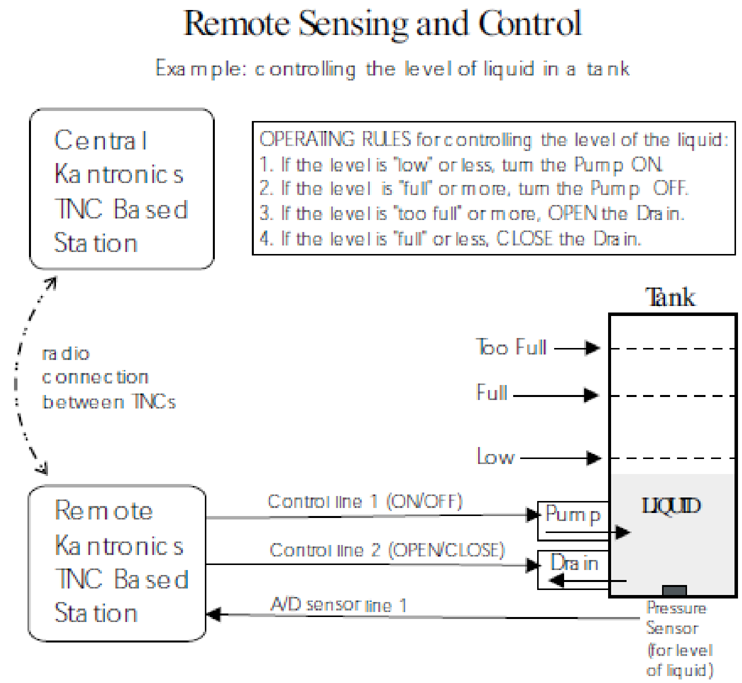
translated information to the computer over the WAN.	 Kantonics p. 167.
14. The system as defined claim 12, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 12 are hereby incorporated by reference. "**KISS Mode** Amateur packet radio communications can use the TCP/IP suite of protocols instead of AX.25 by switching to KISS mode and running software that supports the KISS code designed by Phil Karn (see references at end of this section). The KISS protocol specifies the communication between a TNC and a host (e.g., computer). KISS Mode allows the TNC to act as a modem and packet assembler/disassembler (PAD). In KISS Mode, data-processing is shifted from the TNC to a computer running special software supporting the

Exhibit P10 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Kantronics

	KISS code designed by Phil Karn. KISS code supports higher level protocols (i.e. TCP/IP) for sharing computer resources in a network fashion." Kantronics pages 169-170.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Kantronics

The '692 Patent – Claim	Kantronics KPC-3 – Users Guide, 1997 ("Kantronics")
1. A system for remote data collection, assembly, and storage comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used

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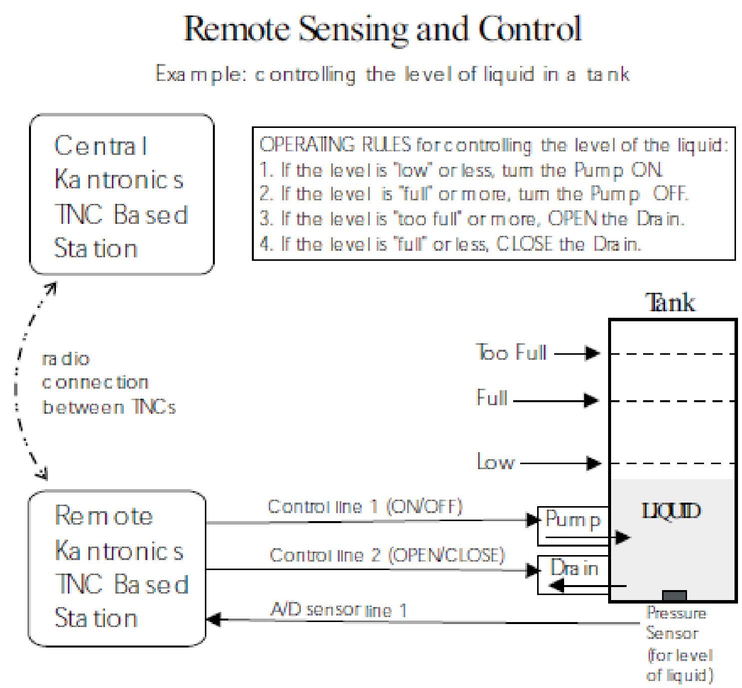
with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference.” Kantronics, pp. 166, 167.



Kantronics, p. 167.
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<td>a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated</td>
<td>“The following diagram illustrates the use of two Kantronics TNC/radio stations for remote controlling and sensing. These operations could be carried out manually or via a terminal program running in the computer in the central TNC station.</td>
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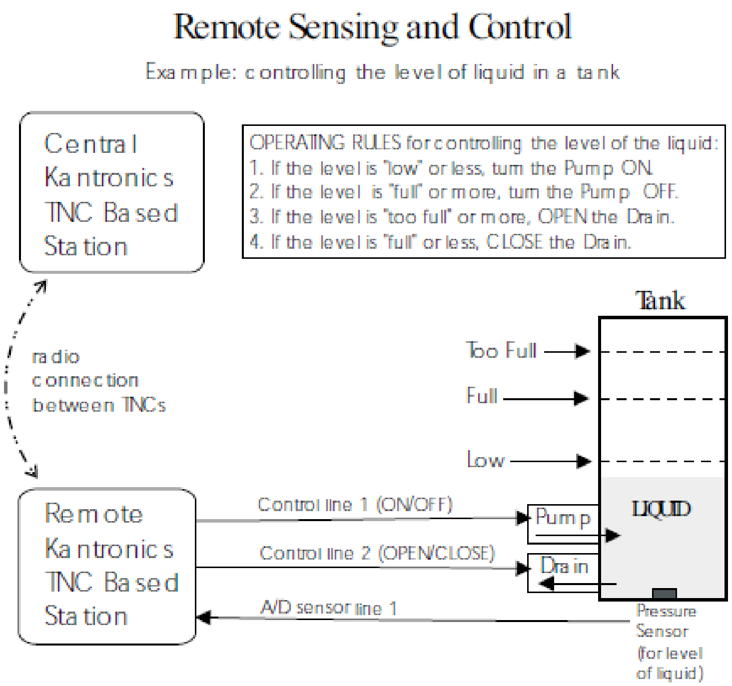
with a wide area network (WAN);	 Kantronics, p. 167. "**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows:

	• The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
at least one wireless transmitter configured to transmit select information and transmitter identification information;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.

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	"Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	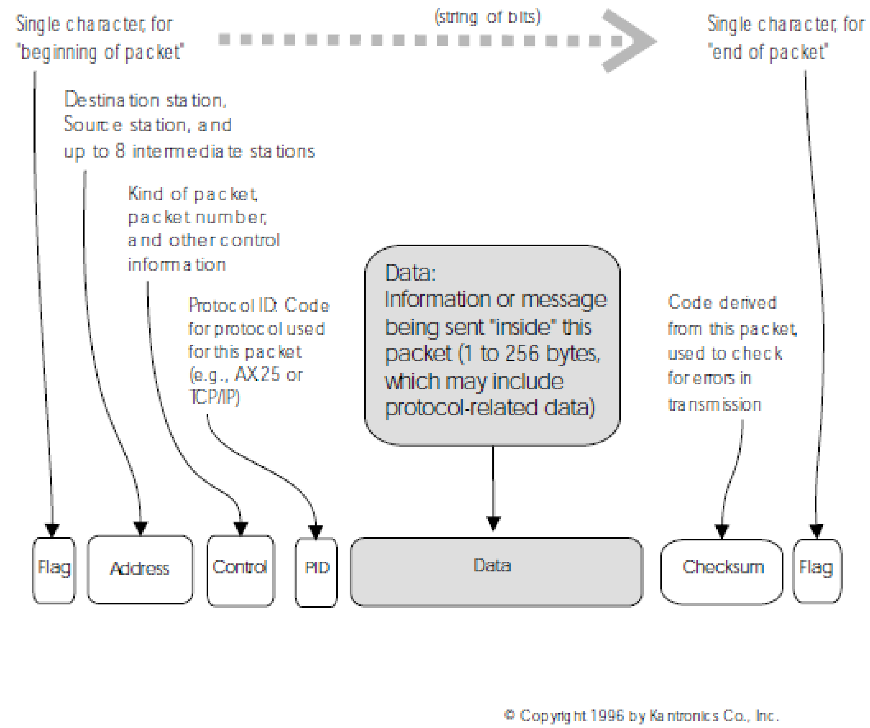 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically at defined locations configured to receive select information transmitted from at least one nearby wireless transmitter and further configured to transmit the select information, the transmitter identification information and transceiver	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC.

identification information; and	• The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	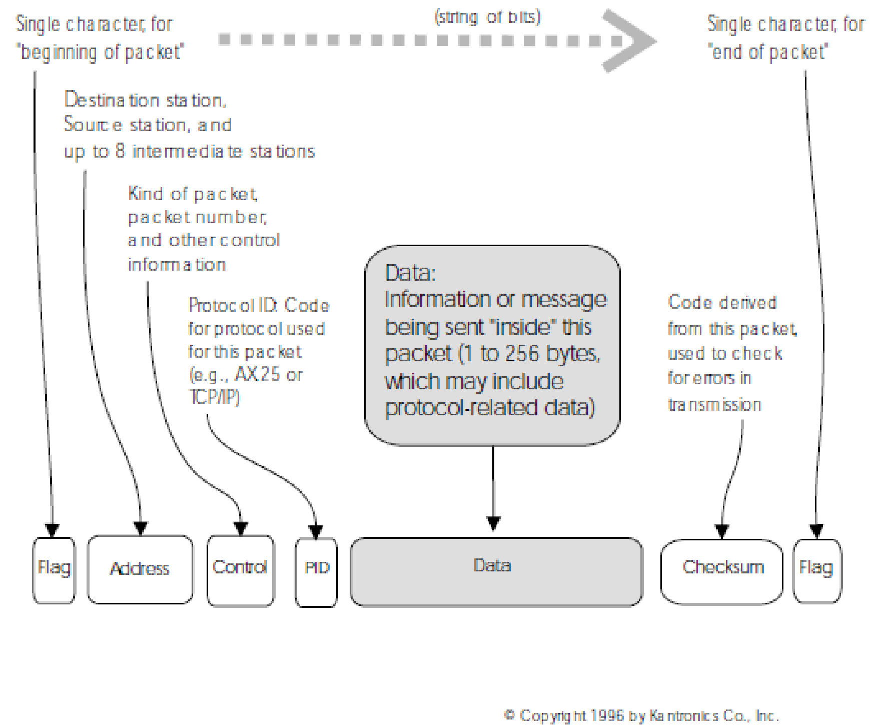 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
at least one gateway connected to the wide area network configured to receive and translate the select information, the transmitter identification information, and transceiver identification information, said gateway further configured to farther transmit the translated information to the computer over the WAN.	"**Gateways** In Kantronics' muti-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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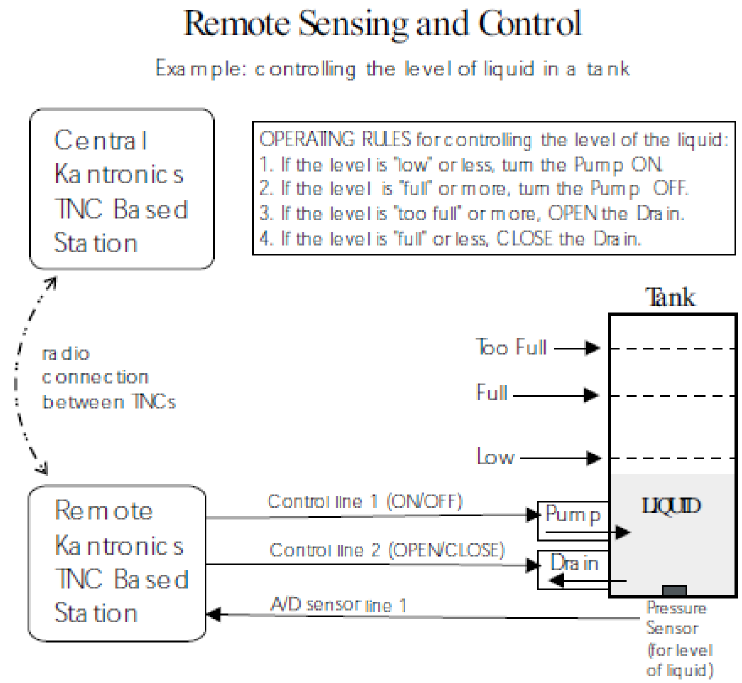

Kantonics p. 167.

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<td>3. The system as defined in claim 1, wherein each wireless transmitter is configured to transmit a relatively low-power, radio-frequency (RF) signal.</td>
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The above contentions for claim 1 are hereby incorporated by reference.

"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166.

"The three parts of a packet radio station work together as follows:

- The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC.

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	• The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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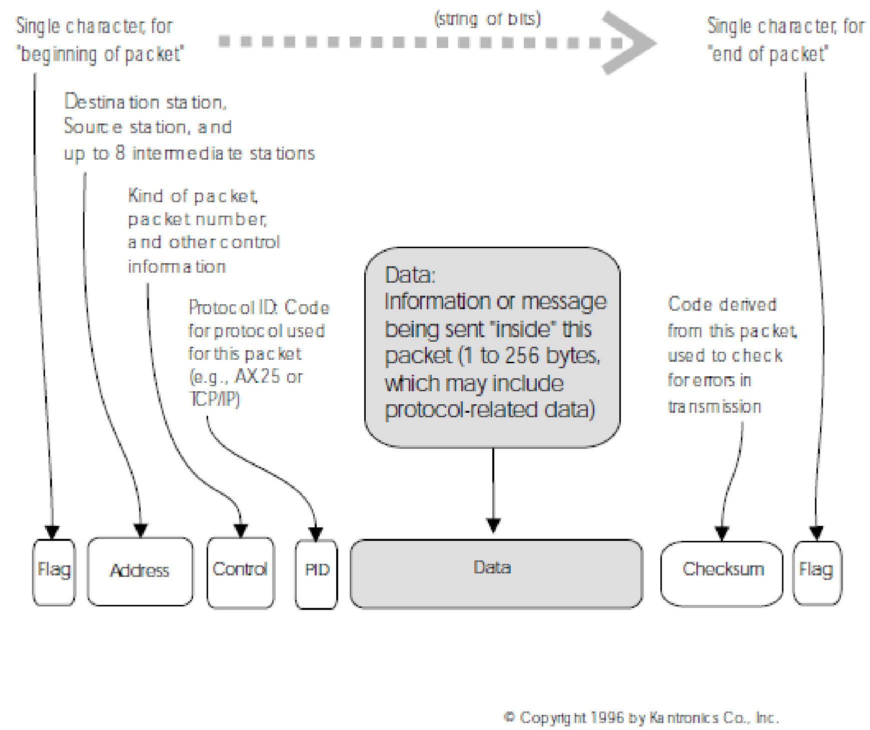
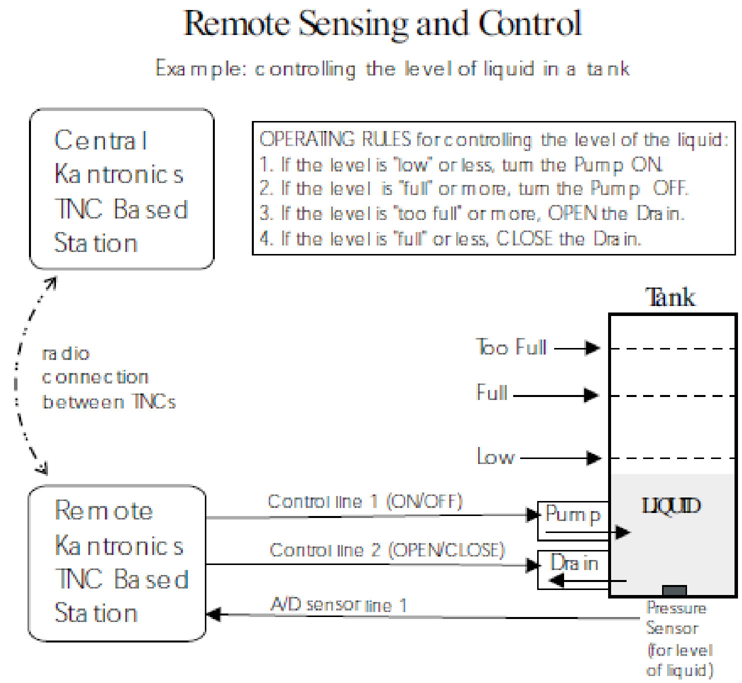
	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
4. The system as defined in claim 1, wherein each wireless transmitter is integrated with a sensor.	The above contentions for claim 1 are hereby incorporated by reference. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based

	radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

	 Kantronics, p. 167.
5. The system as defined in claim 1, wherein the RF signal transmitted by the receiver contains a concatenation of information comprising select information and transmitter identification information from the originating transmitter and transceiver identification information for each transceiver that receives and repeats the RF signal.	The above contentions for claim 1 are hereby incorporated by reference. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25

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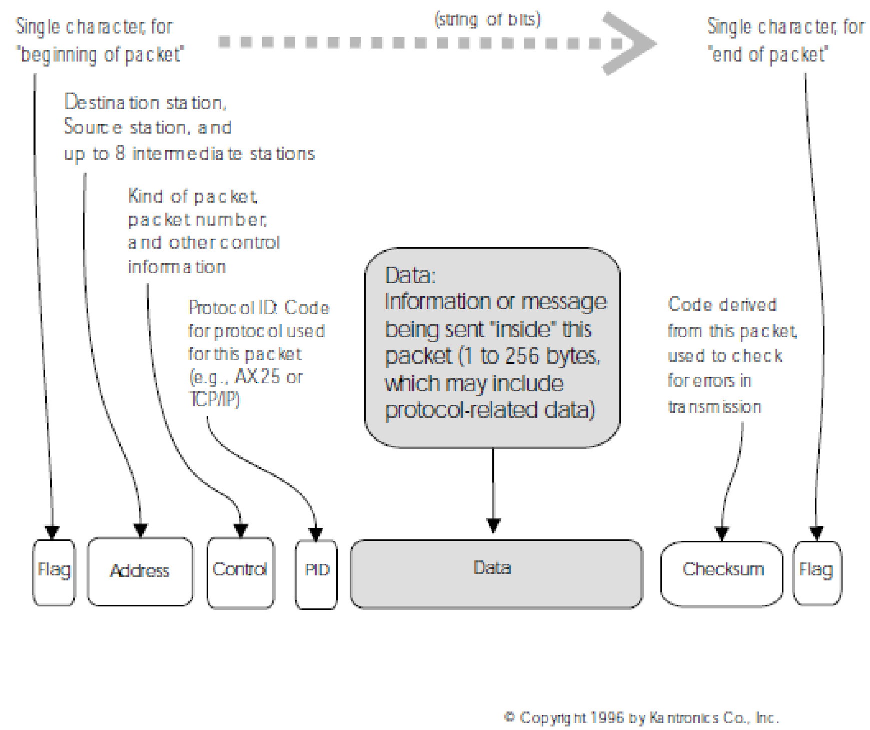
	protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.  The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed

	explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
6. The system as defined in claim 5, wherein the at least one transmitter is replaced by a transceiver, the transceiver further integrated with an actuator.	The above contentions for claim 5 are hereby incorporated by reference. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference.

	+ **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	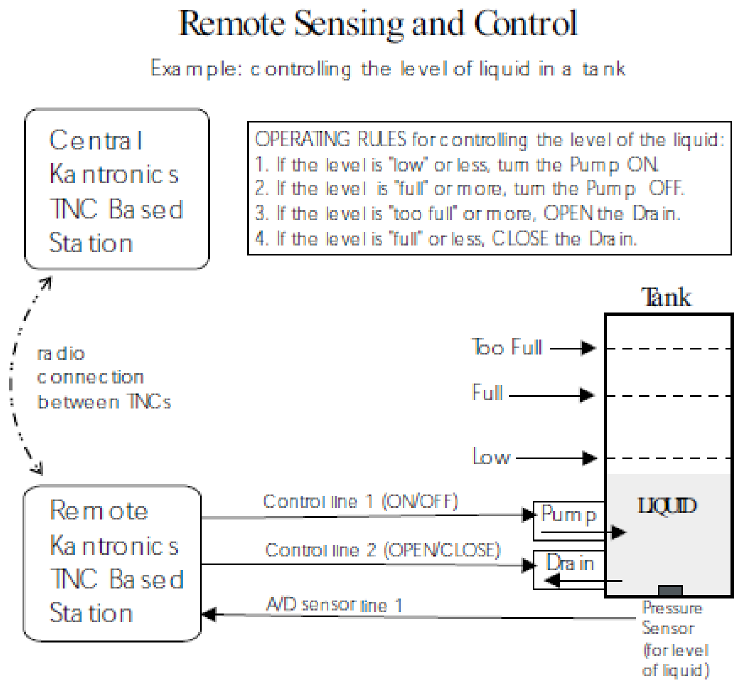 Kantronics, p. 167.
7. The system as defined in claim 6, wherein the transceivers are configured to communicate with the gateway via a RF signal.	The above contentions for claim 6 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC.

	• The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	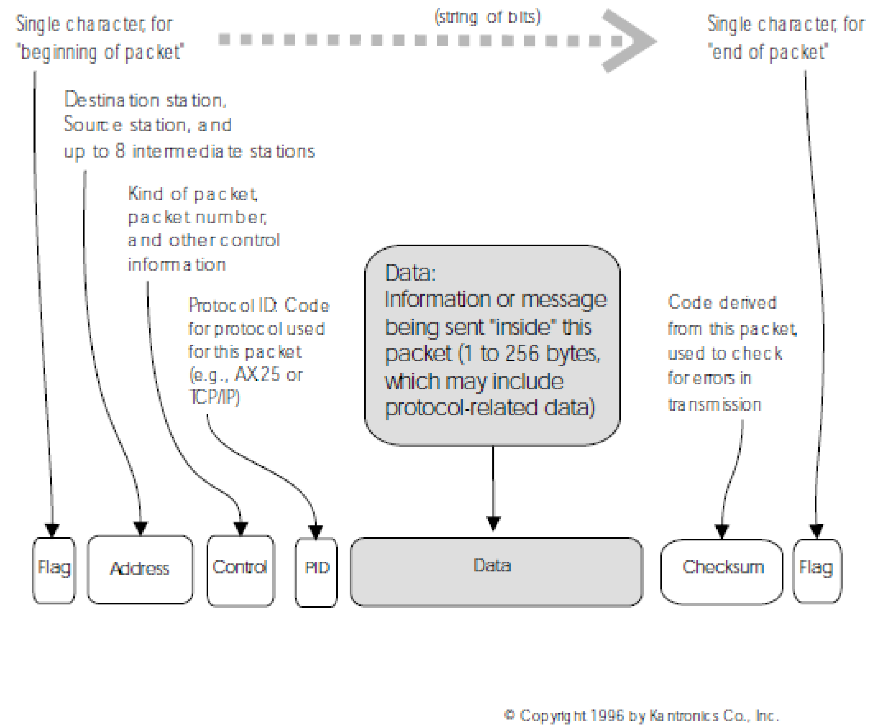 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
8. The system as defined in claim 7, wherein the computer is further configured to respond to received select information by communicating a control signal to at least one transceiver, wherein the actuator integrated with the transceiver is responsive to the control signal.	The above contentions for claim 7 are hereby incorporated by reference. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based

	radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	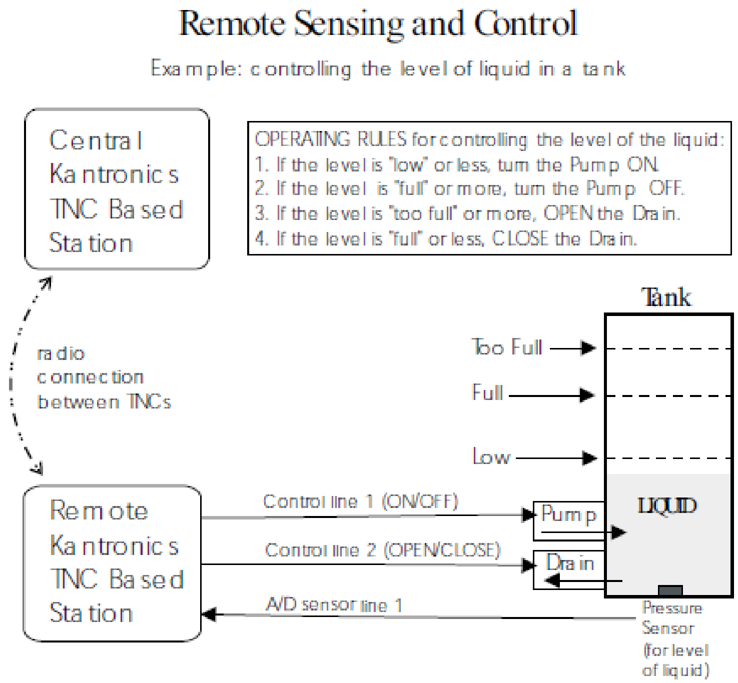 Kantronics, p. 167.
11. The system as defined in claim 1, wherein the gateway includes one selected from the group consisting of:	The above contentions for claim 1 are hereby incorporated by reference.
a modem for establishing a dial-up connection with a remote computer; a network card for communicating across a local area network; a network card for communicating across the WAN, a DSL modem; and an ISDN card to permit backup access to the computer.	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	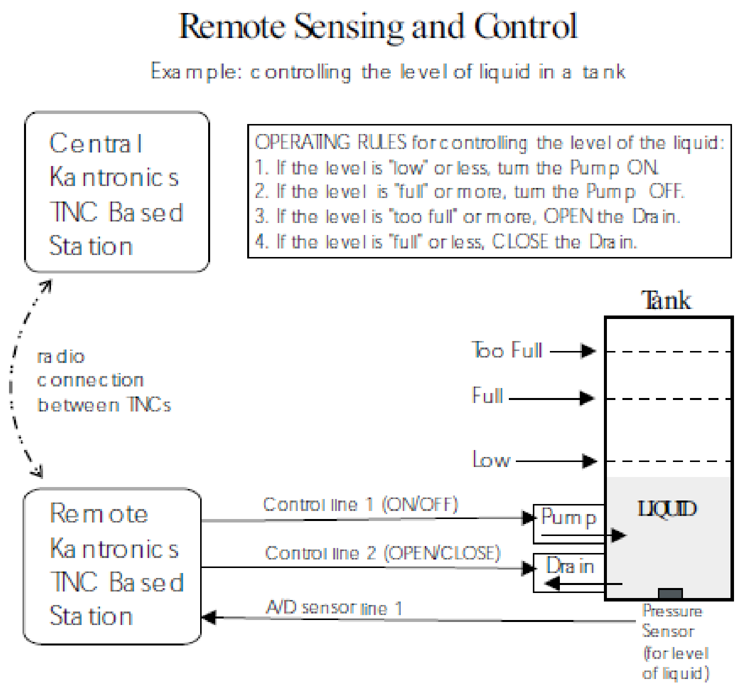 Kantonics p. 167.
12. The system as defined in claim 1, wherein the gateway translates the select information, the transmitter identification, and the transceiver identification information to TCP/IP for communication over the WAN.	The above contentions for claim 1 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

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	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

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	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

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	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
13. The system as defined in claim 1, wherein the WAN is the Internet.	The above contentions for claim 1 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

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	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 3. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 4. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway

	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

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	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
14. The system as defined in claim 1, wherein the WAN is a dedicated Intranet.	The above contentions for claim 1 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example:

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	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 5. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 6. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250.

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	"Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed

	over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
24. A method for controlling a system comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

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	• **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	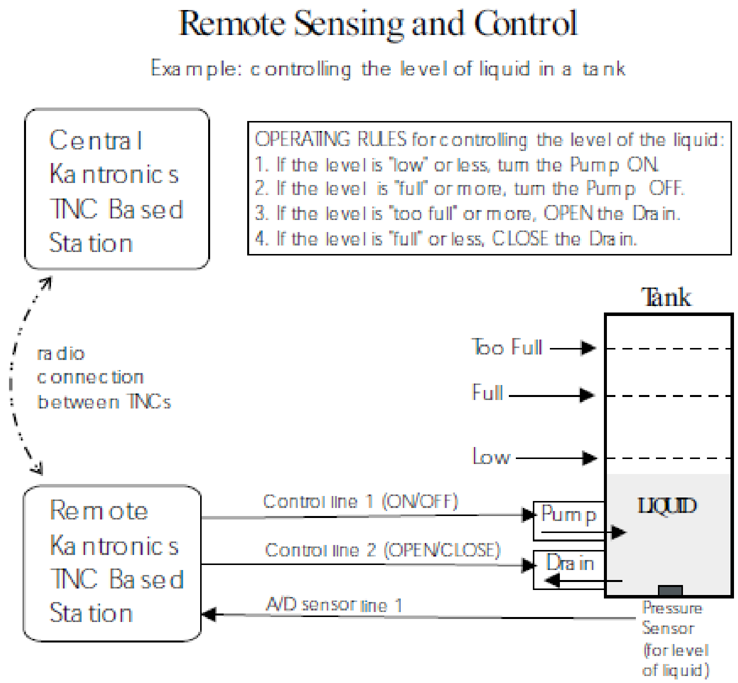 Kantronics, p. 167.
remotely collecting data from at least one sensor;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

	• **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	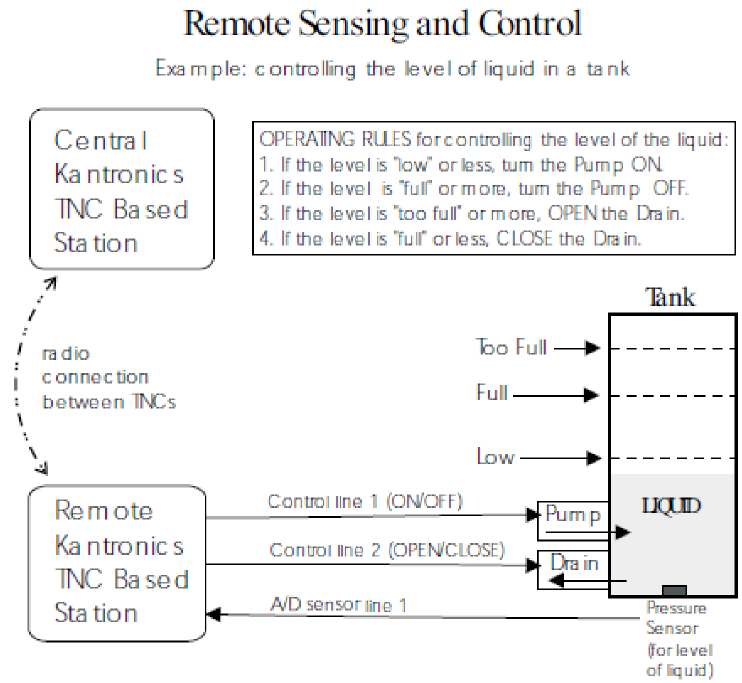 Kantronics, p. 167.
processing the data into a radio-frequency (RF) signal;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC.

	Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	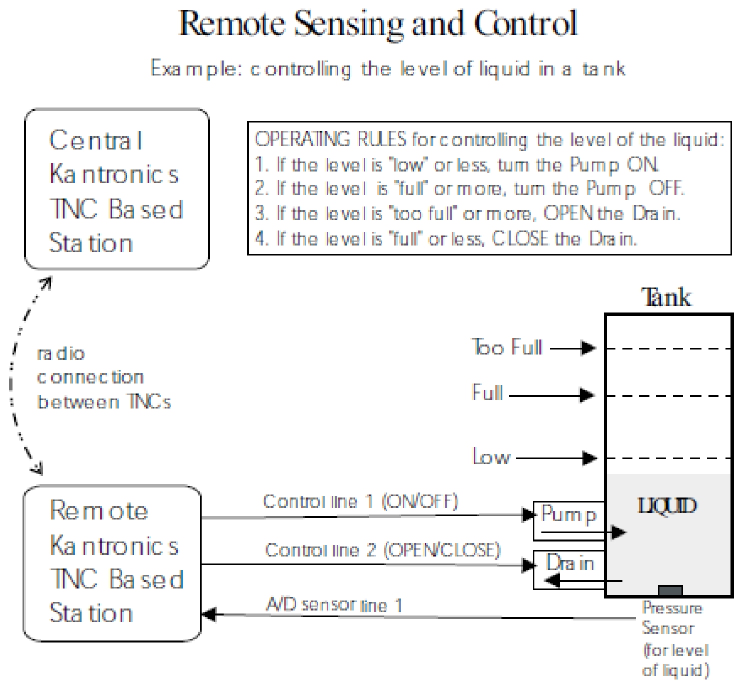 Kantronics, p. 167. "**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows:

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	• The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
transmitting the RF signal, via a relatively low-power transceiver, to a gateway;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	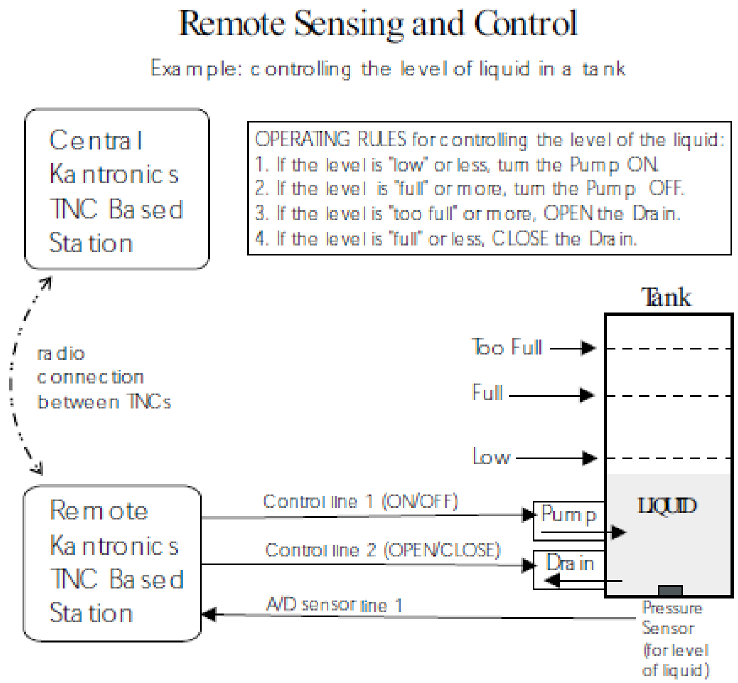 Kantonics p. 167.
translating the data in the RF signal into a network transfer protocol;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	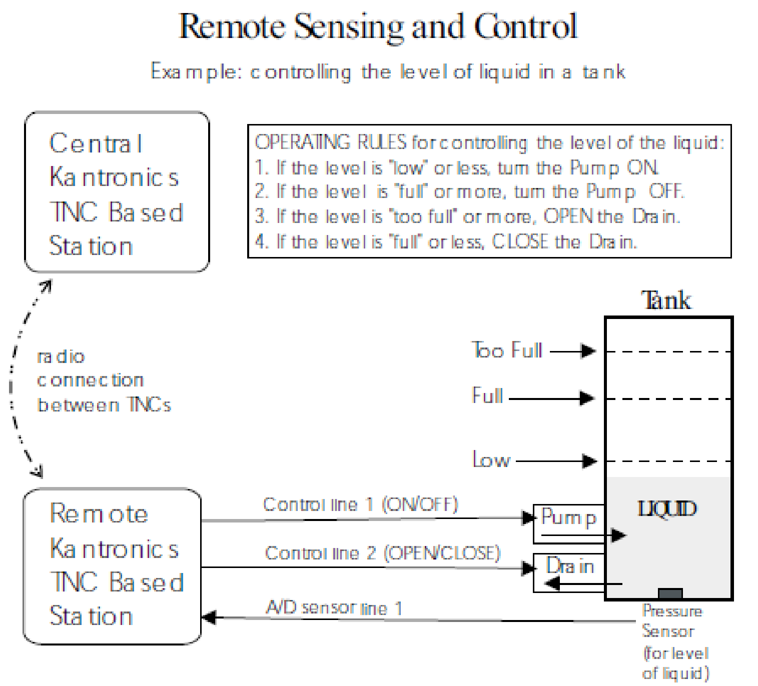 Kantonics p. 167.
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by the at least one sensor by generating an appropriate control signal;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	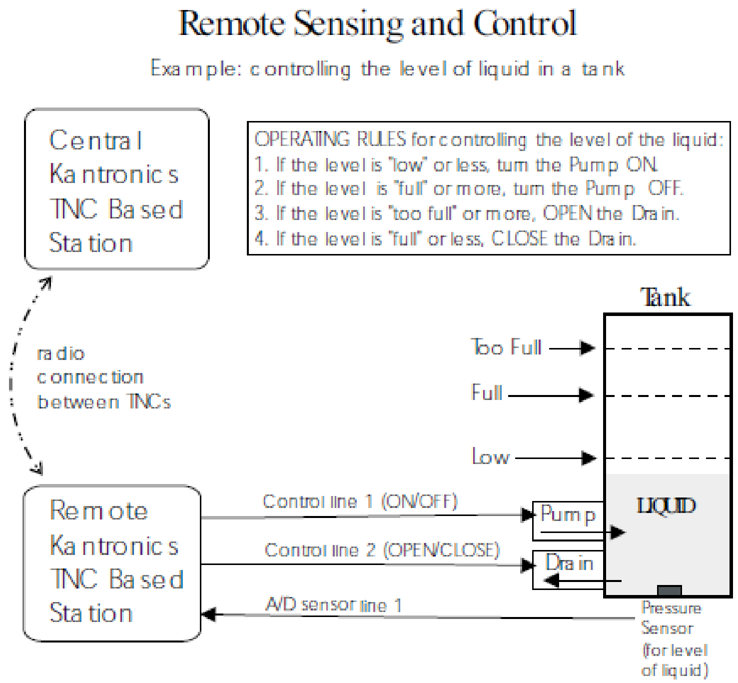 Kantonics p. 167.
sending the control signal via the network to the gateway,	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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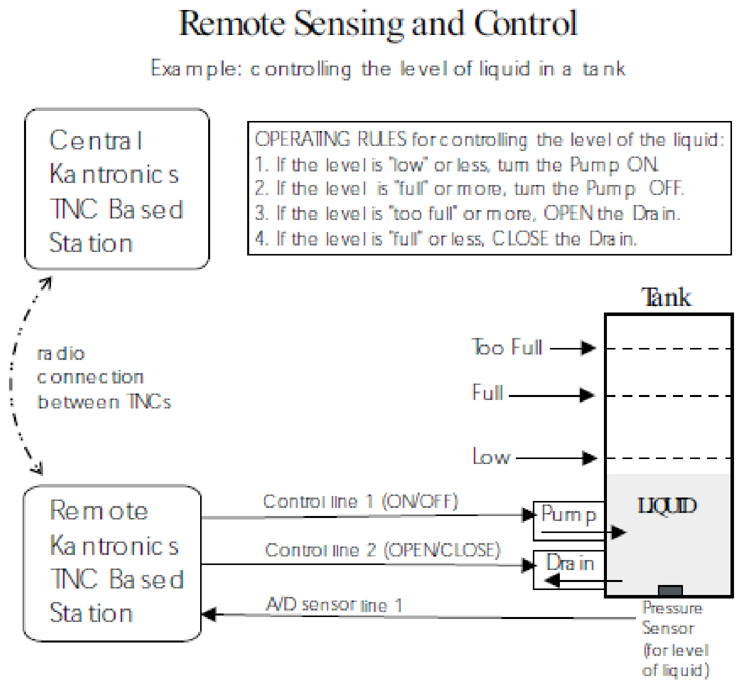
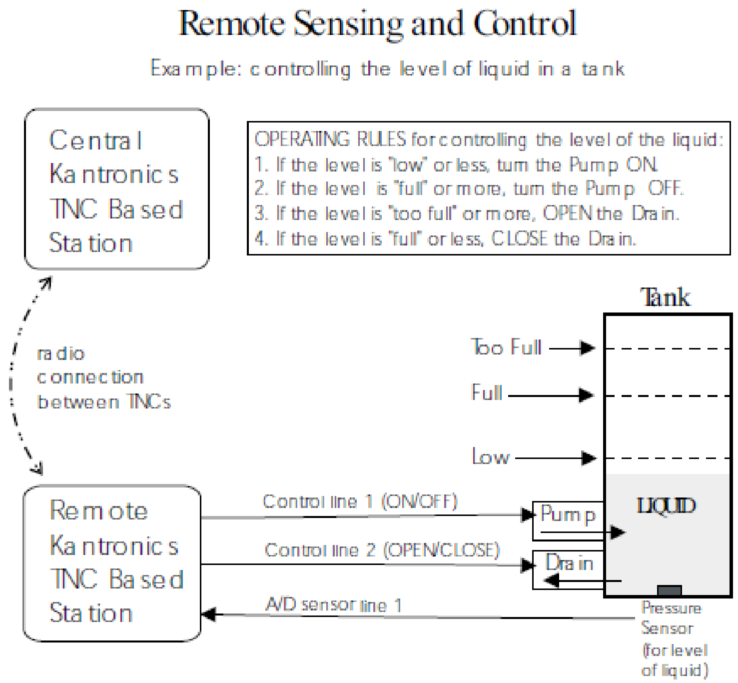
	 Kantonics p. 167.
translating the control signal from a network transfer protocol into an RF control signal;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

	 Kantonics p. 167.
transmitting the RF control signal;	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and

	the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19. "**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	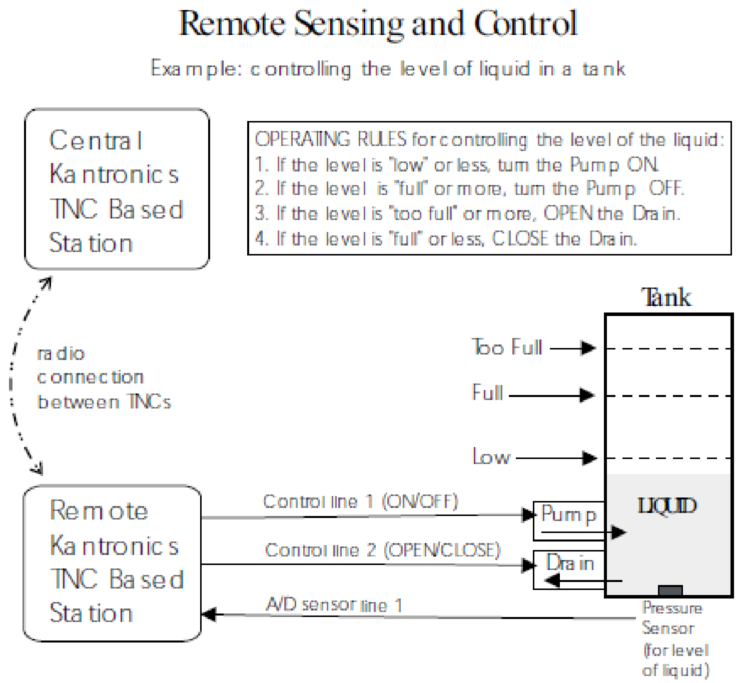 Kantonics p. 167.
receiving the RF control signal;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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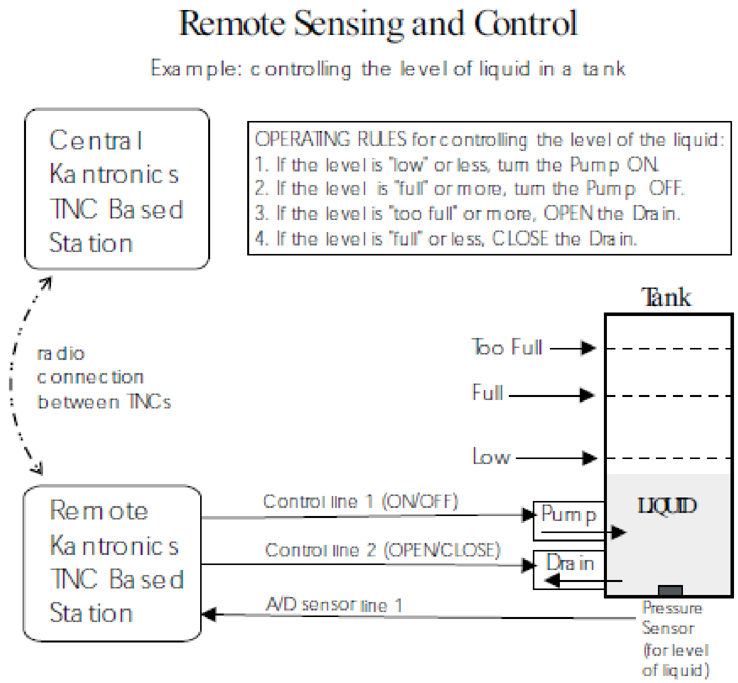
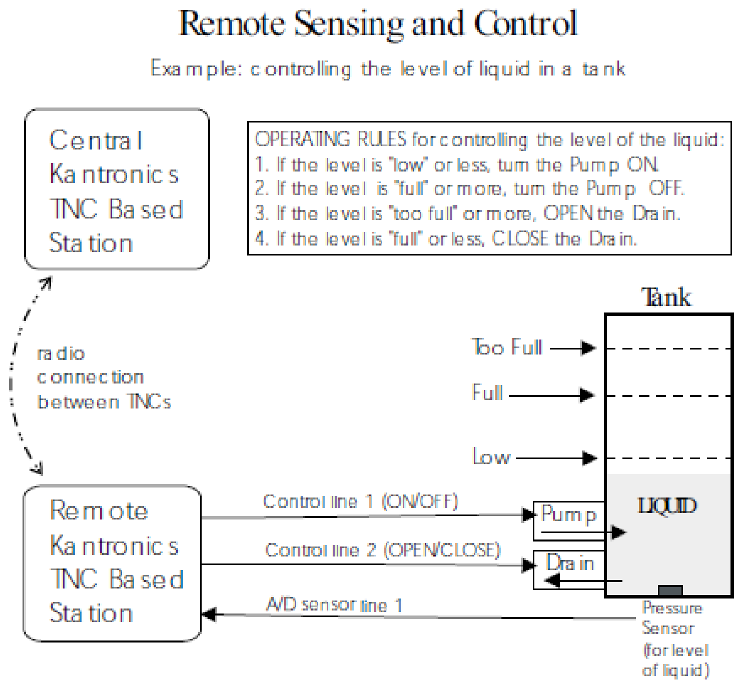
	 Kantonics p. 167.
translating the received RF control signal into an analog signal; and	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

	 Kantonics p. 167.
applying the analog signal to an actuator to effect the desired system response.	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	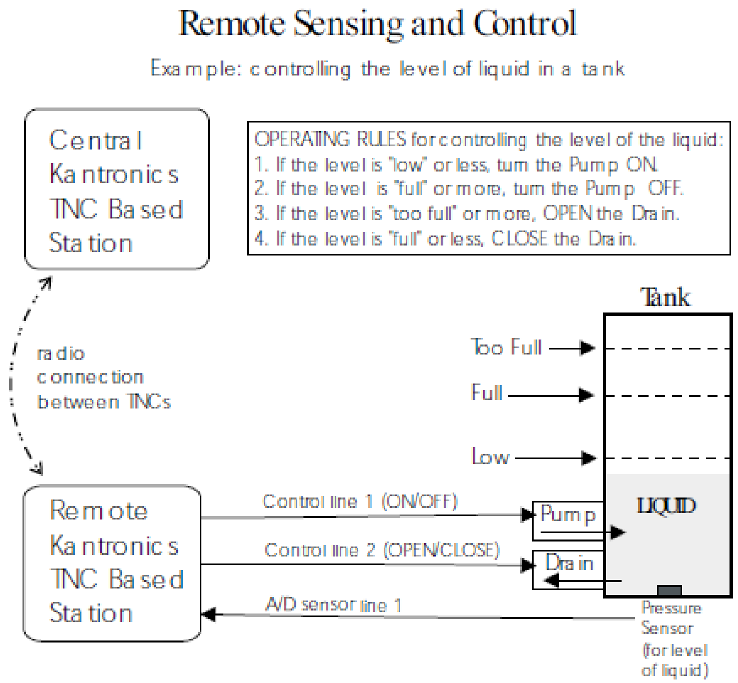 Kantonics p. 167.
25. The method of claim 24, wherein the RF signal contains a concatenation of information comprising encoded data information and transmitter identification information from an originating transmitter.	The above contentions for claim 24 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC.

	• The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	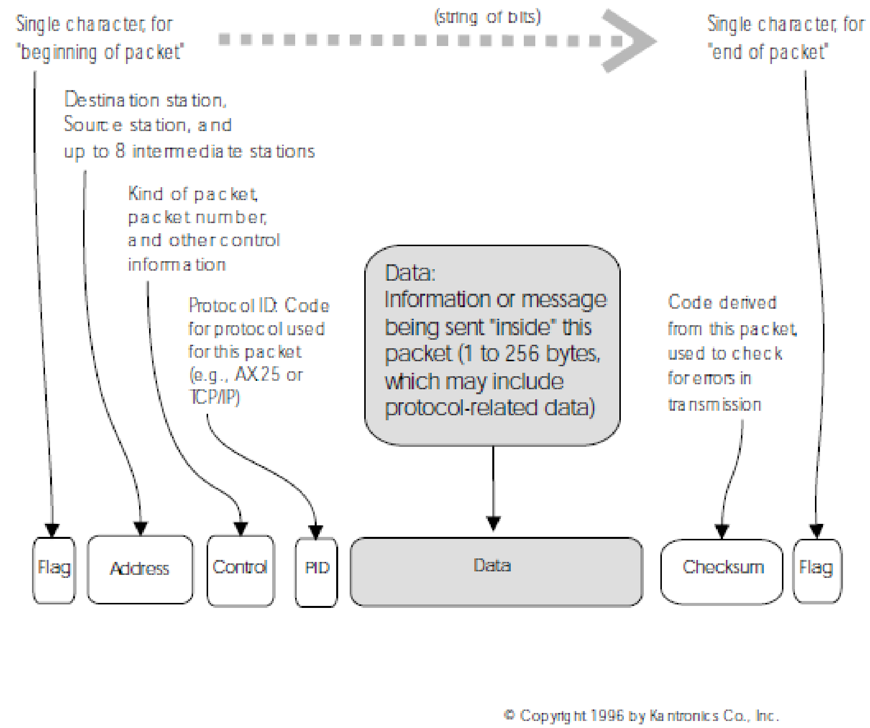 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header.

	Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
26. The method of claim 25, wherein the step of transmitting the RF signal is further performed by at least one transceiver, wherein the transceiver is configured to concatenate a transceiver identification code to the RF signal.	The above contentions for claim 25 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25

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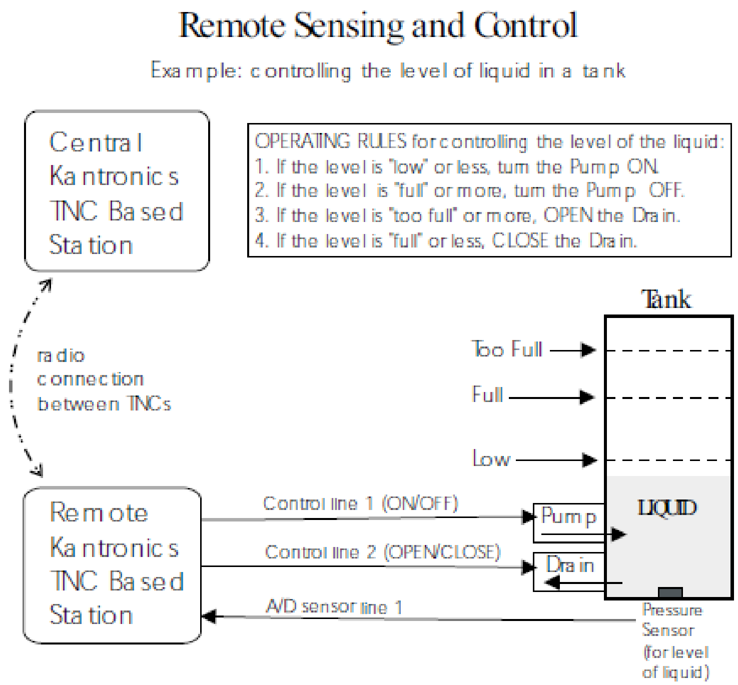
	protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.  Kantonics p. 167.
27. The method of claim 25, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 25 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166.

	"The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	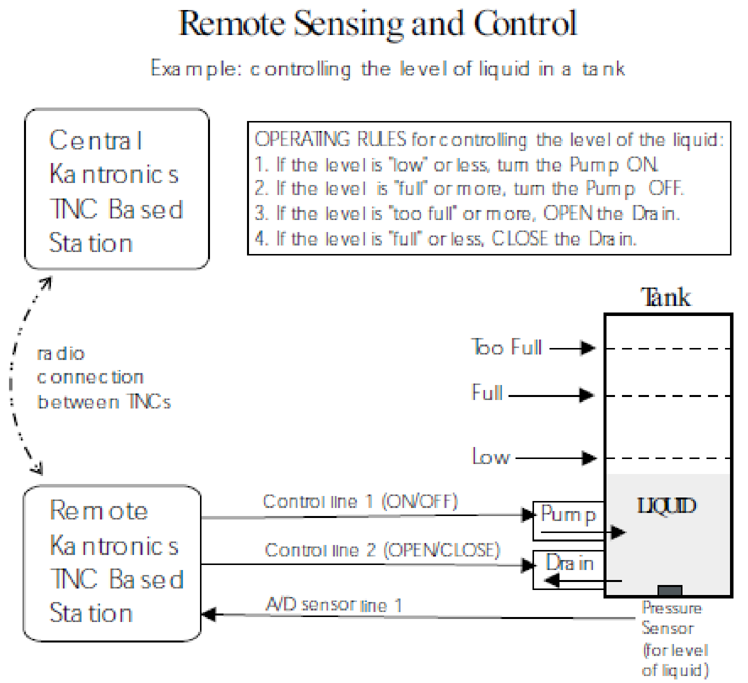 Kantonics p. 167.
28. The method of claim 25, wherein the steps of translating and applying the received RF control signal are performed only by an identified transceiver electrically integrated with an actuator.	The above contentions for claim 25 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC.

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	• The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	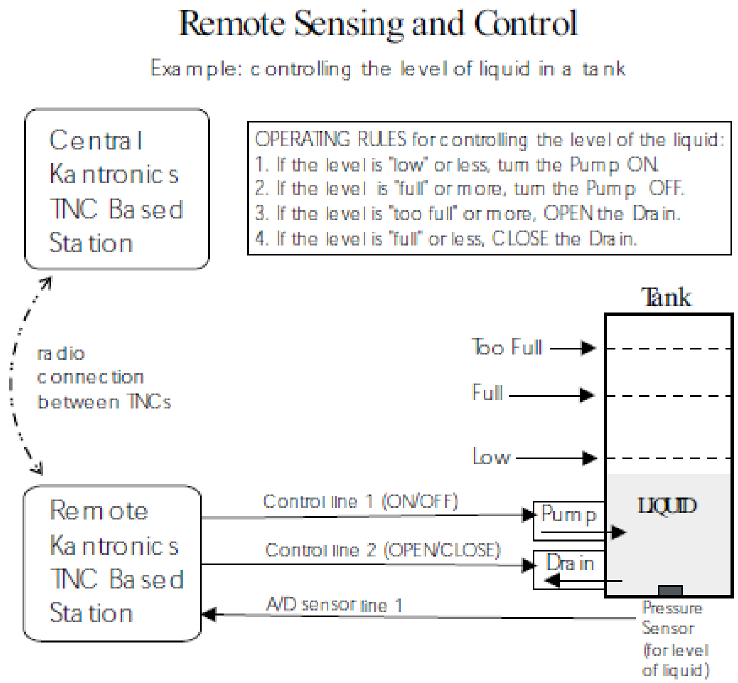 Kantonics p. 167.
29. The method of claim 25, wherein the network is the Internet.	The above contentions for claim 25 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet

	gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 7. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 8. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical

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	to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located

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	anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
30. The method of claim 25, wherein the network is an Intranet.	The above contentions for claim 25 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 9. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 10. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
31. The method of claim 25, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 25 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 11. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 12. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway

	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
32. A system for monitoring remote devices comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

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	• **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	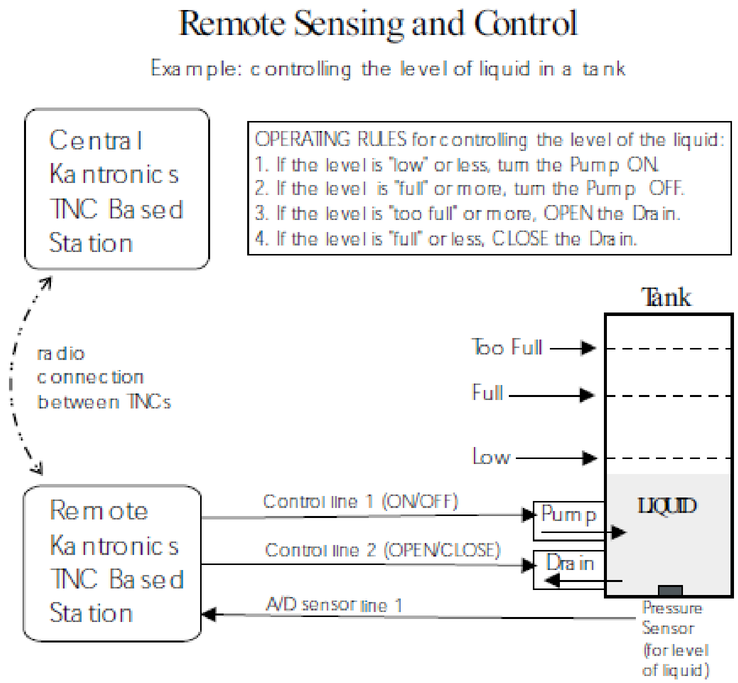 Kantronics, p. 167.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer.

	• The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage

	presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	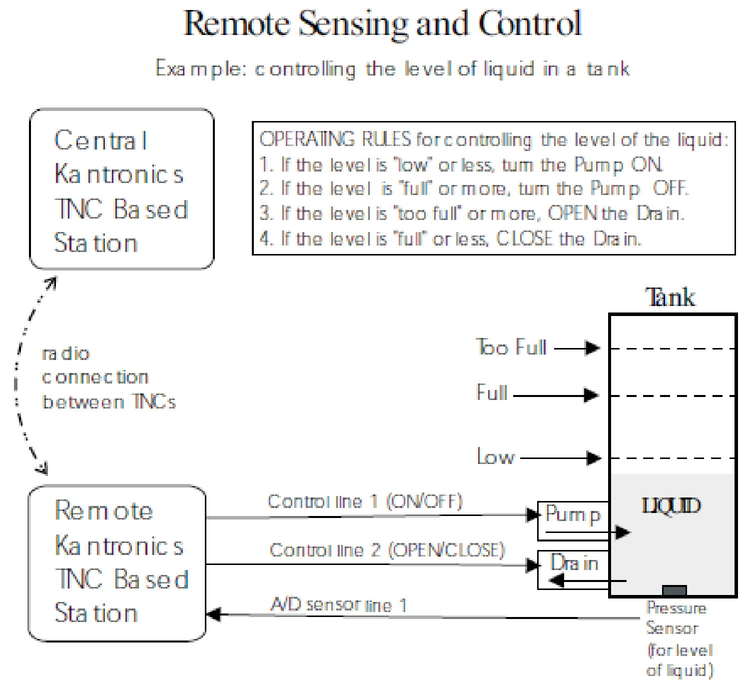 Kantronics, p. 167.
at least one wireless transmitter configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a low-power radio-frequency (RF) signal;	"The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer.

	• The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage

	presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	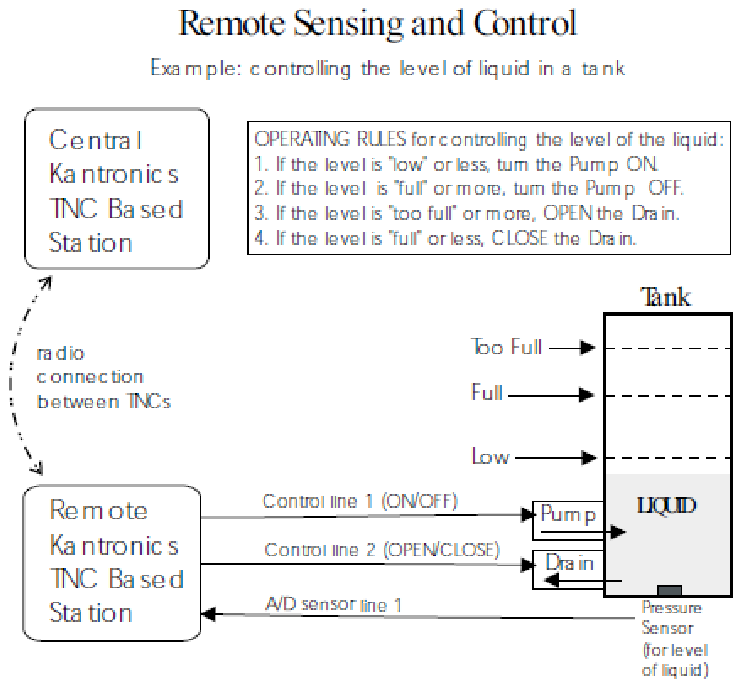 Kantronics, p. 167.
at least one gateway connected a wide area network (WAN) configured to receive and translate the RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	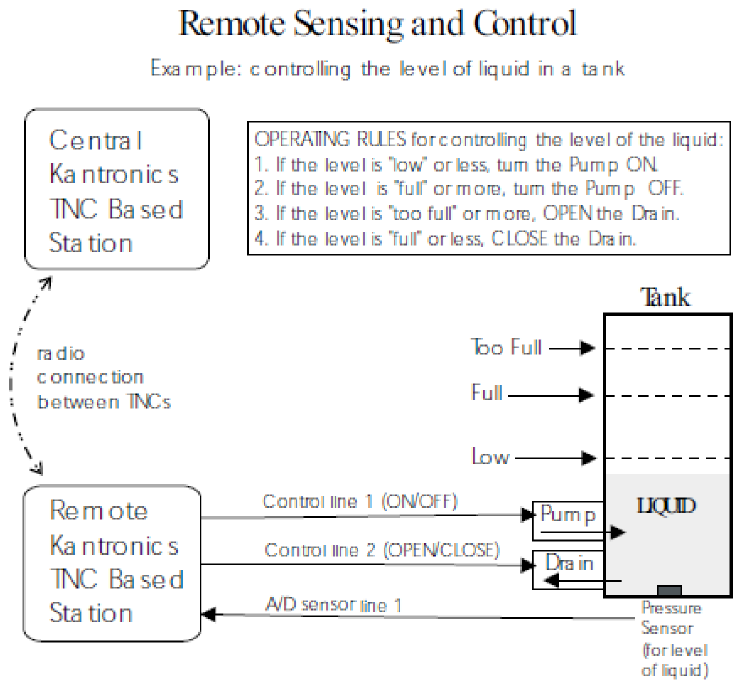 Kantonics p. 167.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	"The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox

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	(i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an

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	approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	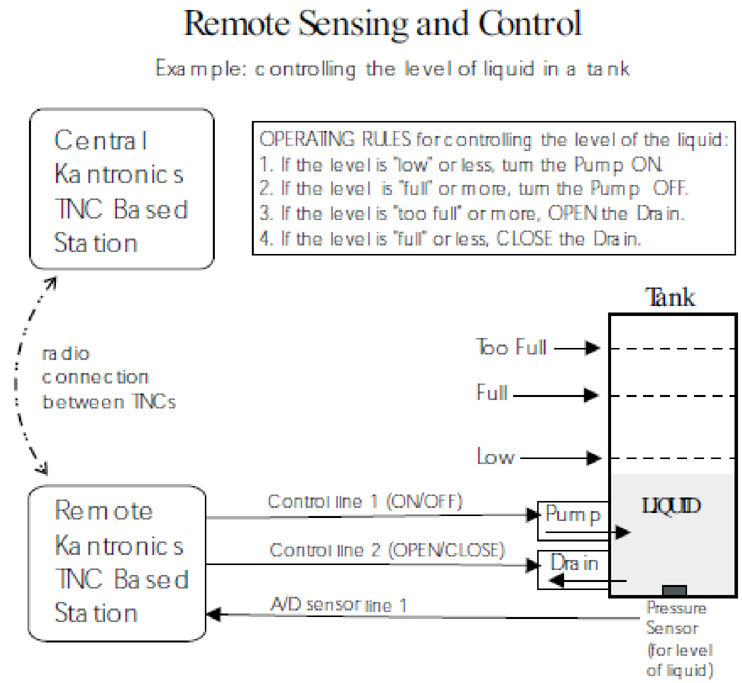 Kantronics, p. 167.
34. The system defined in claim 32, wherein each wireless transmitter is configured to transmit a relatively low-power radio-frequency (RF) signal.	"The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer.

	• The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage

	presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	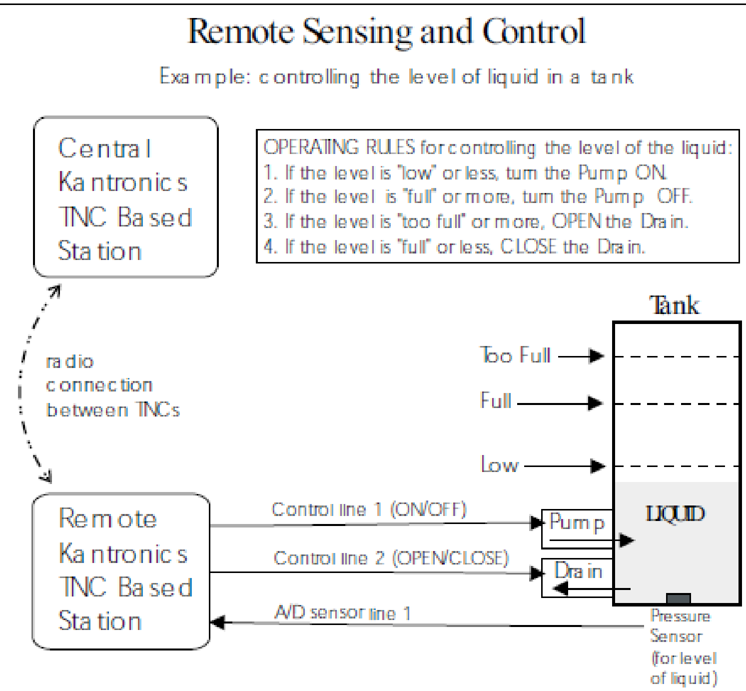 Kantronics, p. 167.
36. The system defined in claim 32, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communicating over the WAN.	The above contentions for claim 32 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

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	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 13. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 14. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

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	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
37. The system defined in claim 32, wherein the WAN in the Internet.	The above contentions for claim 32 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 15. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 16. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

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	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

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	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
38. The system defined in claim 32, wherein the WAN is a dedicated Intranet.	The above contentions for claim 32 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

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	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 17. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 18. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
42. A system for controlling remote devices comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report

	the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	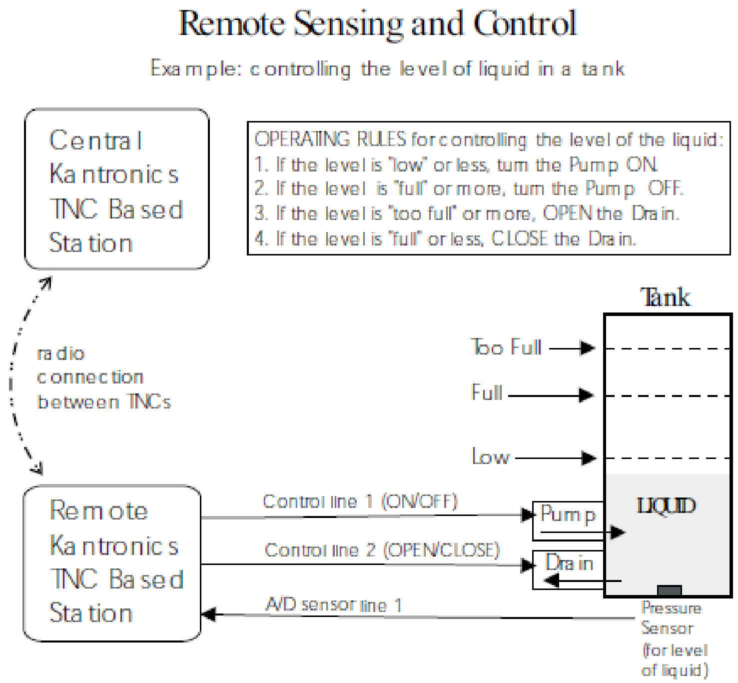 Kantronics, p. 167.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	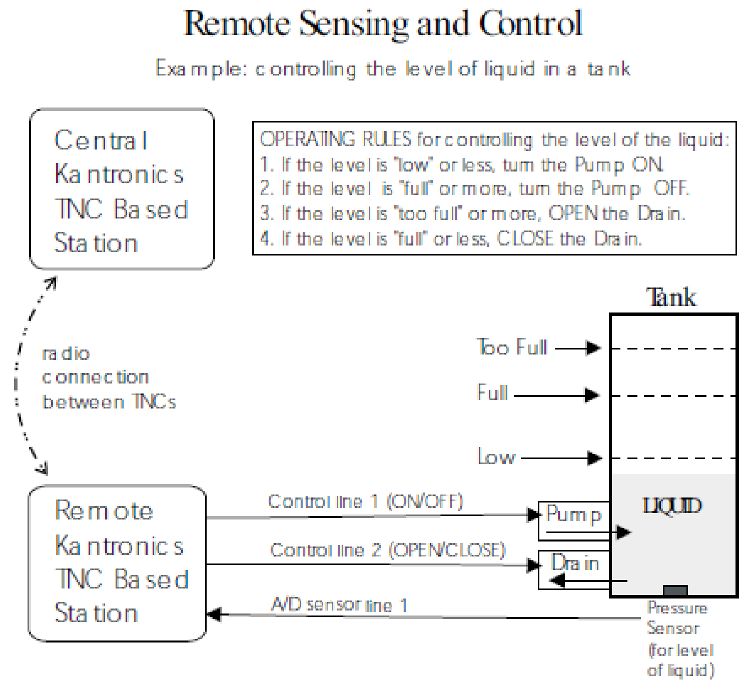 Kantonics p. 167.
at least one gateway connected to the WAN configured to receive and translate the at least one control signal; said gateway further configured to transmit a radio-frequency (RF) signal containing the control signal and destination information;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	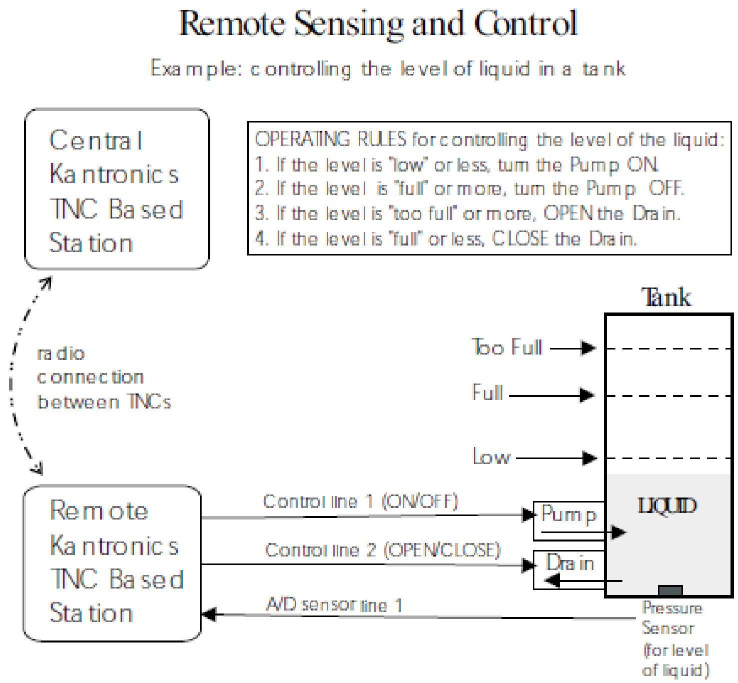 Kantronics p. 167.
at least one wireless low-power RF transceiver configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator; and	"The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox

	(i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an

	approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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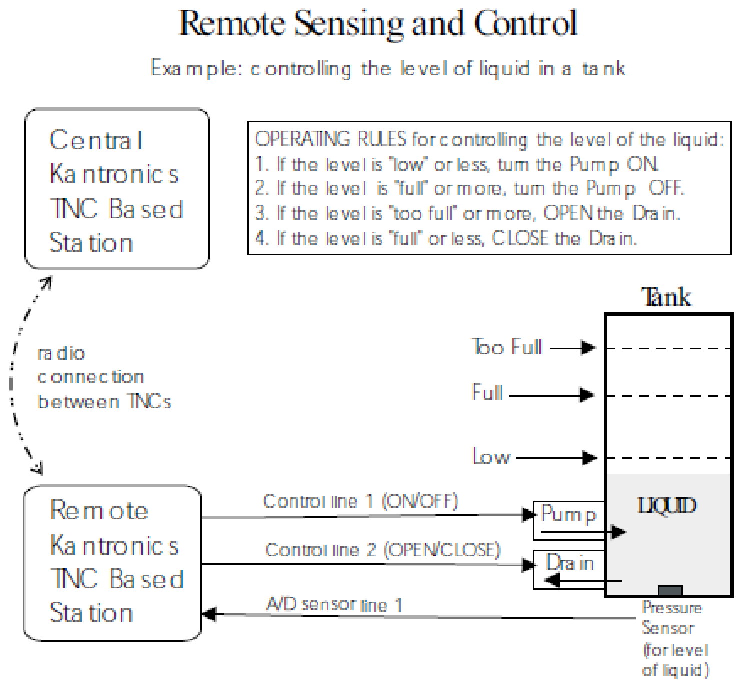
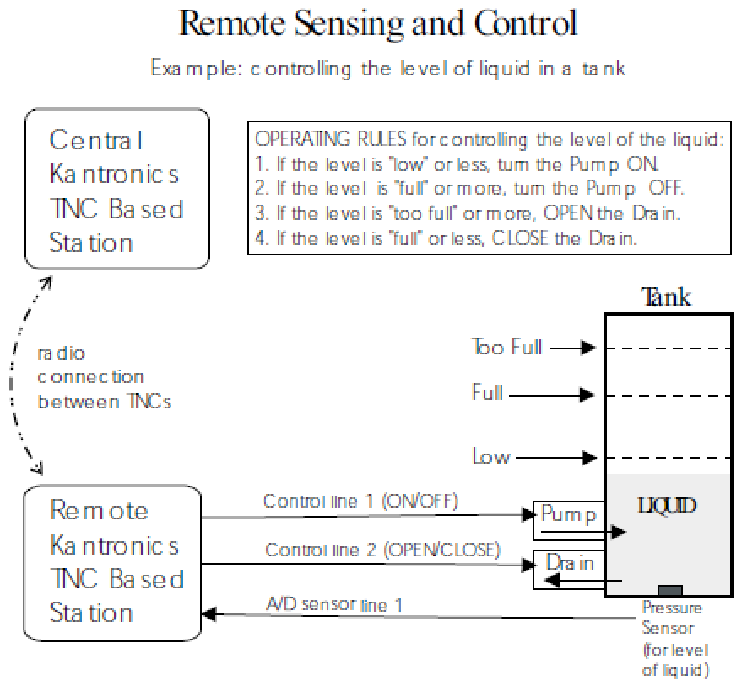
	 Kantronics, p. 167.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response.	"The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer.

	• The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage

	presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

	 Kantronics, p. 167.
43. The system defined in claim 42, the system input signal comprising:	The above contentions for claim 42 are hereby incorporated by reference.
a concatenation of information including data from a sensor, transceiver identification information from the originating transceiver, and transceiver identification information for each transceiver that receives and repeats the RF signal.	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC.

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	• The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	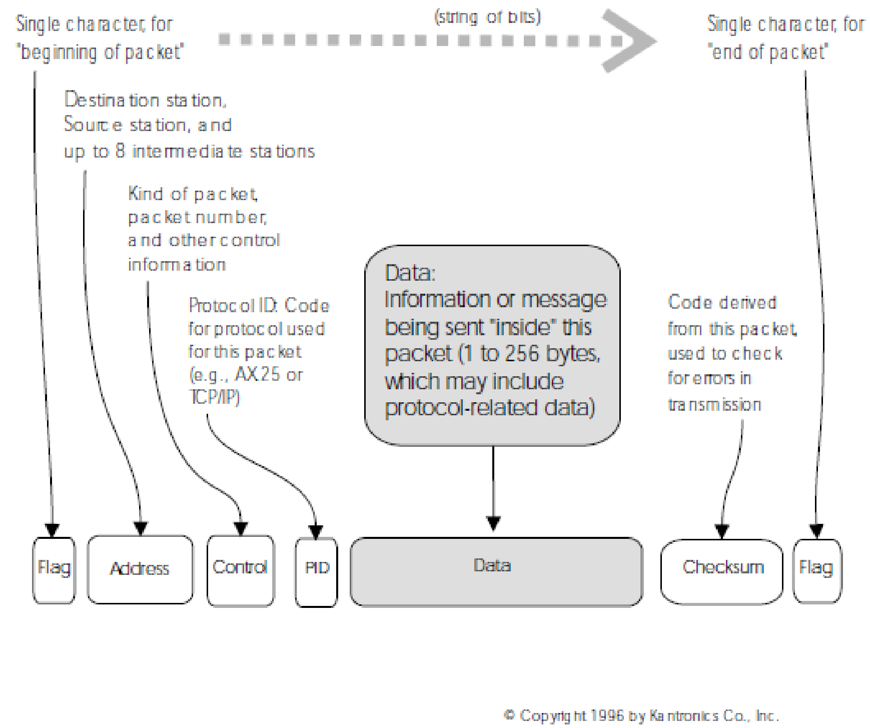 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header.

	Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
46. The system defined in claim 42, wherein the gateway translates the RF signal and the RF control signal into TC/IP for communication over the WAN.	The above contentions for claim 42 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol

	mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. ‘217 patent discloses: “The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module.” ‘217 patent, 46:11-16. ‘650 patent discloses “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore,

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	by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the

	node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
47. The system defined in claim 42, wherein the WAN is the Internet.	The above contentions for claim 42 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol

	congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. ‘217 patent discloses: “The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module.” ‘217 patent, 46:11-16. ‘650 patent discloses “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112.

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	However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP

	protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
48. The system defined in claim 42, wherein the WAN is a dedicated Intranet.	The above contentions for claim 42 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways:

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	1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. ‘217 patent discloses: “The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module.” ‘217 patent, 46:11-16. ‘650 patent discloses “In the preferred embodiment, APPs 112 can access any appropriate DA 102.

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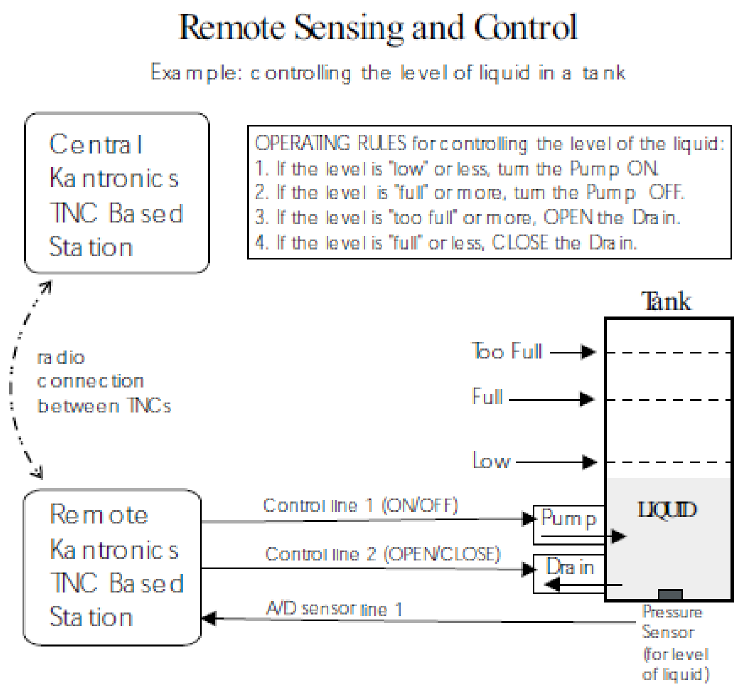
	The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below.

	However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
49. A system for managing an arrangement of application specific remote devices comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the

	voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

a computer configured to execute a multiplicity of computer programs, each computer program executed to generate at least one control signal in response to at least one application system input, said computer integrated with a wide area network (WAN);	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC

	interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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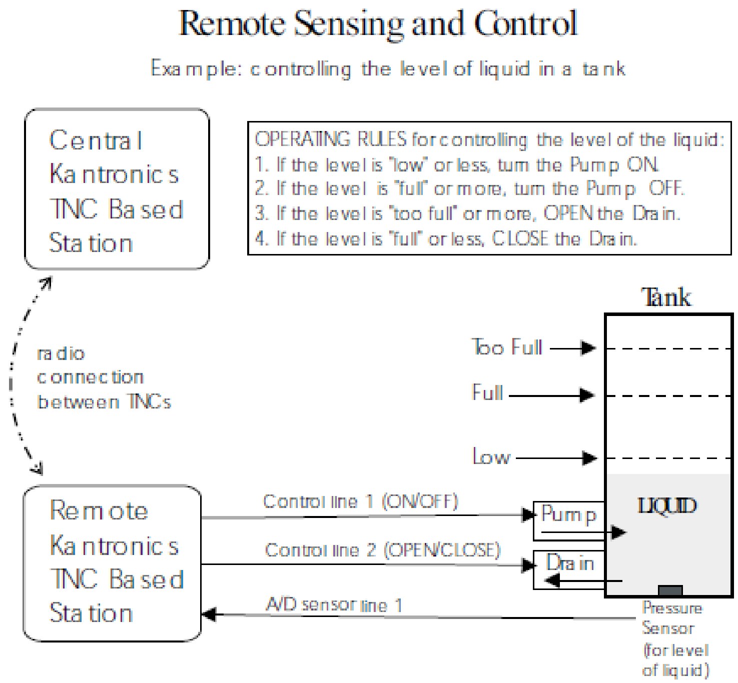
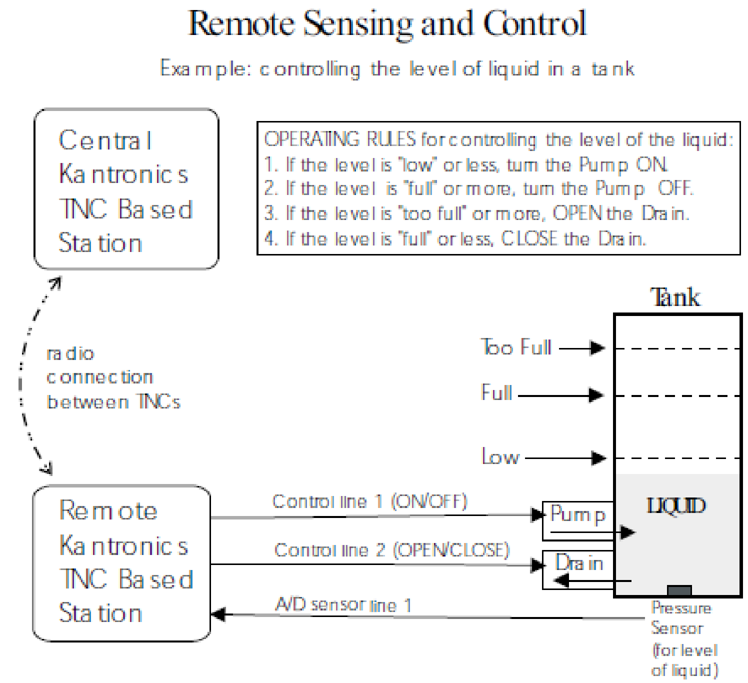
	 Kantronics, p. 167.
at least one gateway connected to the WAN configured as a two-way communication device to receive and translate the at least one control signal and the at least one application system input; said gateway further configured to translate and transmit a radio-frequency (RF) signal containing the control signal and destination information, said gateway further configured to receive and translate the at least one application system input and source information;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

	 Kantonics p. 167.
at least one wireless relatively low-power RF transceiver per computer program configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator and a sensor;	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox

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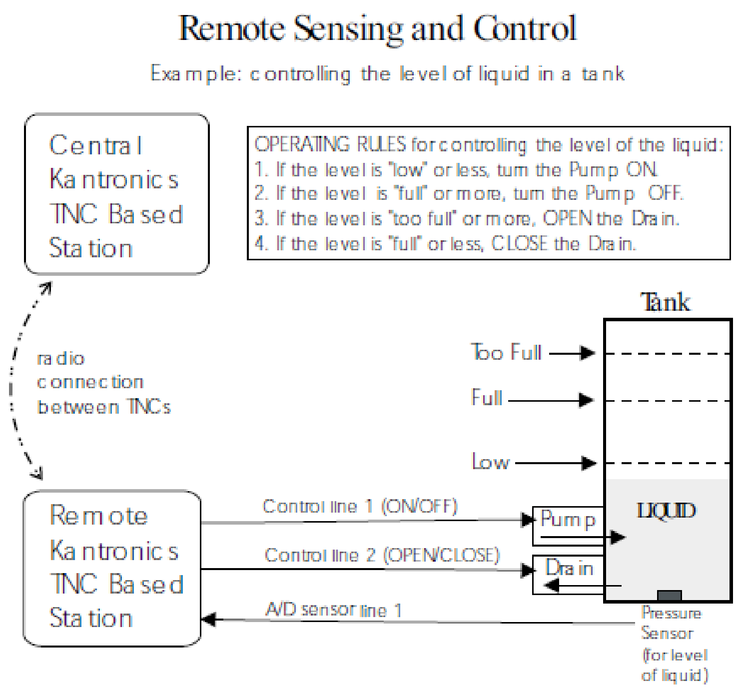
	(i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output

	lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
an actuator configured to receive the analog output	"**Remote Sensing and Control**

signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response; and	You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5

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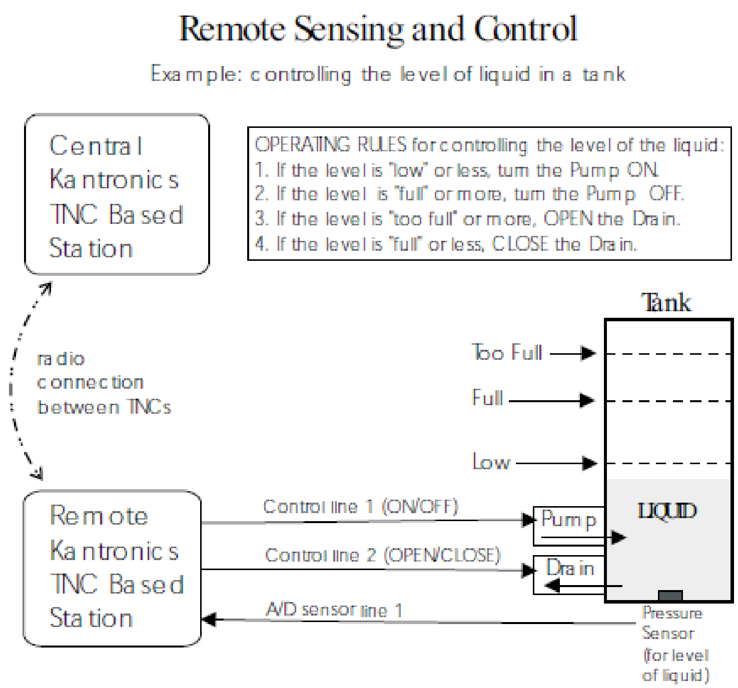
	second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
a sensor configured to translate a physical condition into an analog version of the application system input.	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

	• **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	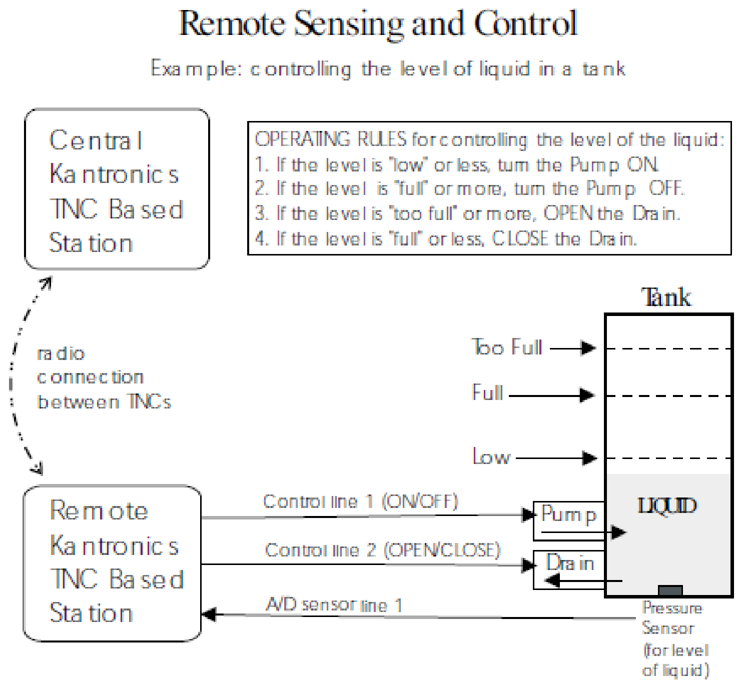 Kantronics, p. 167.
51. The system as defined in claim 49, wherein the at least one gateway translates the RF signal and the RF control signal into TCP/IP for communication over the WAN.	The above contentions for claim 49 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway

	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

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	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
52. The system as defined in claim 49, wherein the WAN in the Internet.	The above contentions for claim 49 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example:

	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250.

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	"Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed

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	over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
53. The system as defined in claim 49, wherein the WAN is a dedicated Intranet.	The above contentions for claim 49 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example:

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	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250.

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	"Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26.

	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
54. The system as defined in claim 49, wherein the at least one gateway is connected to the WAN by a network selected from the group consisting of a telecommunications network, private radio-frequency network, and a computer network.	The above contentions for claim 49 are hereby incorporated by reference. "**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the

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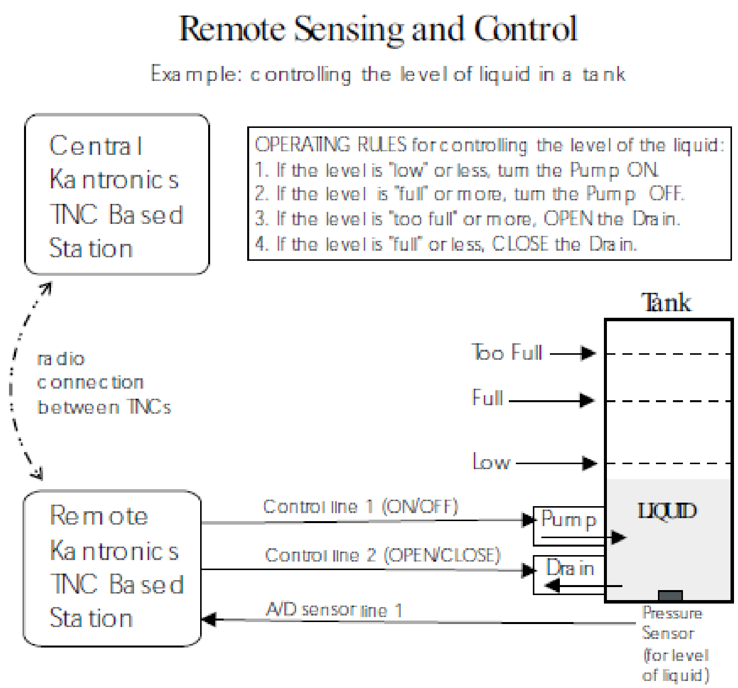
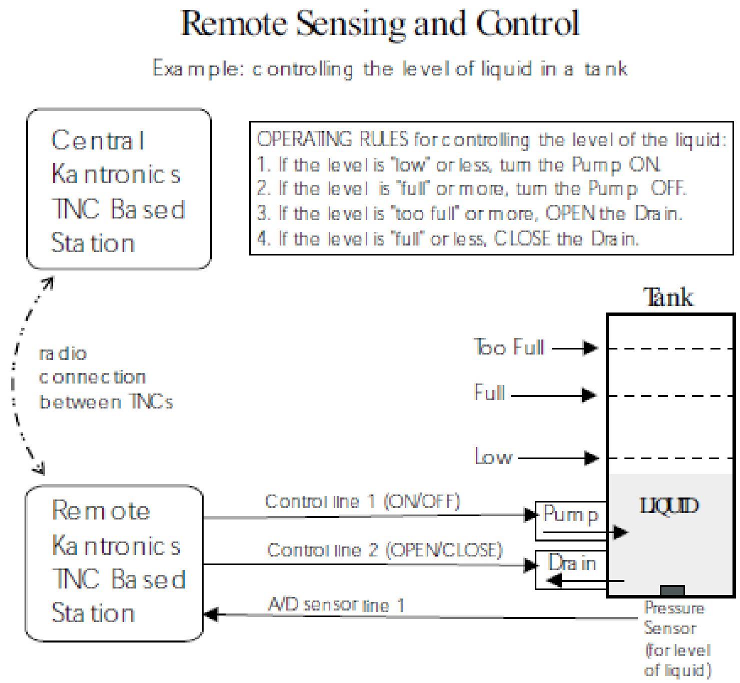
	packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.  Kantonics p. 167.
55. A method of collecting information and providing data services comprising:	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and

	information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use

	different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

	 Kantronics, p. 167.
adaptively configuring a data translator at the output of a local controller, wherein the data translator converts the output data stream into an information signal consisting of a transmitter code and an information field;	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1)

	view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the

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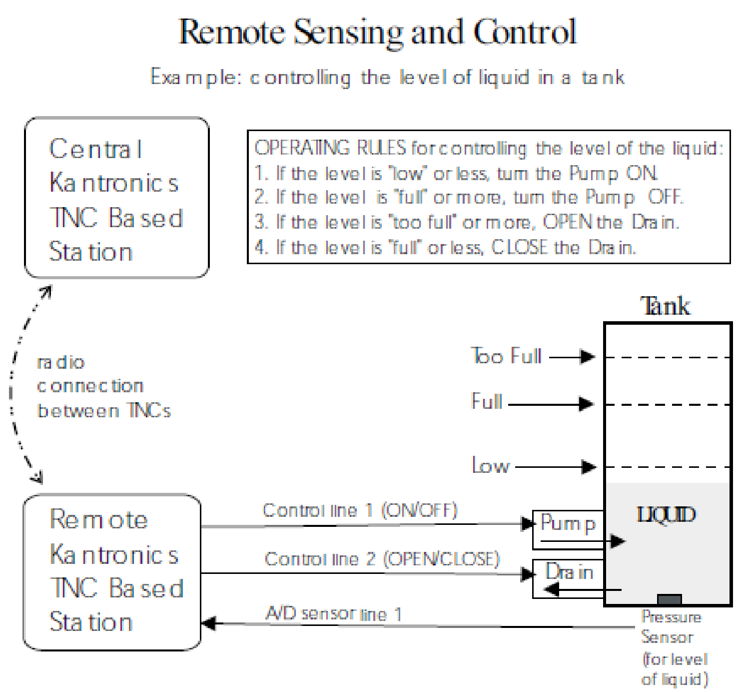
	voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

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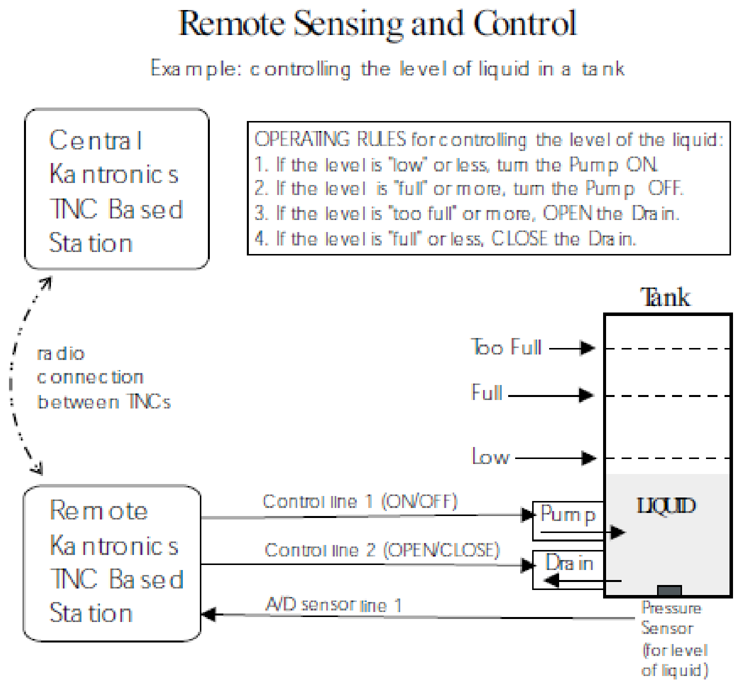
adaptively configuring at least one transmitter with the data translator, wherein the transmitter converts the information signal into a low-power RF signal;	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC

	interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

	 Kantronics, p. 167.
placing a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically wherein the low power RF signal is received and repeated as required to communicate the information signal to a gateway, the gateway providing access to a WAN;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC.

	Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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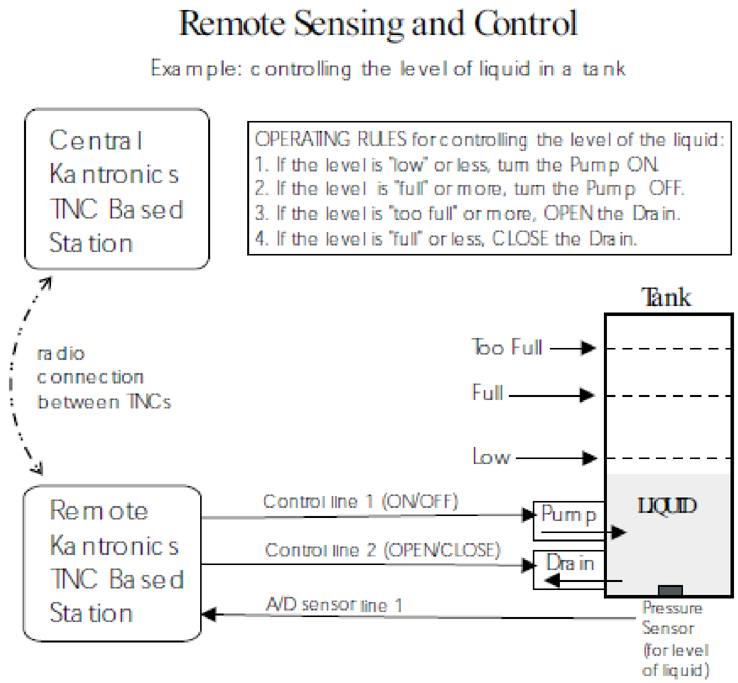
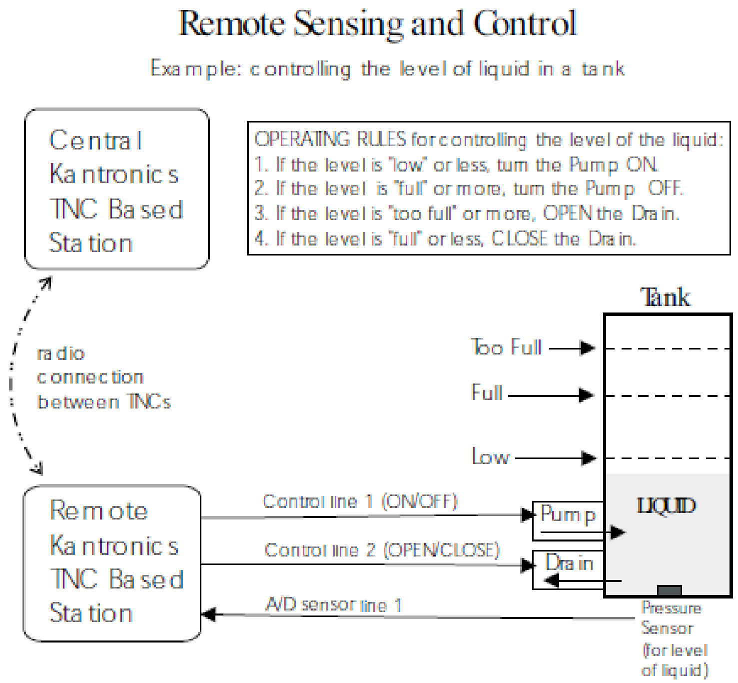
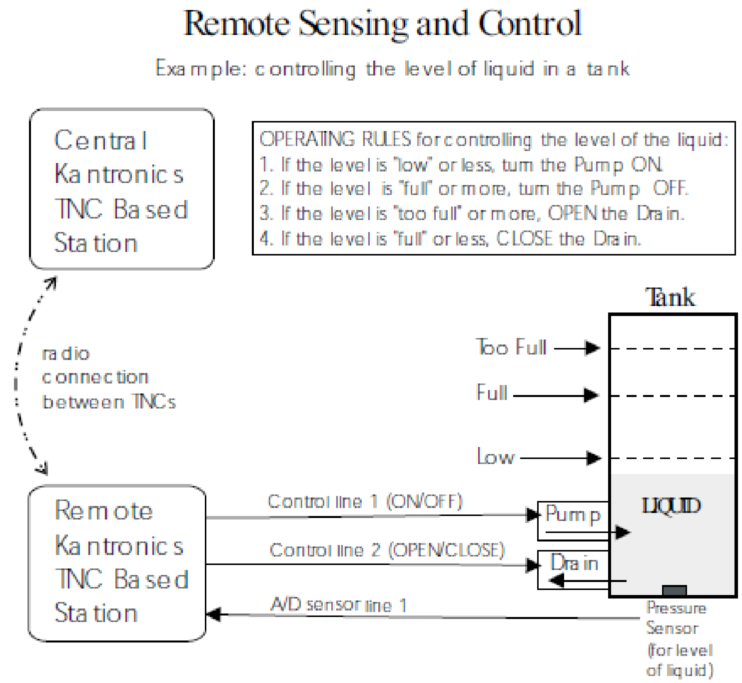
	 Kantronics, p. 167.
translating the low-power RF signal within the gateway to a WAN compatible data transfer protocol;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

	 Kantonics p. 167.
transferring the translated low-power RF signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in said signal; and	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

	 Kantonics p. 167.
granting client access to the computer.	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	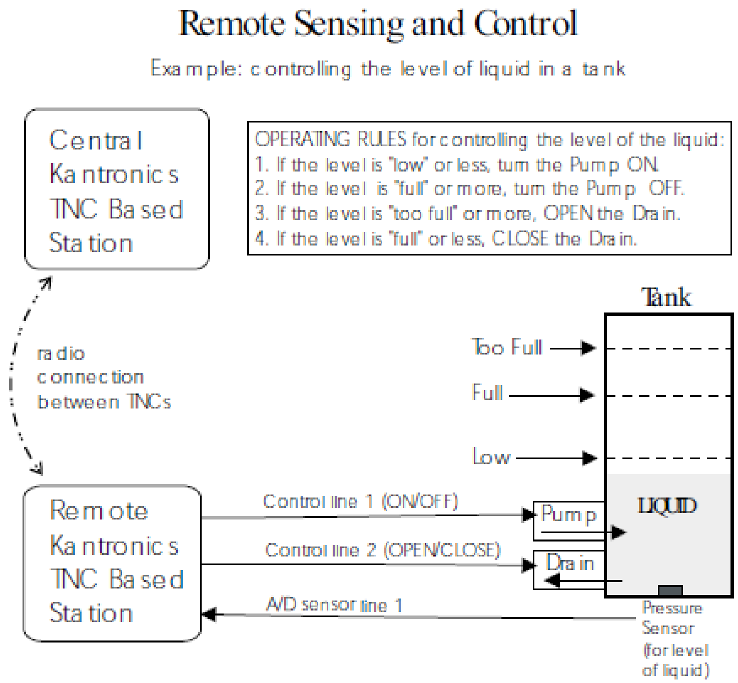 Kantonics p. 167.
56. The method of claim 55 wherein the WAN is the Internet.	The above contentions for claim 55 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

Exhibit P10 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Kantronics

	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
57. The method of claim 55 wherein the WAN is an Intranet.	The above contentions for claim 55 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway

	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
59. The method of claim 55 wherein the clients access the information using a web browser.	The above contentions for claim 55 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example:

	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250.

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	"Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed

	over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
60. A method for controlling an existing control system with a local controller comprising:	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your

	computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing.

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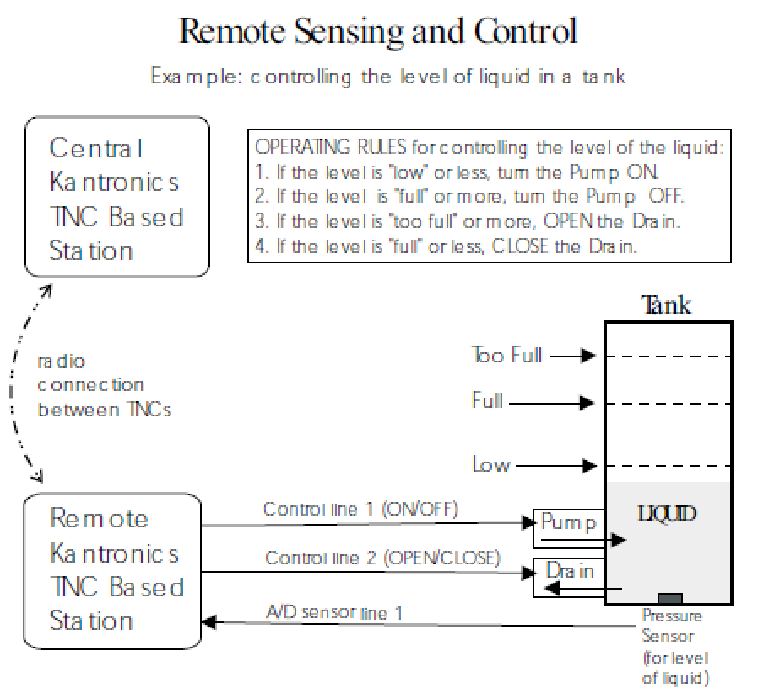
	• **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167. 

	Kantronics, p. 167.
adaptively configuring a data translator disposed between and in communication with both a local controller and a wireless transceiver, wherein the data translator is configured to translate the local controller data stream into an information signal consisting of a transceiver identification code and a concatenation of function codes, the data translator further configured to translate control signals from the wireless transceiver into local controller recognized control signals;	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You

	can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	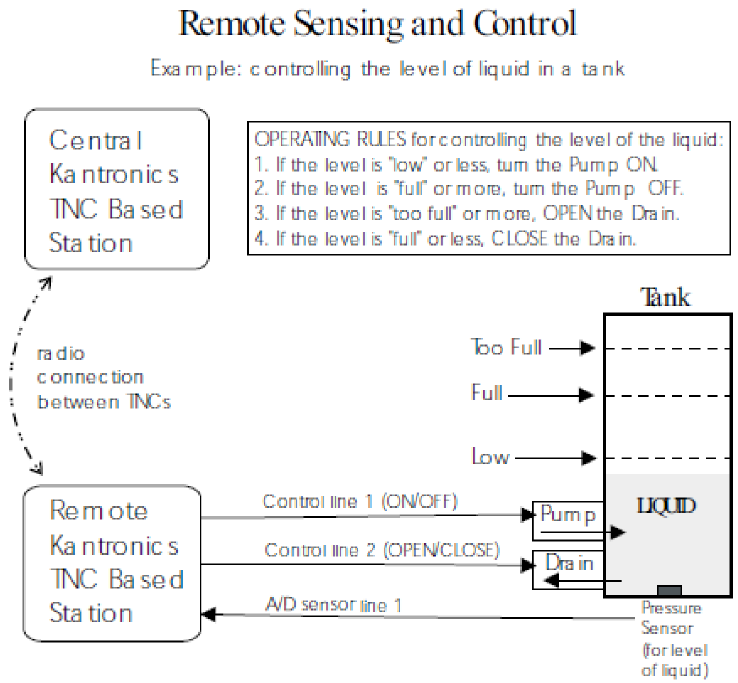 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.

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remotely collecting data from the at least one relatively low-powered radio-frequency (RF) transceiver integrated with the data translator;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short

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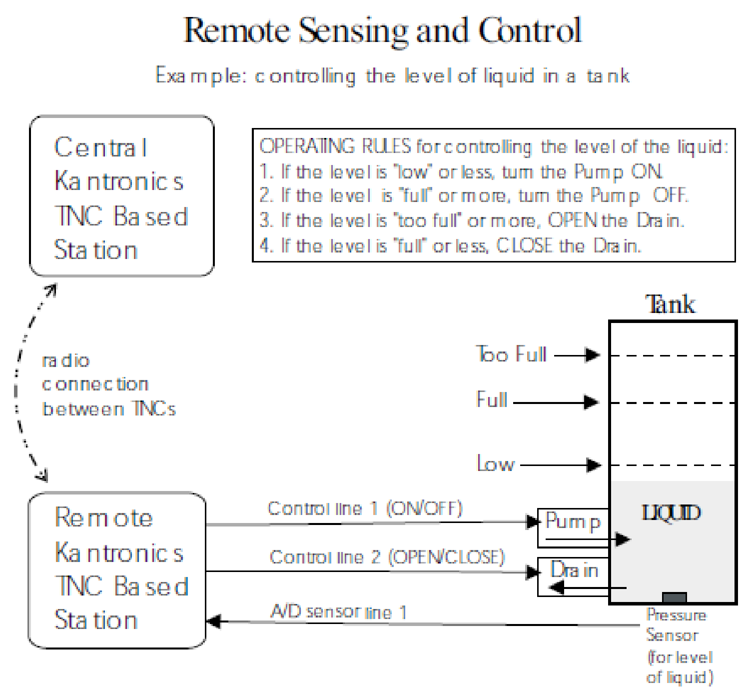
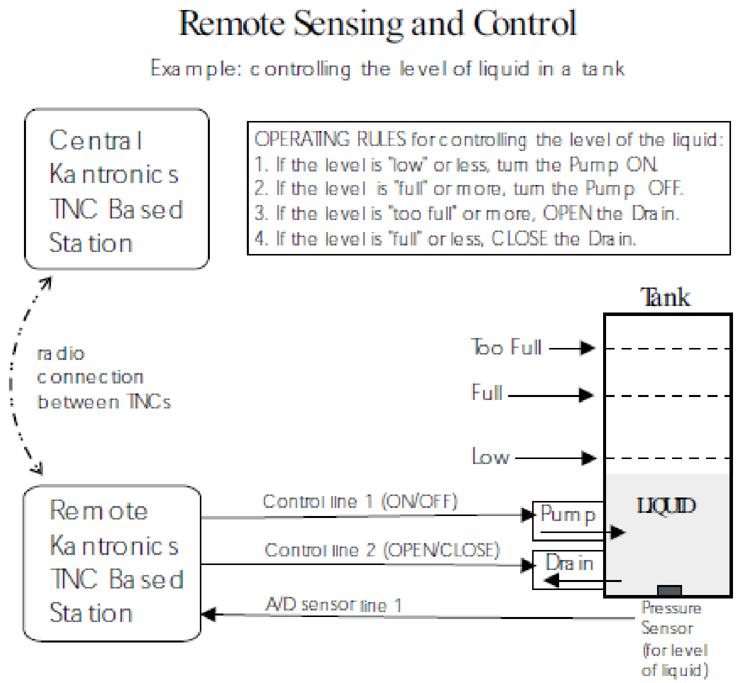
	ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
processing the data into an RF signal;	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into

	digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use

	different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

	 Kantronics, p. 167.
transmitting the RF signal to a gateway;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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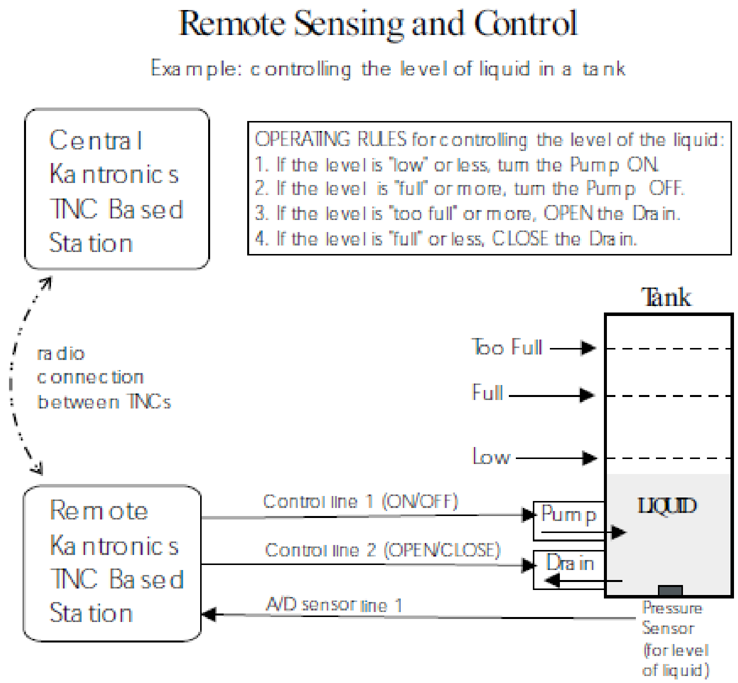
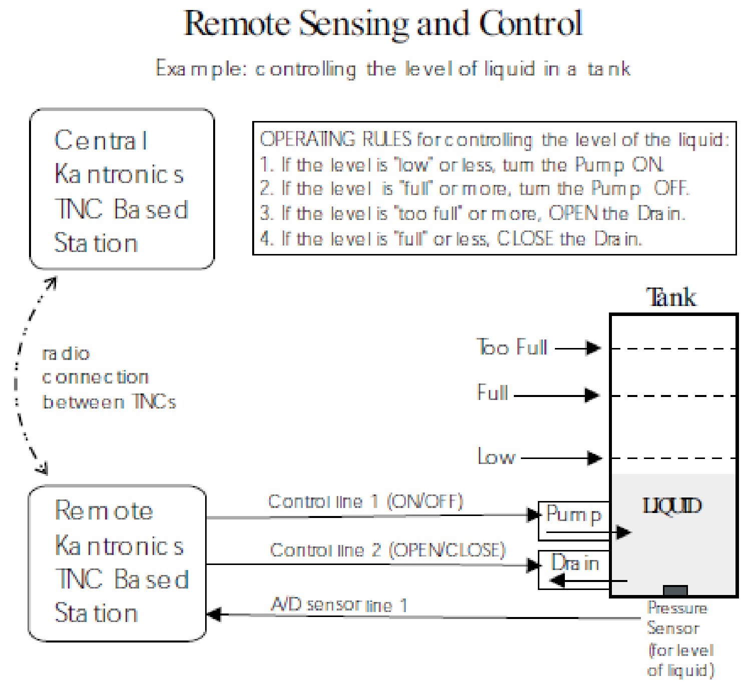
	 Kantonics p. 167.
translating the data in the RF signal into a network transfer protocol;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

	 Kantonics p. 167.
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by at least one sensor by generating an appropriate control signal;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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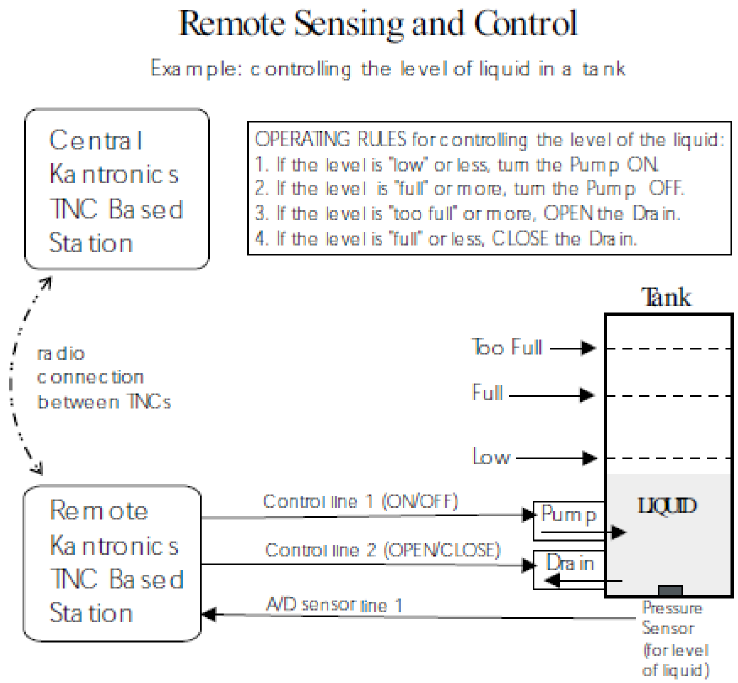
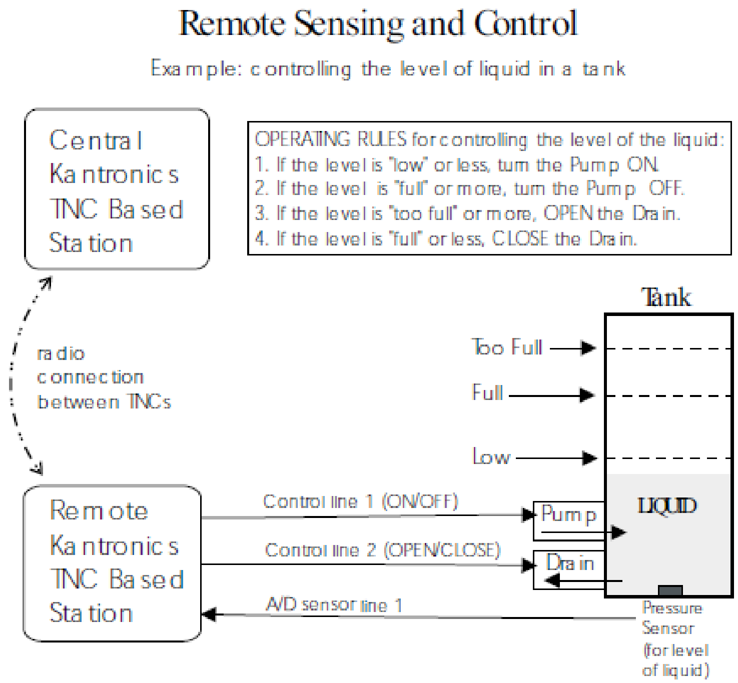
	 Kantonics p. 167.
sending the control signal via the network to the gateway;	"**Gateways** In Kantronics' multi-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

	 Kantonics p. 167.
translating the control signal from a network transfer protocol into an RF control signal;	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox

	(i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output

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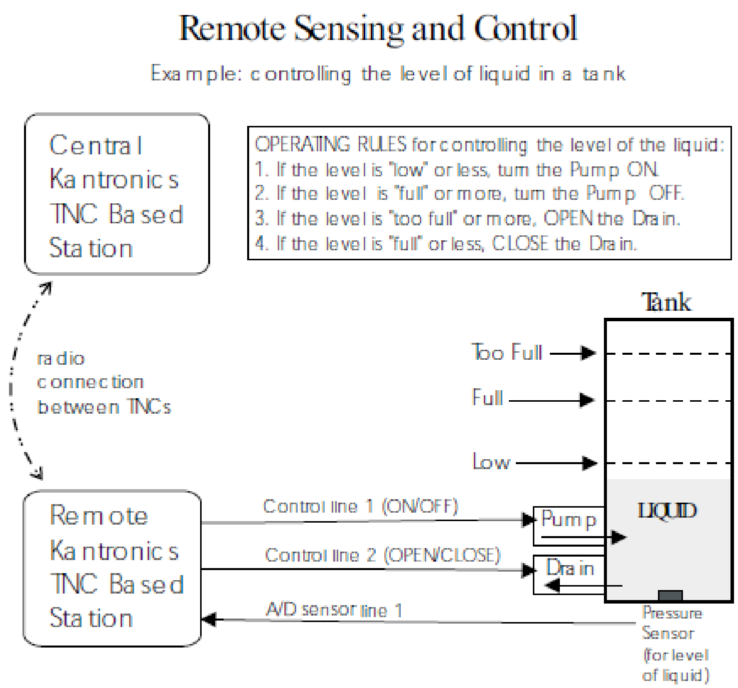
	lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
transmitting the RF control signal;	The three parts of a packet radio station work together as follows:

	• The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command,

	see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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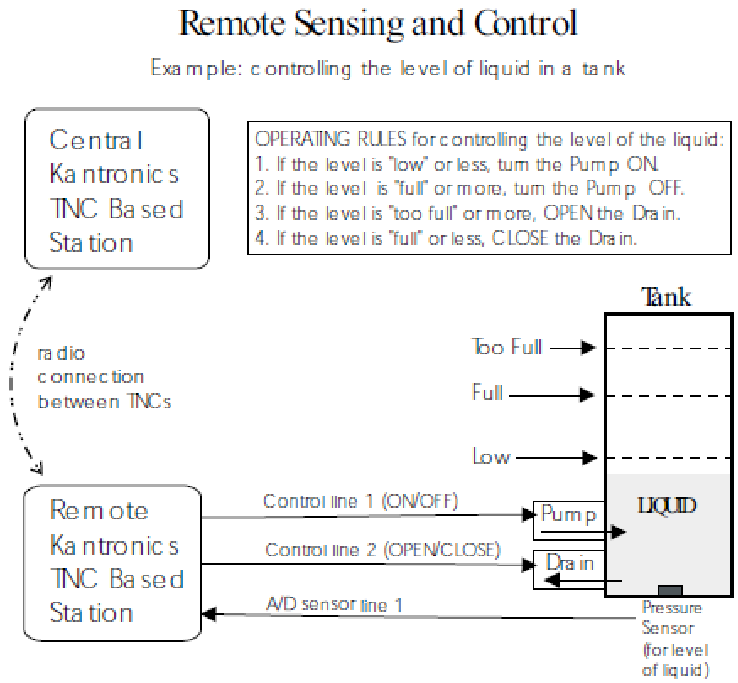
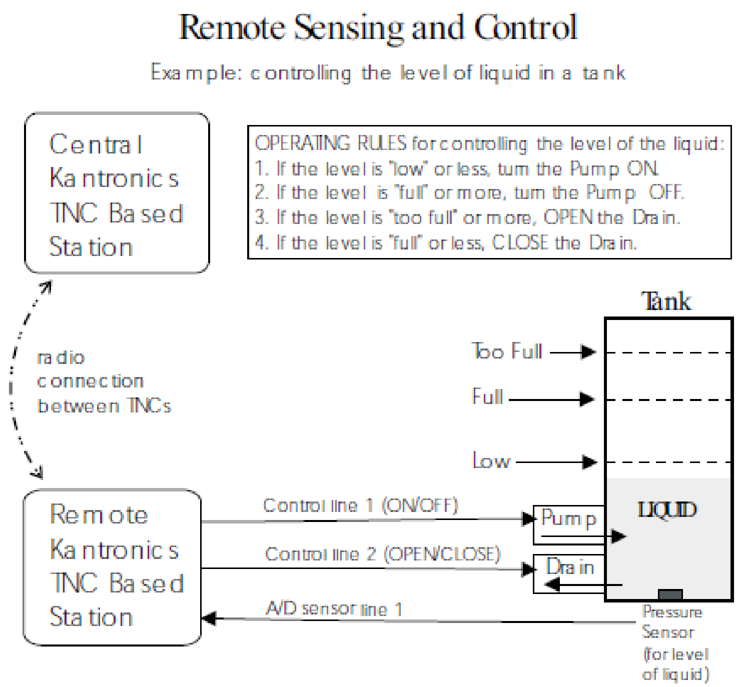
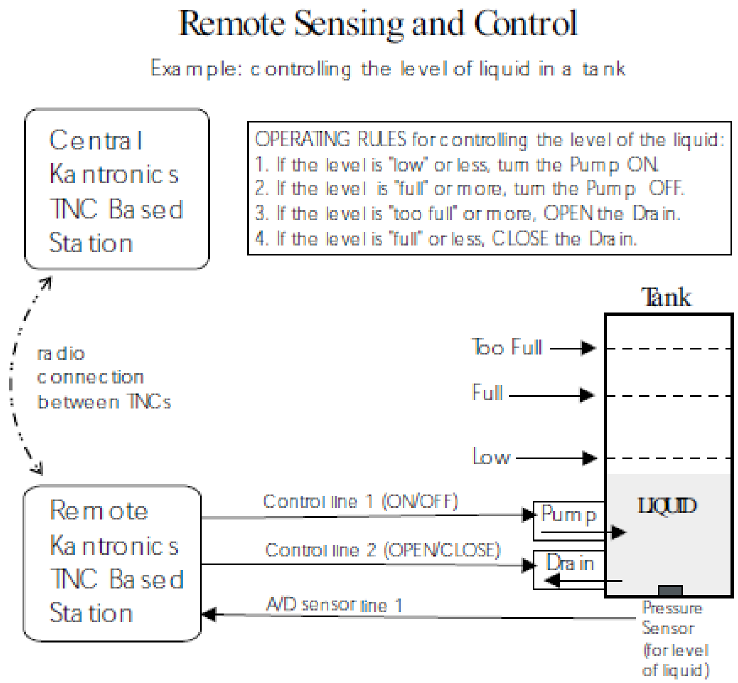
	 Kantronics, p. 167.
receiving the RF control signal;	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1)

	view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the

	voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

translating the received RF control signal into a local controller recognized control signal; and	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC

	interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

	 Kantronics, p. 167.
applying the local controller recognized control signal via a local control to effect the desired system response.	The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1)

	view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the

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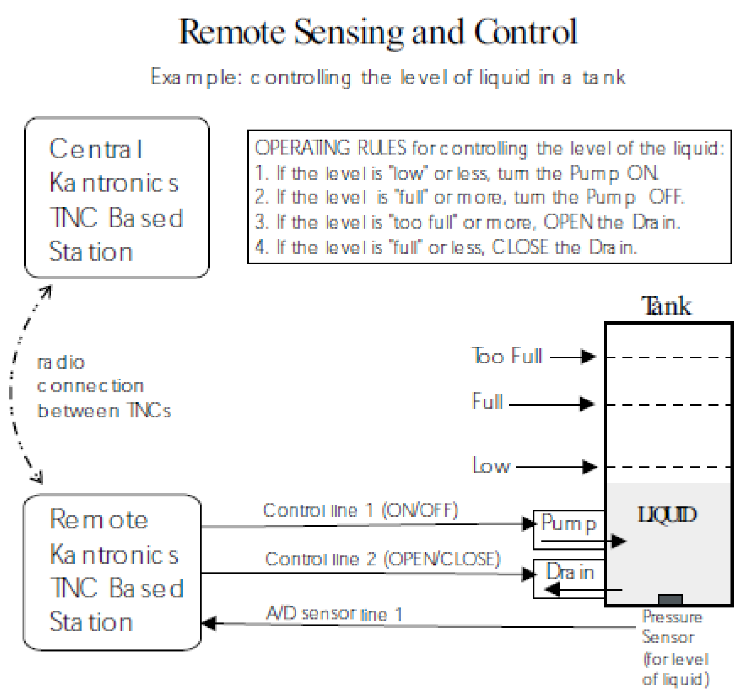
	voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

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61. The method of claim 60, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 60 are hereby incorporated by reference. The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage

	presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	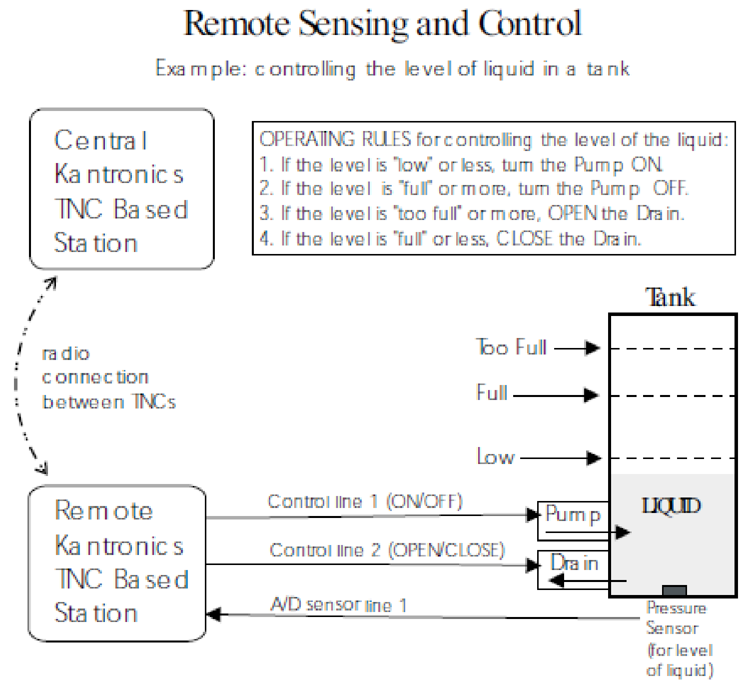 Kantronics, p. 167.
62. The method of claim 60, wherein the network is the Internet.	The above contentions for claim 60 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway

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	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

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	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
63. The method of claim 60, wherein the network is an Intranet.	The above contentions for claim 60 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example:

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	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250.

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	"Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed

	over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
64. The method of claim 60, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 60 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example:

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	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 19. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 20. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250.

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	"Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26.

	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 8,013,732 based on Kantronics

The '732 Patent – Claim	Kantronics KPC-3 – Users Guide, 1997 ("Kantronics")
1. A system for remote data collection, assembly, storage, event detection and reporting and control, comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used

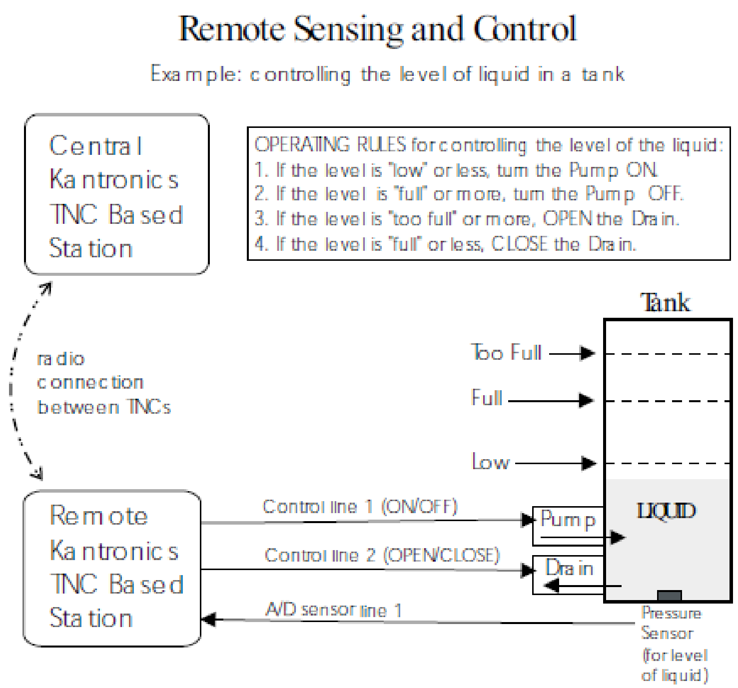
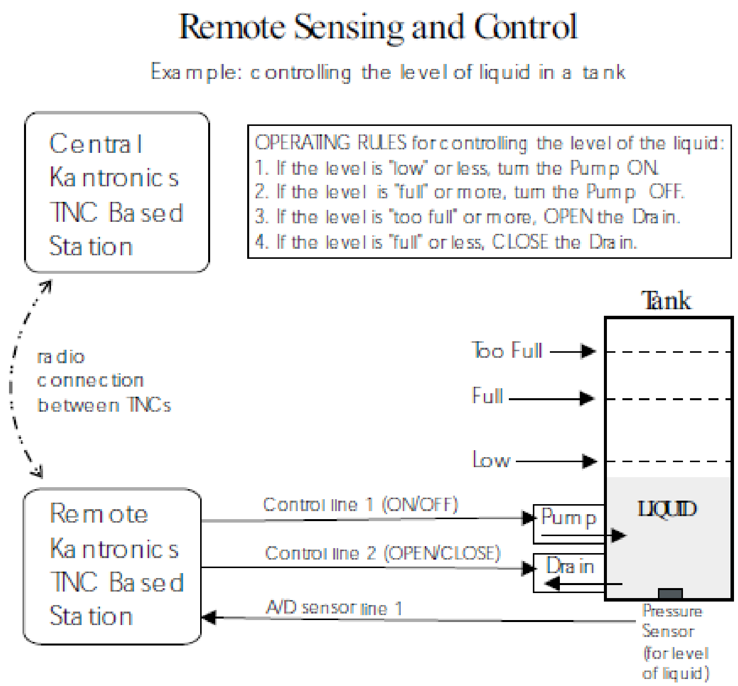
	with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated	"The following diagram illustrates the use of two Kantronics TNC/radio stations for remote controlling and sensing. These operations could be carried out manually or via a terminal program running in the computer in the central TNC station.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 8,013,732 based on Kantronics

with a wide area network (WAN);	 Kantronics, p. 167. "**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows:

	• The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and

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	local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by

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	the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.

	'773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically inter- faced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have

	callsigns, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information).” Kantronics, p. 20. “All amateur radio packets (also called “frames”) are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the “HELLO” example, are called “information packets.” The following diagram shows the basic building blocks of “connected information” packets used in amateur packet radio:” Kantronics, p. 26.

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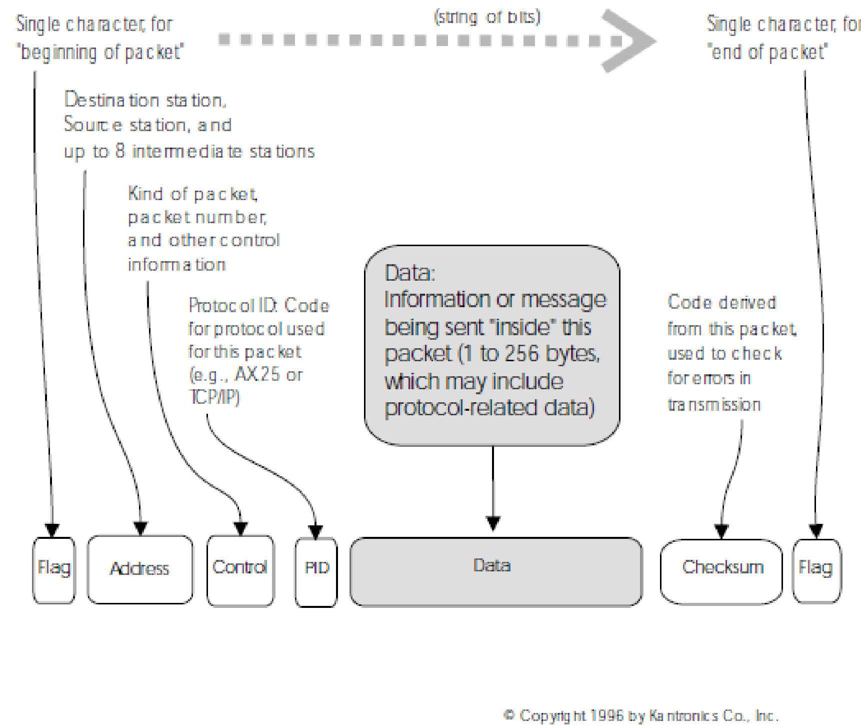
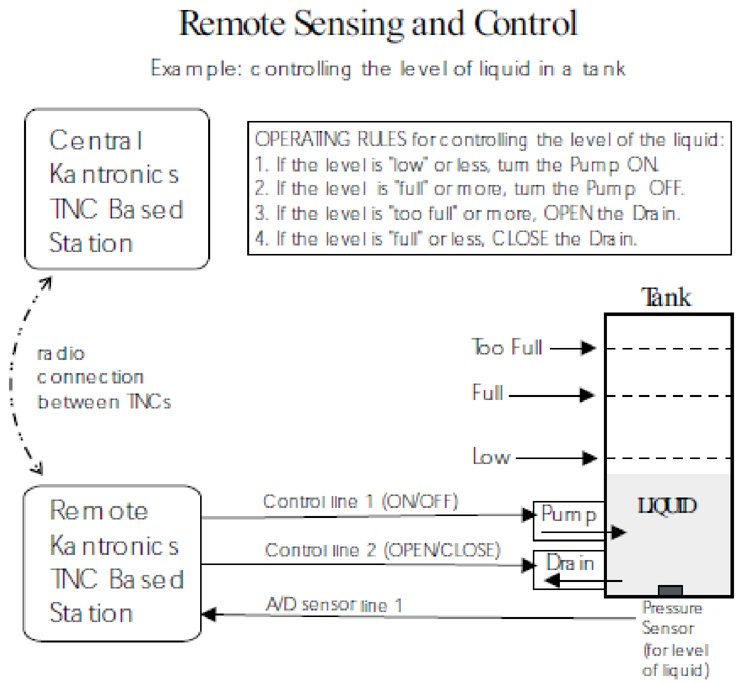
	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmit- ting transceivers, said gateway further configured to further transmit the	"**Gateways** In Kantronics' muti-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

translated information to the computer over the WAN and wherein at least one of said plurality of transceivers is also electrically interfaced with an actuator to control an actuated device.	 Kantronics p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

	"Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote

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	ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

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	'773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
13. In a system comprising a plurality of wireless devices configured for remote wireless communication and comprising a device for monitoring and controlling remote devices, the device comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D

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	converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	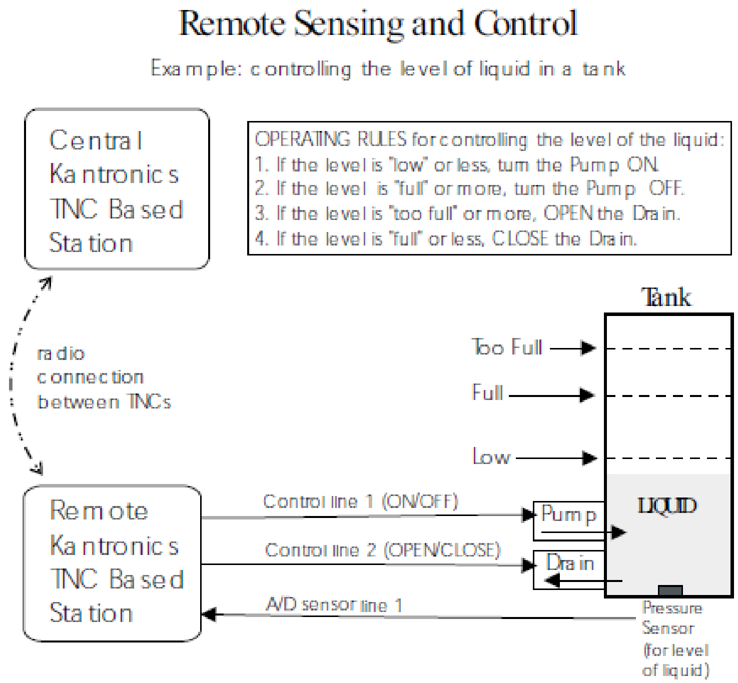 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in

	memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control."

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	'817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.

	"Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	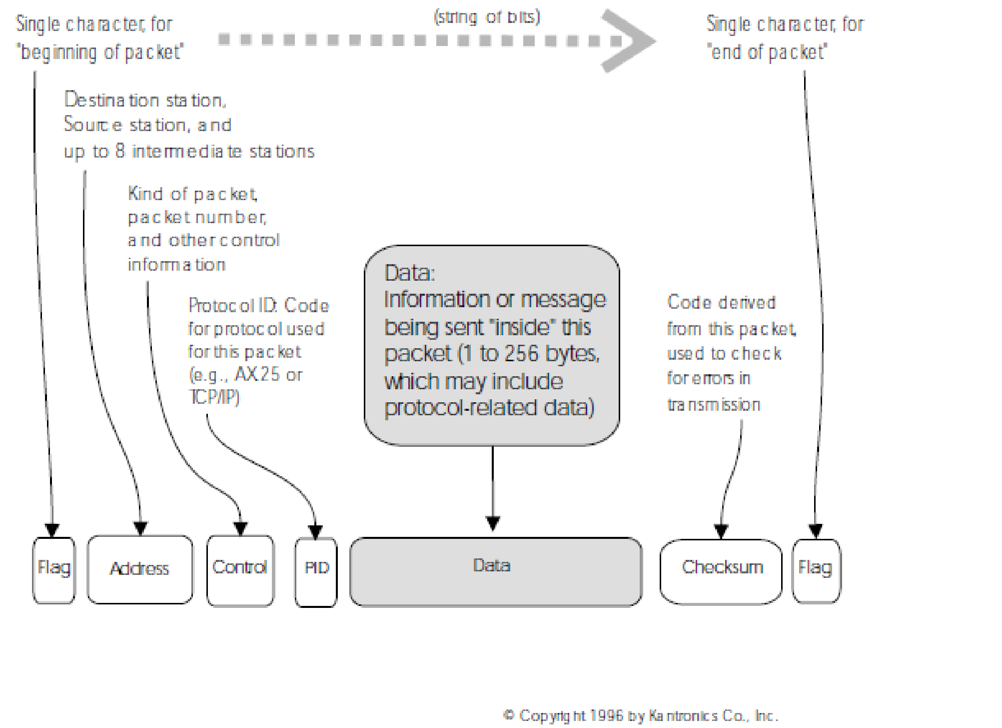 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"Digipeating Everything we have done so far will only be heard by those within range to hear your signal. With packet radio it is possible to go farther than that. The DIGIPEAT parameter in the TNC comes defaulted ON. This makes your TNC a possible relay station, or digital repeater—digipeater, or just digi for short." Kantronics page 105.

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a data controller operatively coupled to the transceiver and the sensor, the data controller configured to control the transceiver and receive data from the sensor, the data controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
14. The device of claim 13, wherein the data controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The above contentions for claim 13 are hereby incorporated by reference.

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	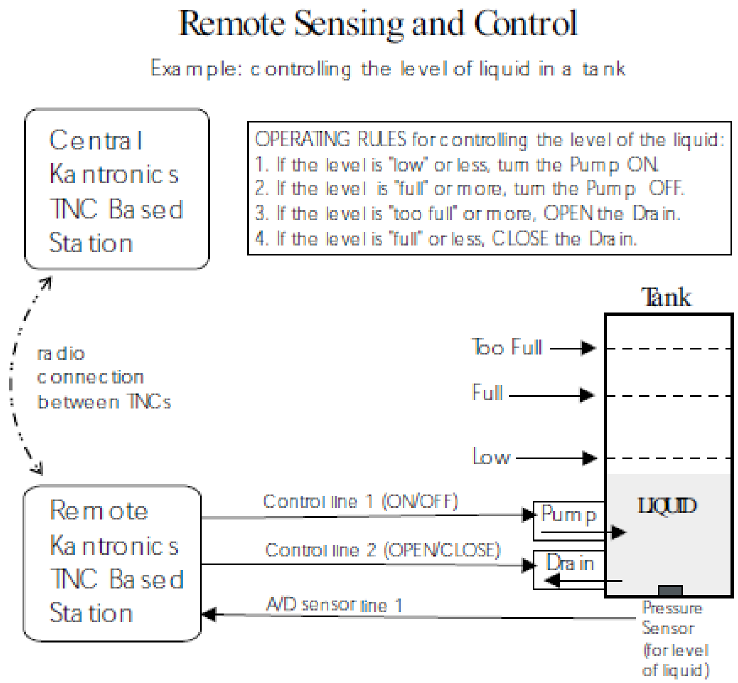 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in

	memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control."

	'817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
16. The device of claim 13**,** wherein the data controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The above contentions for claim 13 are hereby incorporated by reference.

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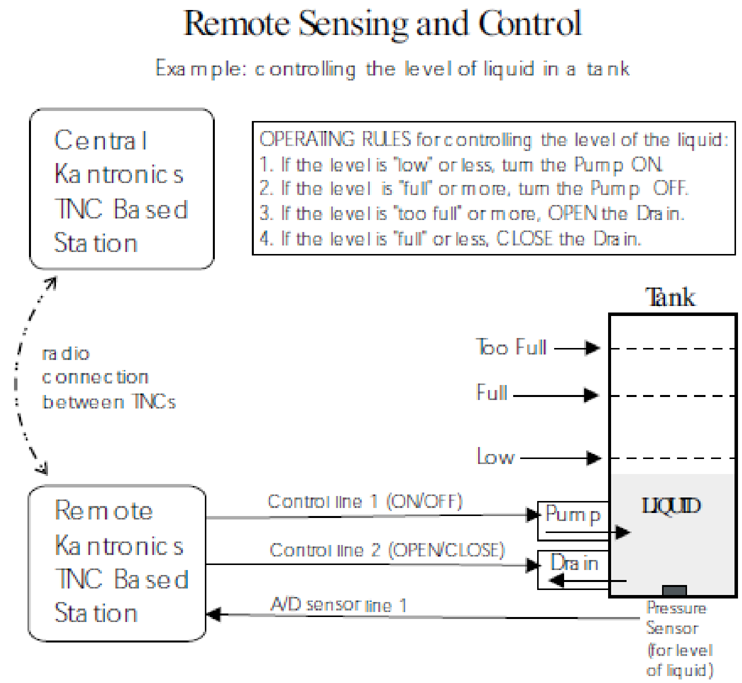
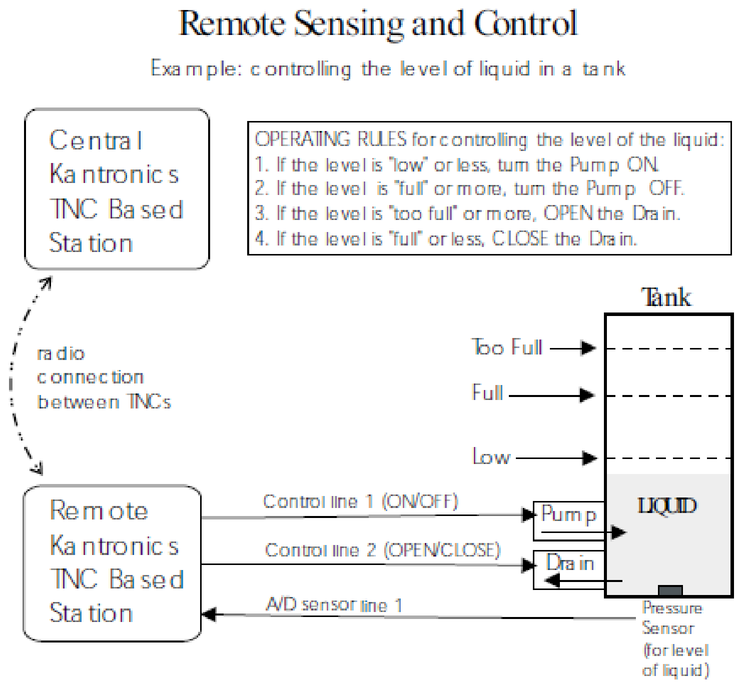
	 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in

	memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control."

	‘817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: “Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements.” ‘903, 4:23-31.
17. The device of claim 13**,** wherein the data controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code	The above contentions for claim 13 are hereby incorporated by reference.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 8,013,732 based on Kantronics

	 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

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	memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control."

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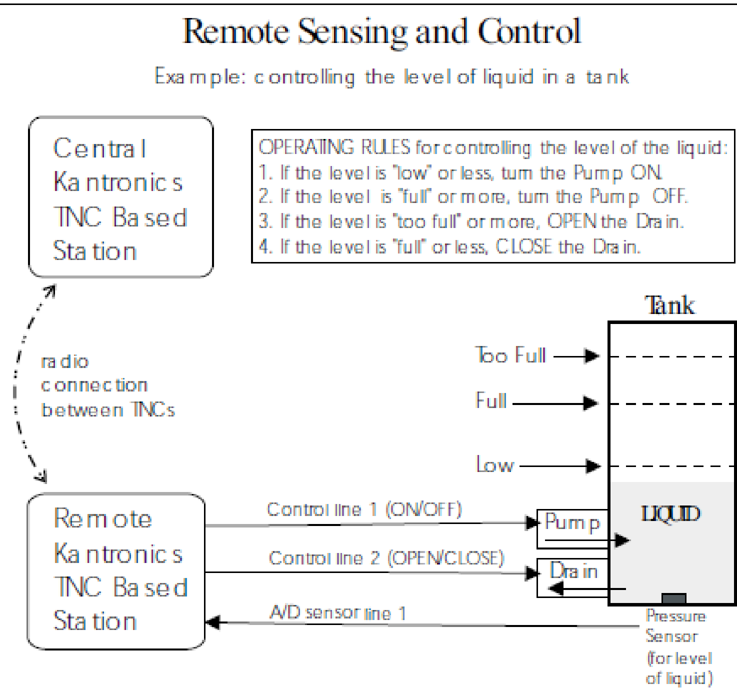
18. The device of claim 13, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the data controller can implement.	The above contentions for claim 13 are hereby incorporated by reference. “**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your

	computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
19. The device of claim 13, further comprising an actuator configured to receive command data from the controller and in response implement the command.	 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed

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	explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 (“the ‘217 patent”), U.S. Patent No. 5,963,650 (“the ‘650 patent”), U.S. Patent No. 5,907,491 (“the ‘491 patent”), U.S. Patent No. 7,027,773 (“the ‘773 patent”), U.S. Patent No. 6,100,817 (“the ‘817 patent”), U.S. Patent No. 5,874,903 (“the ‘903 patent”) or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: “PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator.” Jubin page 23. “A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging.” Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: “The “function fields” provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process.” Burchfiel page 247. “A level-3 debugging protocol has been defined which supports debugging of remote PRU’s from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting “mousetraps” which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure.” Burchfiel page 248.

	U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be

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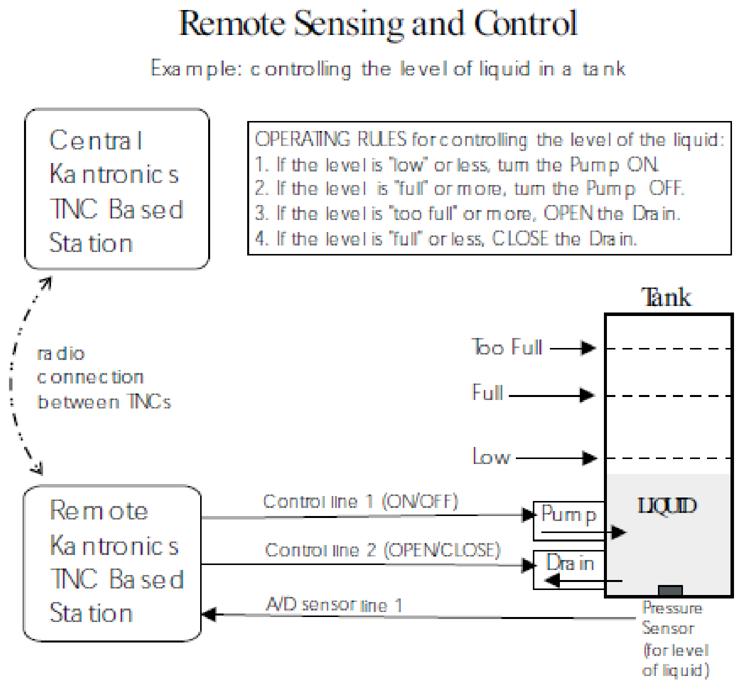
	performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
31. A wireless communication system including wireless communication devices capable of wireless communication, the wireless communication system comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

	• **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

	 Kantronics, p. 167.
at least one wireless communication device comprising a transceiver, the transceiver having a unique identification code and being interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your

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	computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	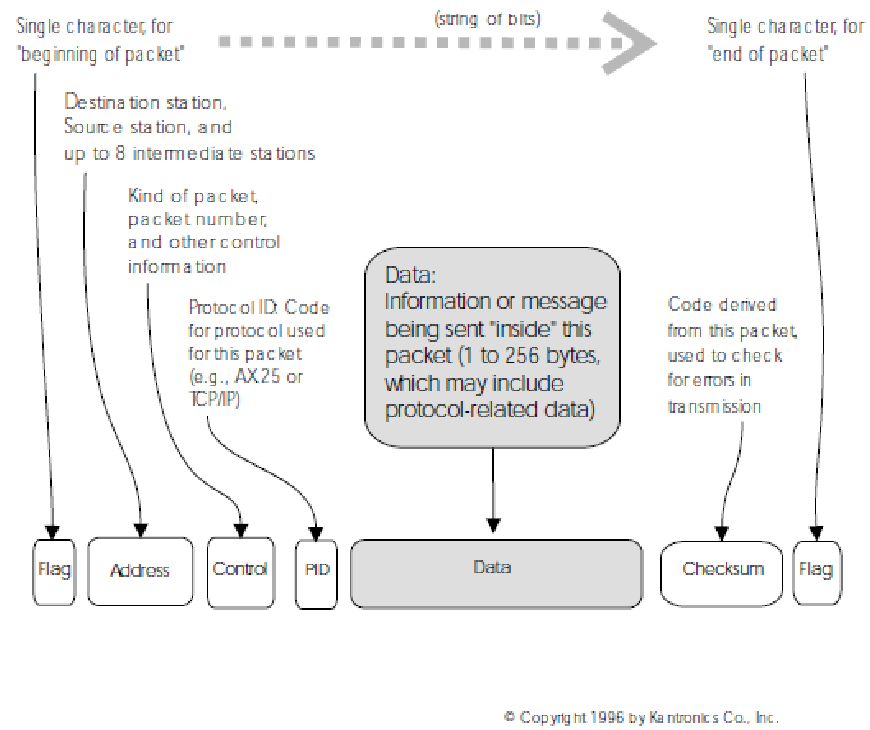 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control transceiver operations and receive data from the sensor, the controller configured to format data packets for transmission via the transceiver with at least some data packets comprising data	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * *

representative of data sensed with the sensor; and	The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.

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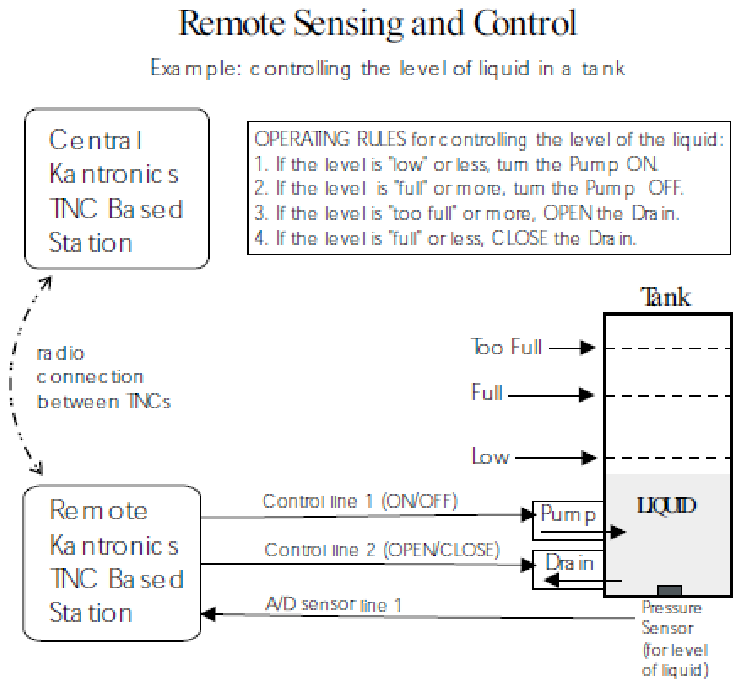
wherein the controller is configured to receive control signals from a data packet and based on the control signals send instructions to an actuator to implement a command.	 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in

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	'817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
32. The wireless communication system of claim 31**,** further comprising at least one gateway connected to a WAN configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to a computing device over the WAN.	The above contentions for claim 31 are hereby incorporated by reference. "**Gateways** In Kantronics' muti-port devices (e.g. Kantronics KAM Plus ad KPC-9612 Plus), a Gateway is also available. Using a gateway is similar to digipeating except that the retransmission of the packet takes place on another radio port of the TNC other than where it was received." Kantronics page 106.

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	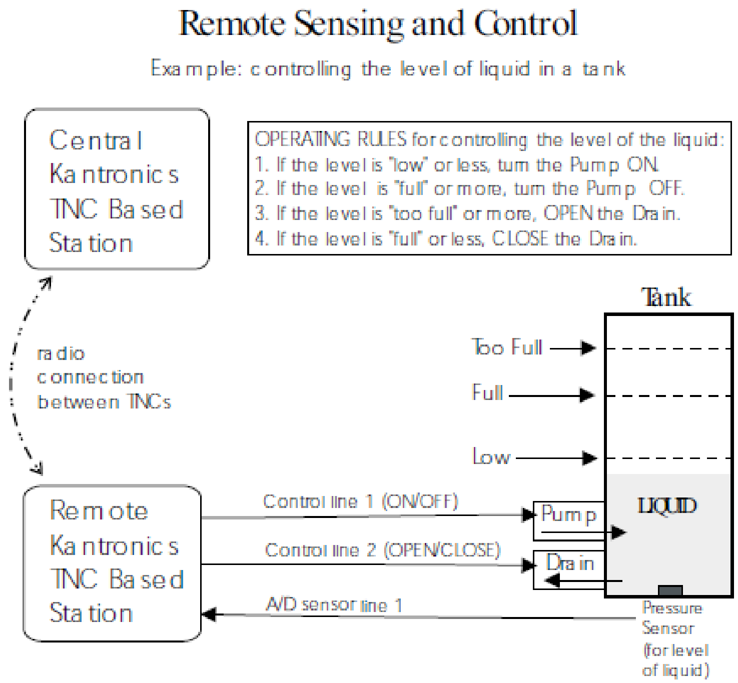 Kantonics p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

	"Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote

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	ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

	'773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
33. The wireless communication system of claim 31, further comprising a computing device configured to receive user input and based on user input, the computing device formatting control signals, and wherein the controller is configured to receive the control signals via wireless transmission and take action based on the control signals.	The above contentions for claim 31 are hereby incorporated by reference. "**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows:

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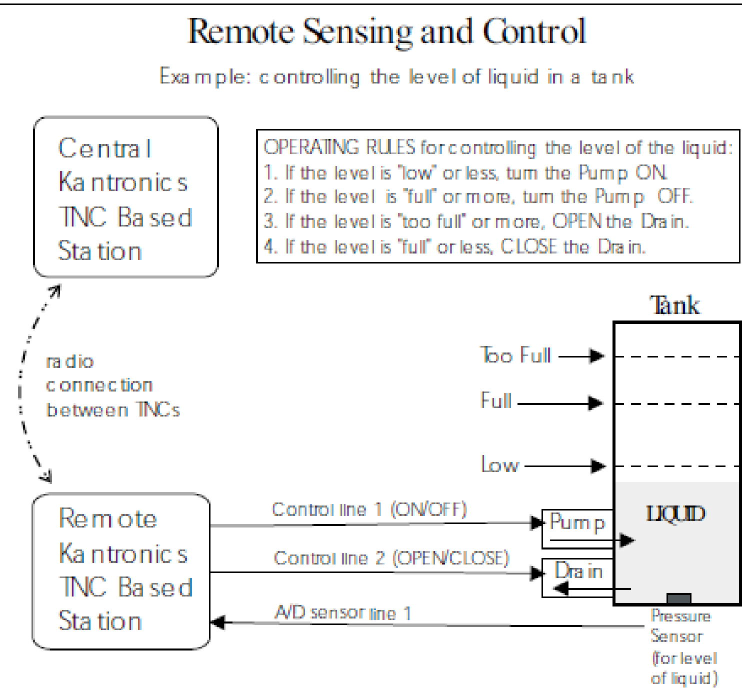
	• The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 8,013,732 based on Kantronics



Kantronics, p. 167.

To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in

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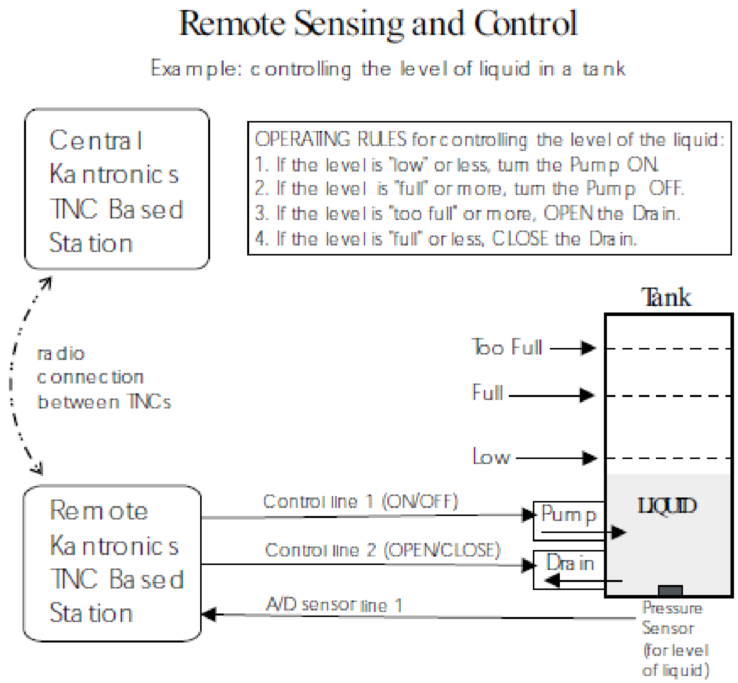
	memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control."

	'817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
34. The wireless communication system of claim 31, wherein the controller is configured to provide one or more function codes in the data packet in response to data sensed by the sensor.	The above contentions for claim 31 are hereby incorporated by reference.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 8,013,732 based on Kantronics

	 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses:

	"PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm

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	message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

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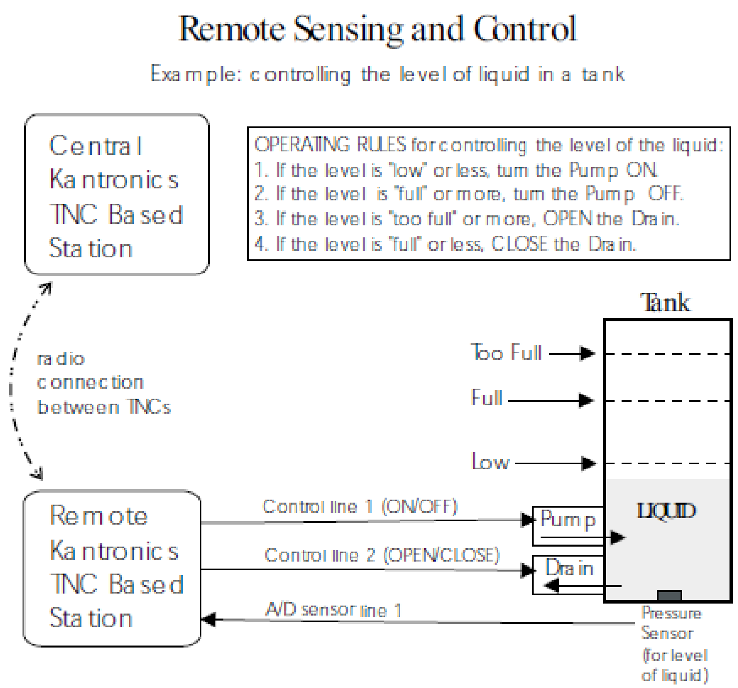
	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
35. The wireless communication system of claim 31, wherein the controller comprises a memory containing a plurality of function codes specific to the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1)

	view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.  Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"),

	U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more

	monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 8,013,732 based on Kantronics

	U.S. Patent No. 6,100,817 discloses: “In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control.” ‘817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: “Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements.” ‘903, 4:23-31.

Exhibit P10– Invalidity Chart for U.S. Patent No. 8,754,780 based on Kantronics

The '780 Patent – Claim	Kantronics KPC-3 – Users Guide, 1997 ("Kantronics")
1. In a system comprising a plurality of wireless devices, a device comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to

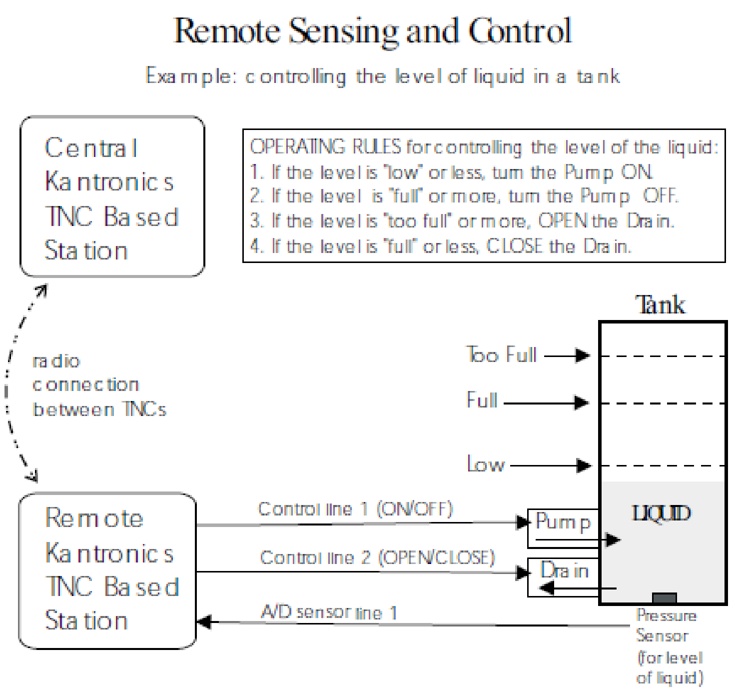
	two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

Exhibit P10– Invalidity Chart for U.S. Patent No. 8,754,780 based on Kantronics

a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from a second wireless transceiver in a predetermined signal type;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

Exhibit P10– Invalidity Chart for U.S. Patent No. 8,754,780 based on Kantronics

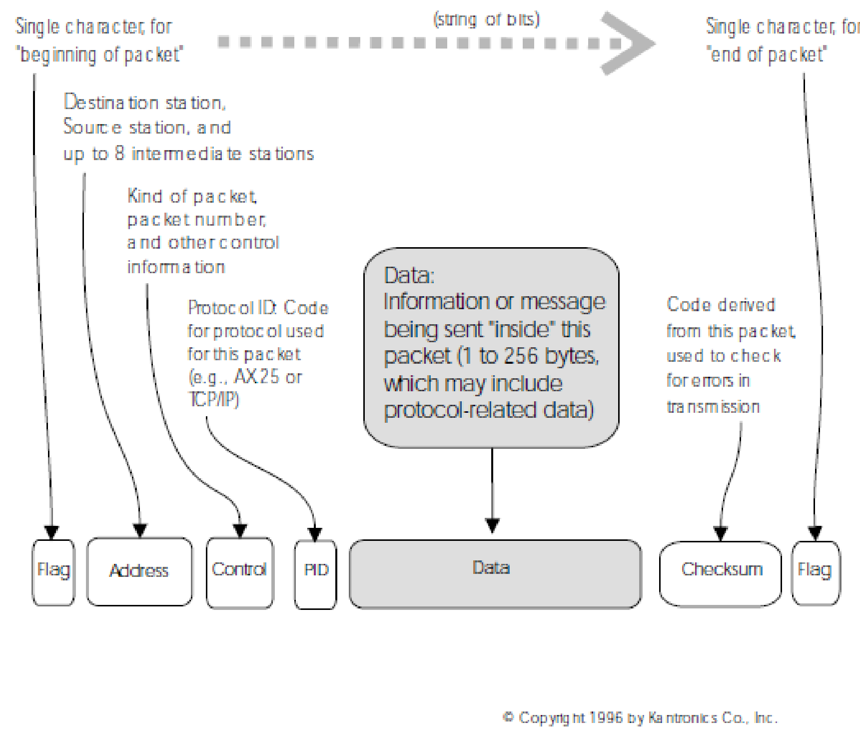
	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the second wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and

Exhibit P10– Invalidity Chart for U.S. Patent No. 8,754,780 based on Kantronics

	from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	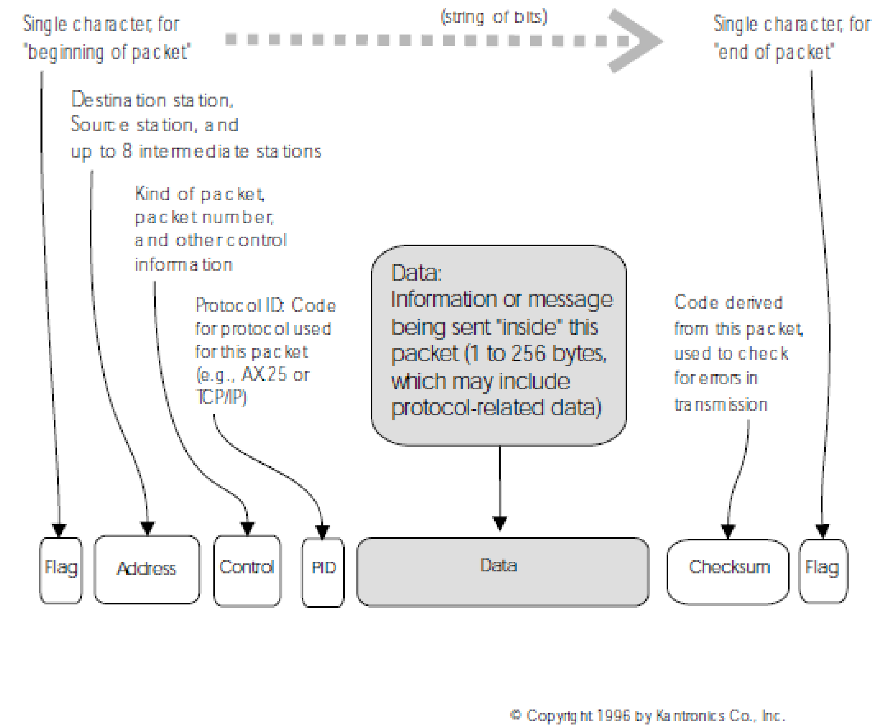 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. "Digipeating Everything we have done so far will only be heard by those within range to hear your signal. With packet radio it is possible to go farther than that. The DIGIPEAT parameter in the TNC comes defaulted ON. This makes your TNC a possible relay station, or digital repeater—digipeater, or just digi for short." Kantronics page 105

a controller operatively coupled to the transceiver and the sensor, the controller configured to control the transceiver and receive data from the sensor, the controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.

Exhibit P10– Invalidity Chart for U.S. Patent No. 8,754,780 based on Kantronics

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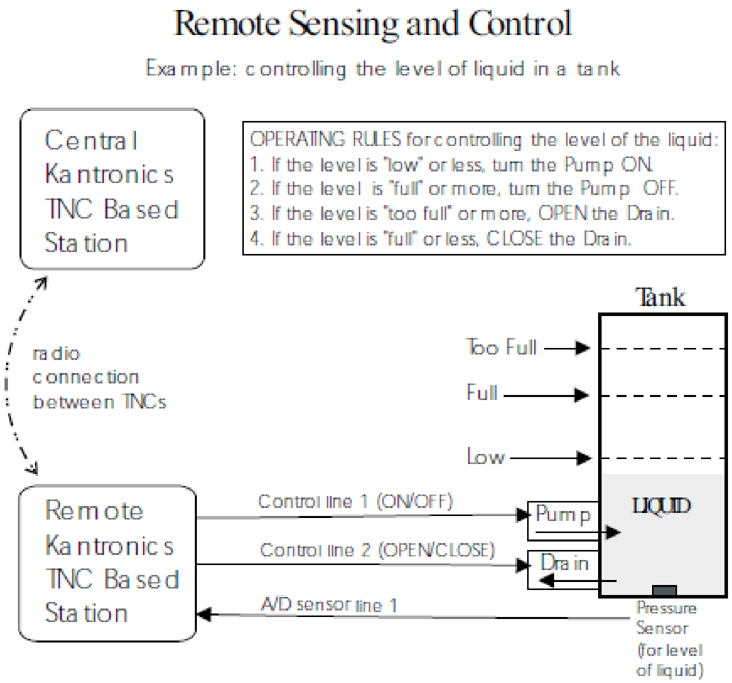

Kantronics, p. 167.
</td>
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<td>2. The device of claim 1, wherein the controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.</td>
<td>The above contentions for claim 1 are hereby incorporated by reference.</td>
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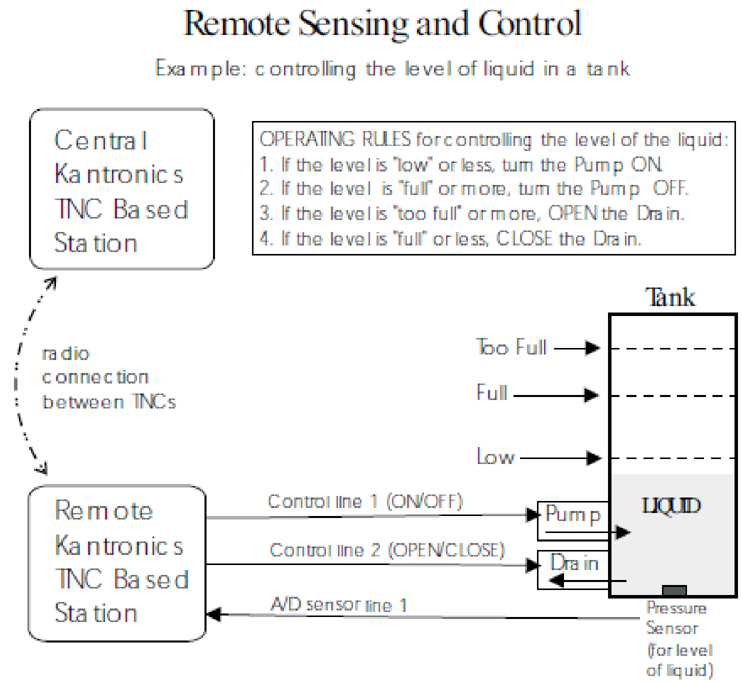
Exhibit P10– Invalidity Chart for U.S. Patent No. 8,754,780 based on Kantronics

	 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

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	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.

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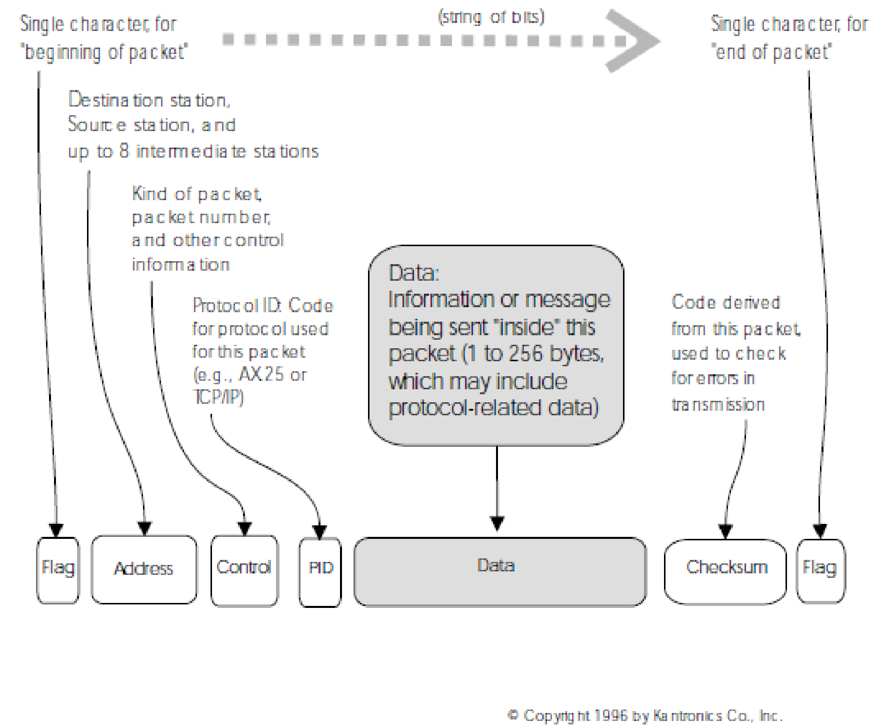
	U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
4. The device of claim 1, wherein the controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The above contentions for claim 1 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC.

	• The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

Exhibit P10– Invalidity Chart for U.S. Patent No. 8,754,780 based on Kantronics



The Organization of an AX.25 Connected Information Packet

Kantronics, p. 27.

To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"),

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	U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to

	one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to

	be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
5. The device of claim 1, wherein the controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code that identifies the transceiver.	The above contentions for claim 1 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows:

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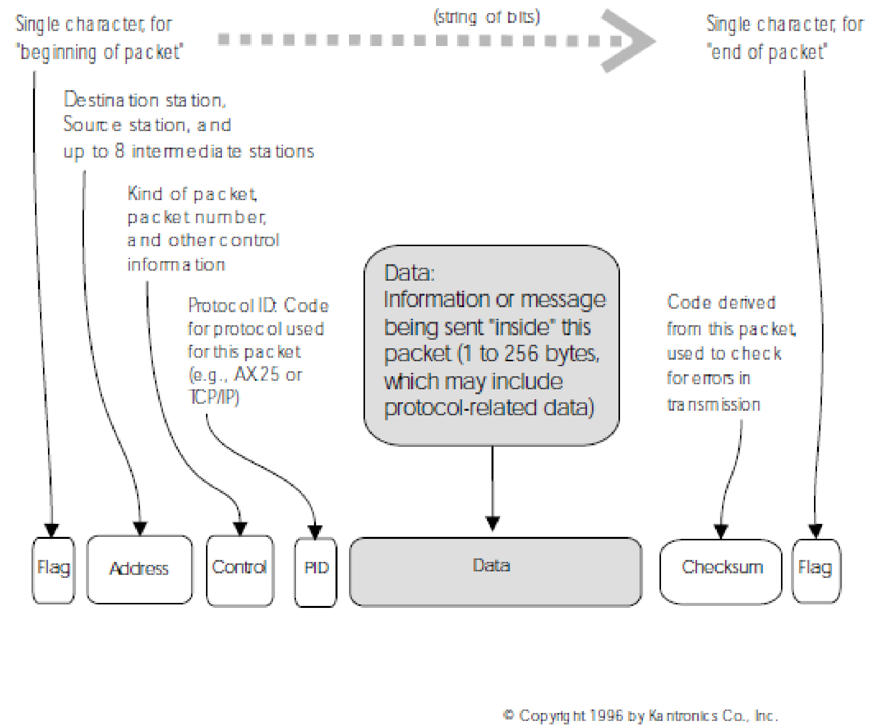
	• The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"),

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	U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to

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	one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to

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	be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
6. The device of claim 1, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the controller can implement.	The above contentions for claim 1 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows:

	• The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23.

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	the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

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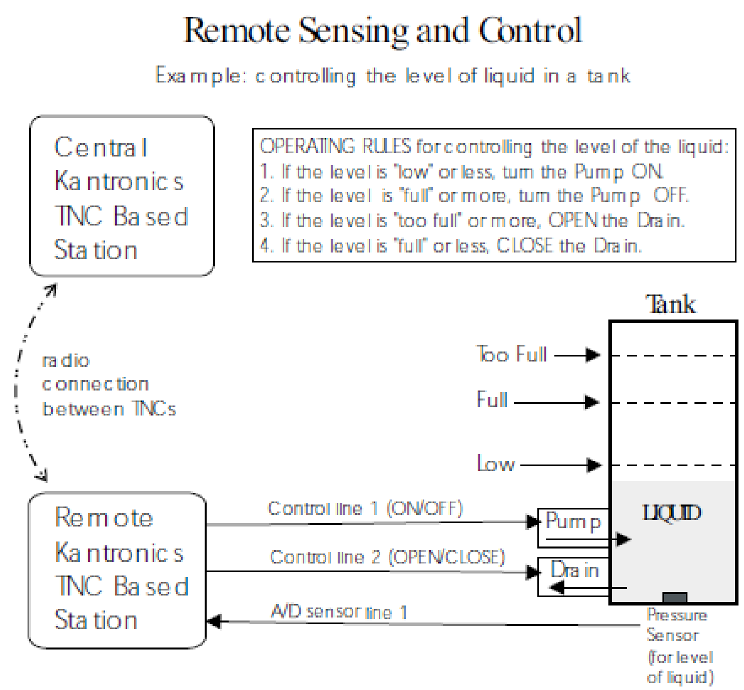
	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
7. The device of claim 1, further comprising an actuator configured to receive command data from the controller and in response implement a command.	The above contentions for claim 1 are hereby incorporated by reference. "You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored

	in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.  Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S.

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	Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses:

	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information

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	originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
8. The device of claim 1, wherein the second transceiver is nearby to the transceiver.	The above contentions for claim 1 are hereby incorporated by reference.

Exhibit P10– Invalidity Chart for U.S. Patent No. 8,754,780 based on Kantronics

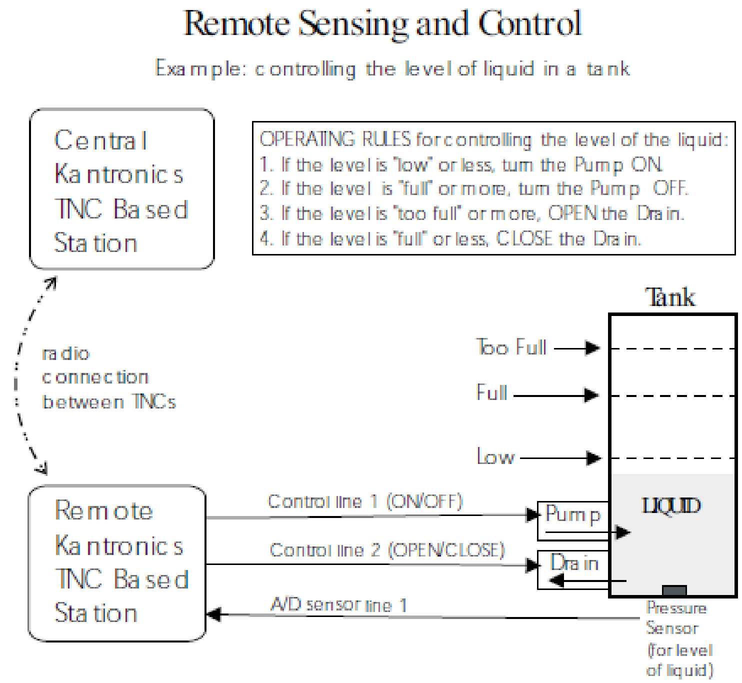
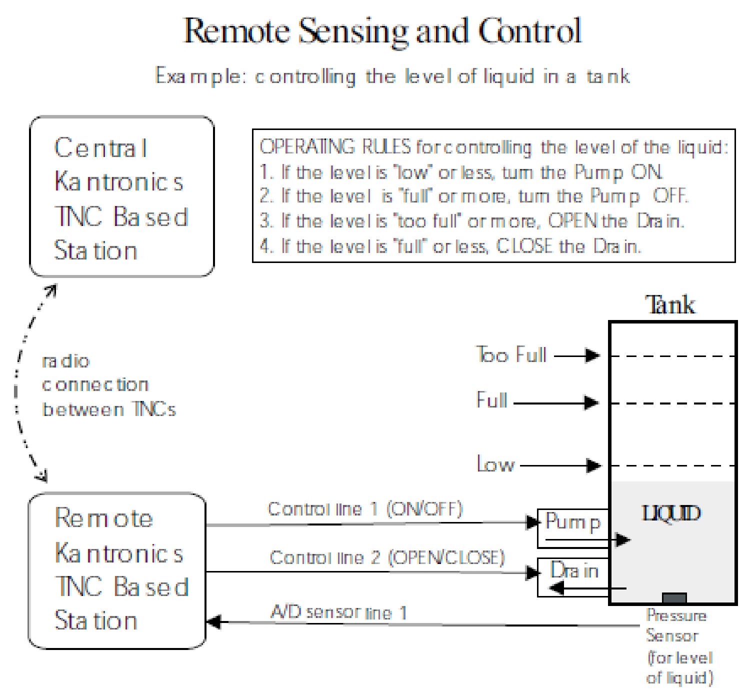
	 Kantronics, p. 167.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 8,908,842 based on Kantronics

The '842 Patent – Claim	Kantronics KPC-3 – Users Guide, 1997 ("Kantronics")
1. A device for communicating information, the device comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to

two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.



Kantronics, p. 167.

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a low-power transceiver configured to wirelessly transmit a signal comprising instruction data for delivery to a network of addressable devices;	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
an interface circuit for communicating with a central location; and	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal).

	* * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
a controller coupled to the interface circuit and to the low-power transceiver, the controller configured to establish a communication link between at least one device in the network of addressable devices and the central location using an address included in the signal, the communication link comprising one or more devices in the network of addressable, the controller further configured to receive one or more signals via the low-power transceiver and communicate information contained within the signals to the central location.	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a

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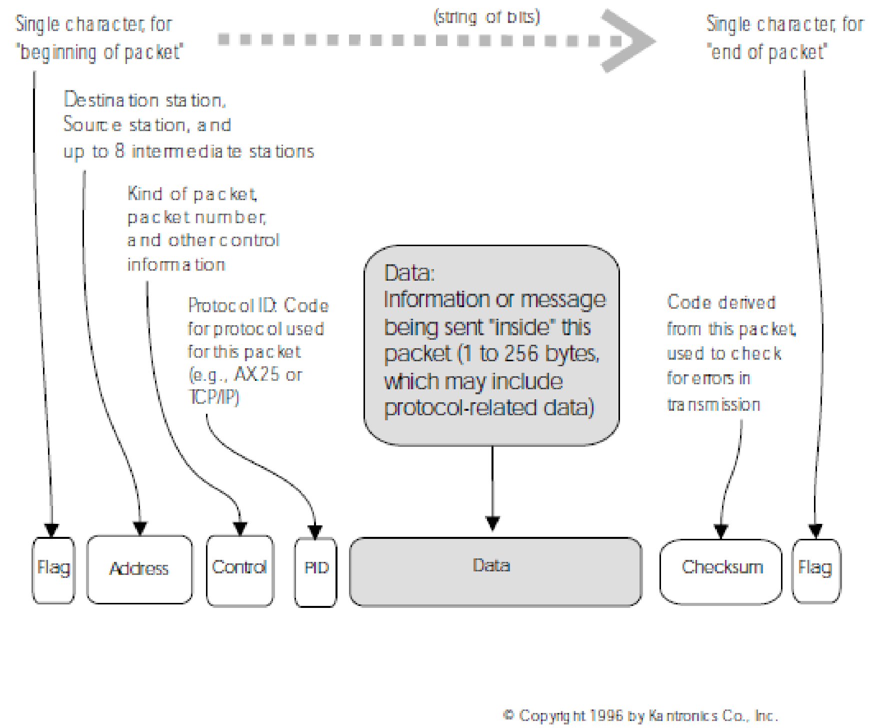
	number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
7. The device of claim 1, wherein the controller is further configured to communicate a transceiver identification code to the central location via the interface circuit.	The contentions for claim 1 are hereby incorporated by reference. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20.
9. The device of claim 1, wherein transmitted and received signals further comprise a field configured to indicate a destination device for a subsequent transmission path to follow.	The contentions for claim 1 are hereby incorporated by reference. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 8,908,842 based on Kantronics

<table>
<tr><td></td><td>

The Organization of an AX.25 Connected Information Packet

Kantronics, p. 27.</td></tr>
<tr><td></td><td></td></tr>
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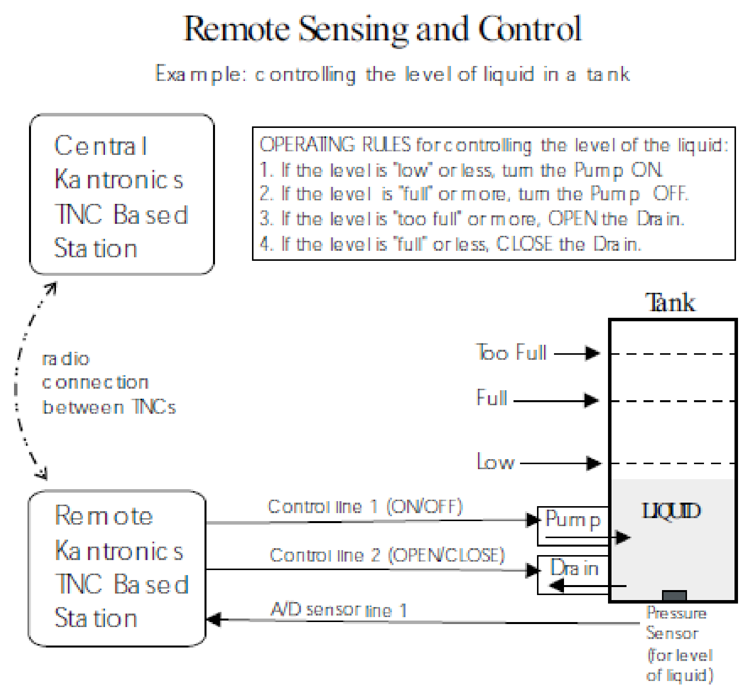
	establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL

Exhibit P10 – Invalidity Chart for U.S. Patent No. 8,908,842 based on Kantronics

	command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.
a processor; and	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and

	• a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The computer communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the opertaion of the TNC." Kantronics, p. 18-19.
a memory, the memory comprising logical instructions that when executed by the processor are configured to cause the device to:	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows: • The transceiver: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The TNC (Terminal Node Controller): (1) translates audio

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wirelessly transmit a signal comprising instruction data for delivery to a network of addressable low-power transceivers;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference.

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	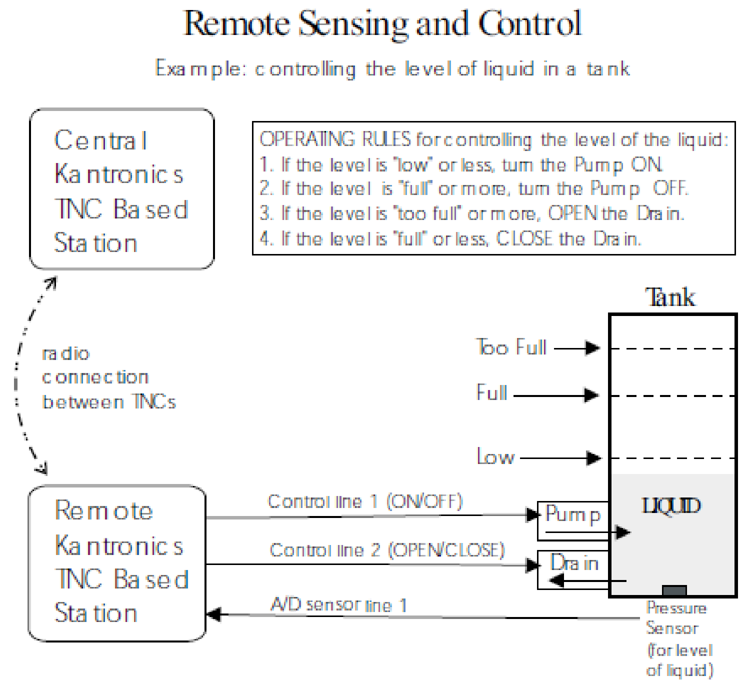 Kantronics page 167.
establish a communication link between at least one low-power transceiver in the network of addressable low-power transceivers and a central location based on an address included in the signal, the communication link comprising one or more low-power transceivers in the network of addressable low-power transceivers; and	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

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	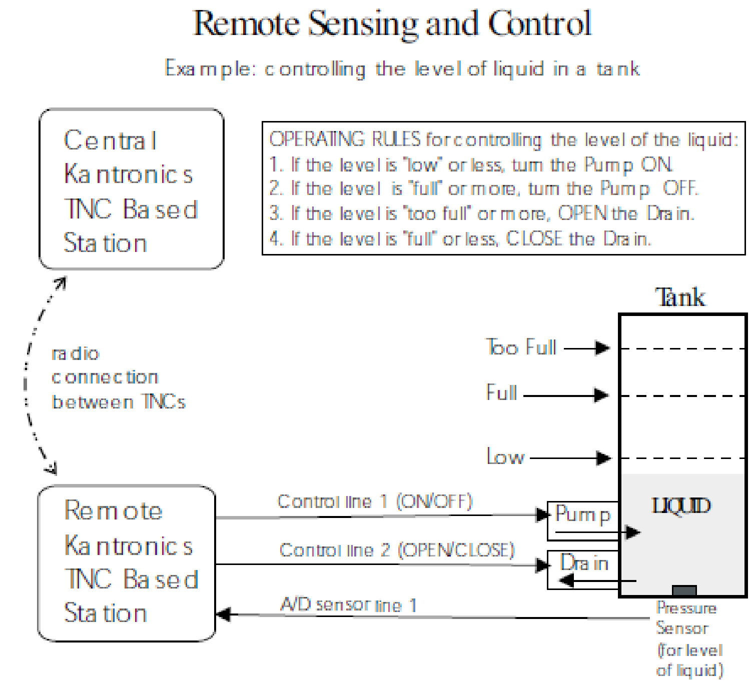 Kantronics page 167.
receive one or more low-power RF signals and communicate information contained within the signals to the central location along with a unique transceiver identification number over the communication link.	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

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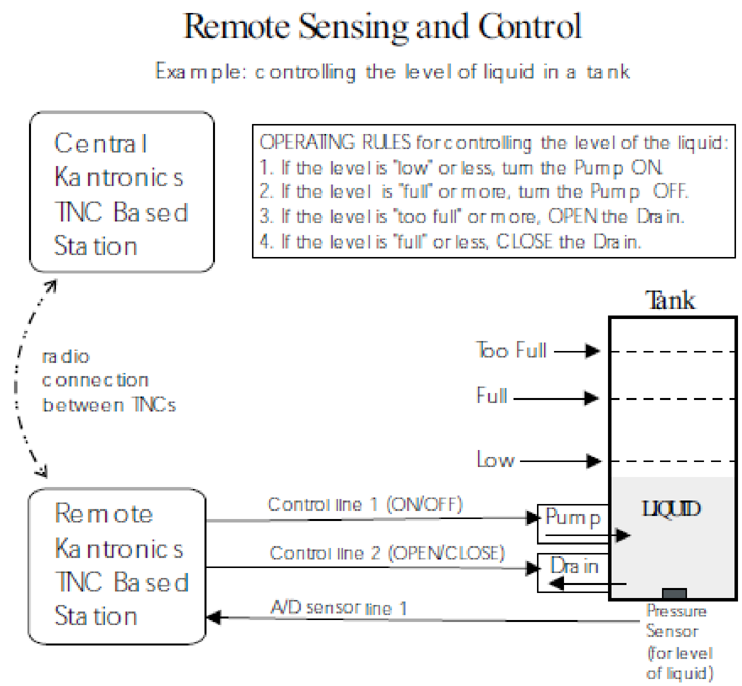
<tr><td></td><td>

Kantronics page 167.</td></tr>
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	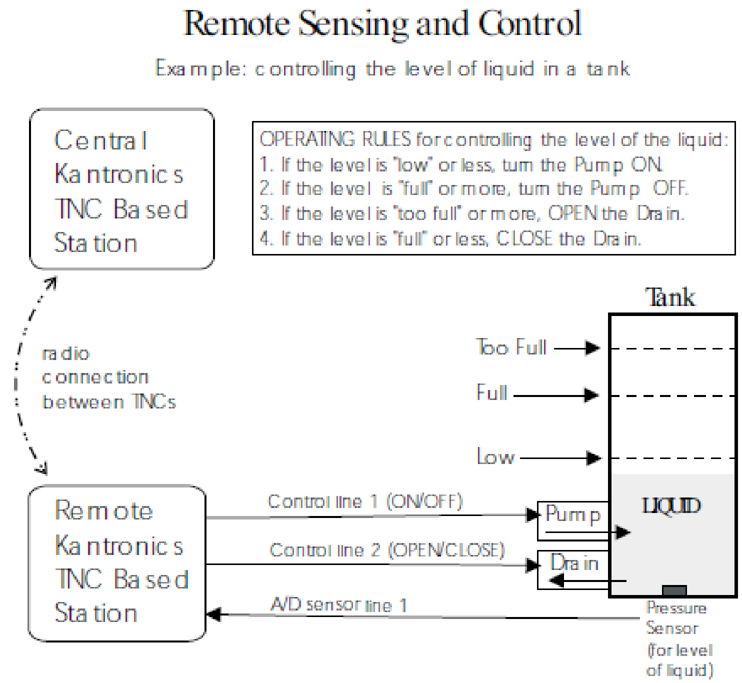 Kantronics, p. 167.
a low-power transceiver that is configured to wirelessly receive a signal including an instruction data from a remote device;	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows:

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	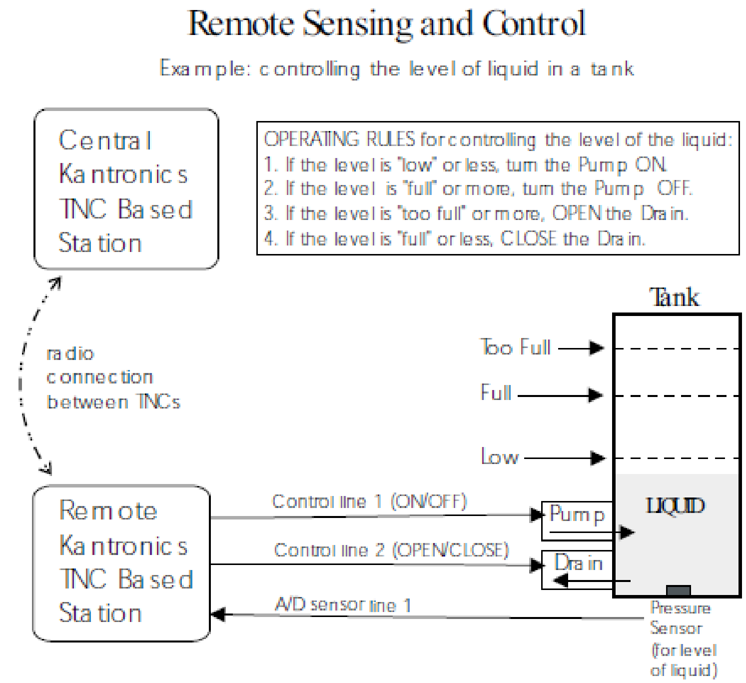 Kantronics, p. 167.
an interface circuit for communicating with a central location;	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows:

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	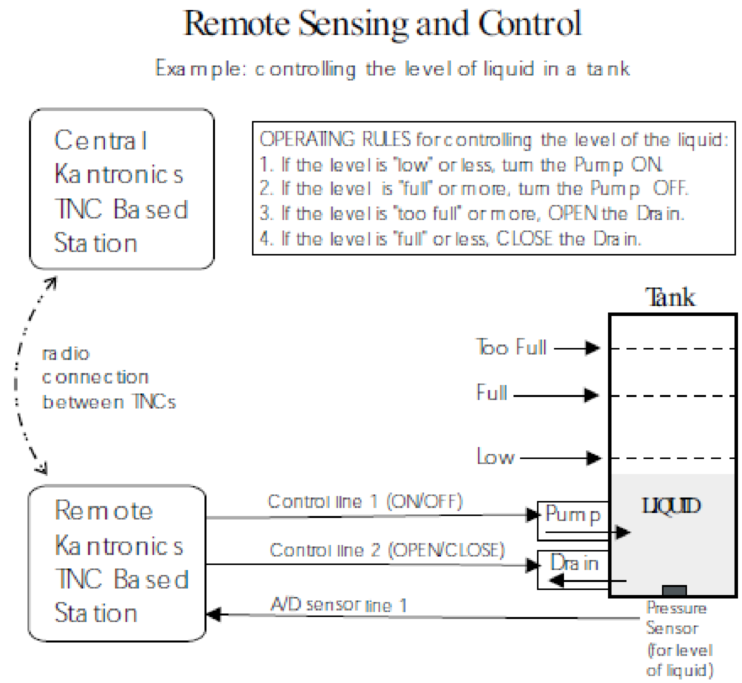 Kantronics, p. 167.
a controller coupled to the interface circuit and to the low-power transceiver, the controller being configured to establish a communication link between the remote device and the central location using address-indicative data included in the signal;	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows:

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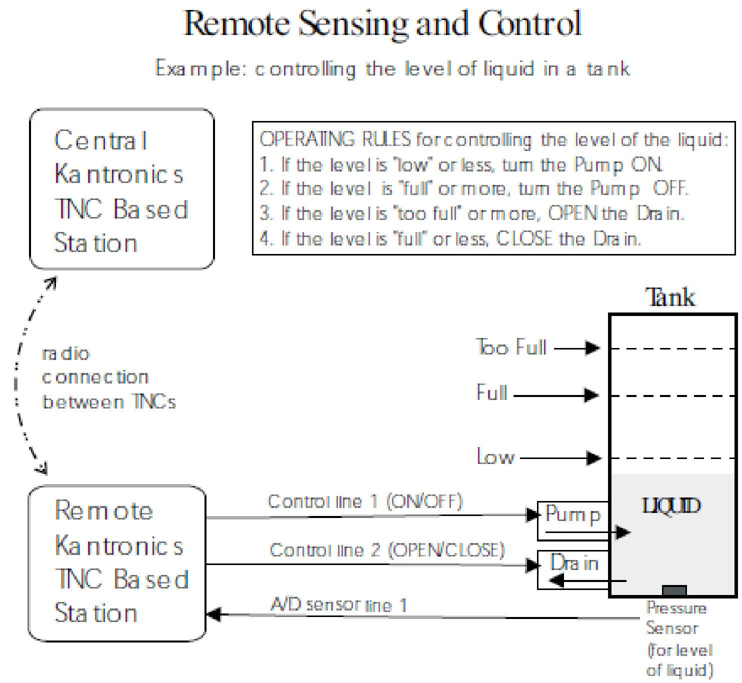
Exhibit P10 – Invalidity Chart for U.S. Patent No. 8,908,842 based on Kantronics

	 Kantronics, p. 167.
the controller further configured to receive one or more data signals from the central location via the interface circuit and communicate information contained within the signals to the remote device.	"**Three Basic Components of a Pacekt Radio Station** A packet radio station has three basic parts: • a transceiver, with an antenna • a device called a TNC (i.e., Terminal Node Controller), which is a combination modem and special-purpose micro-computer, and • a general purpose computer (or a terminal). * * * The three parts of a packet radio station work together as follows:

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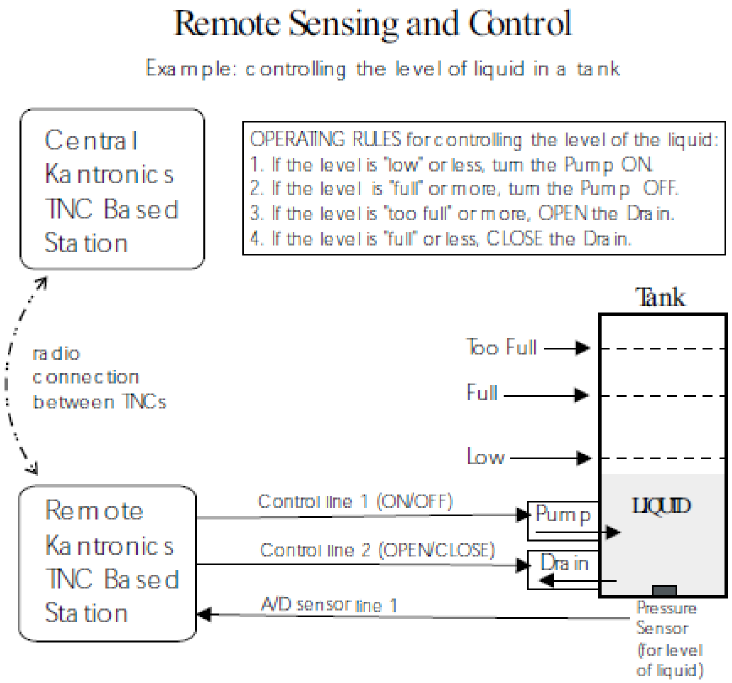
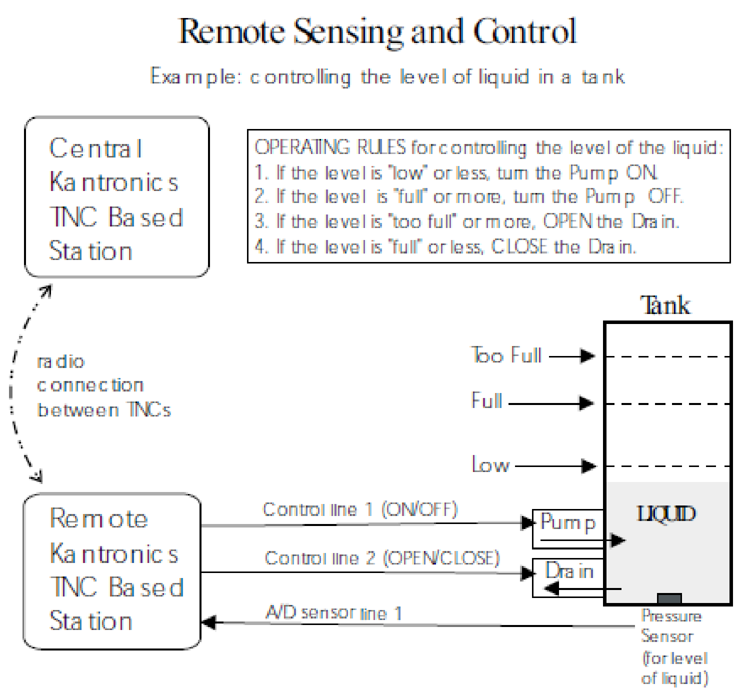
	 Kantronics, p. 167.

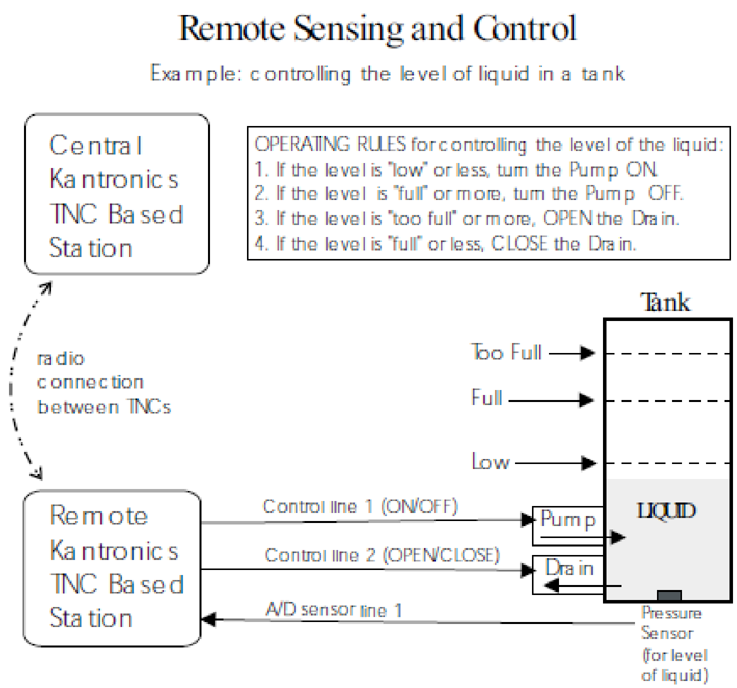
Exhibit P10 – Invalidity Chart for U.S. Patent No. 6,914,893 based on Kantronics

The '893 Patent – Claim	Kantronics KPC-3 – Users Guide, 1997 ("Kantronics")
1. A system for communicating commands and sensed data between remote devices, the system comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to

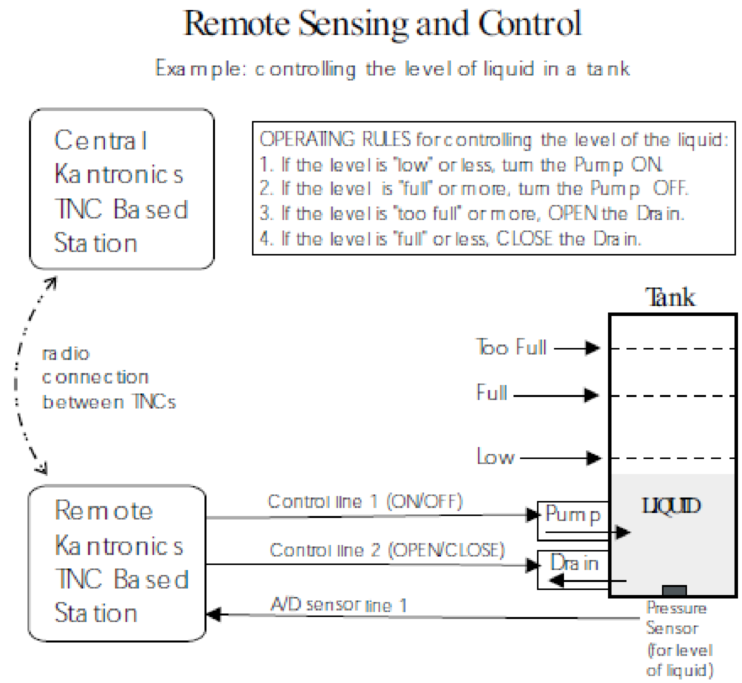
Exhibit P10 – Invalidity Chart for U.S. Patent No. 6,914,893 based on Kantronics

	two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

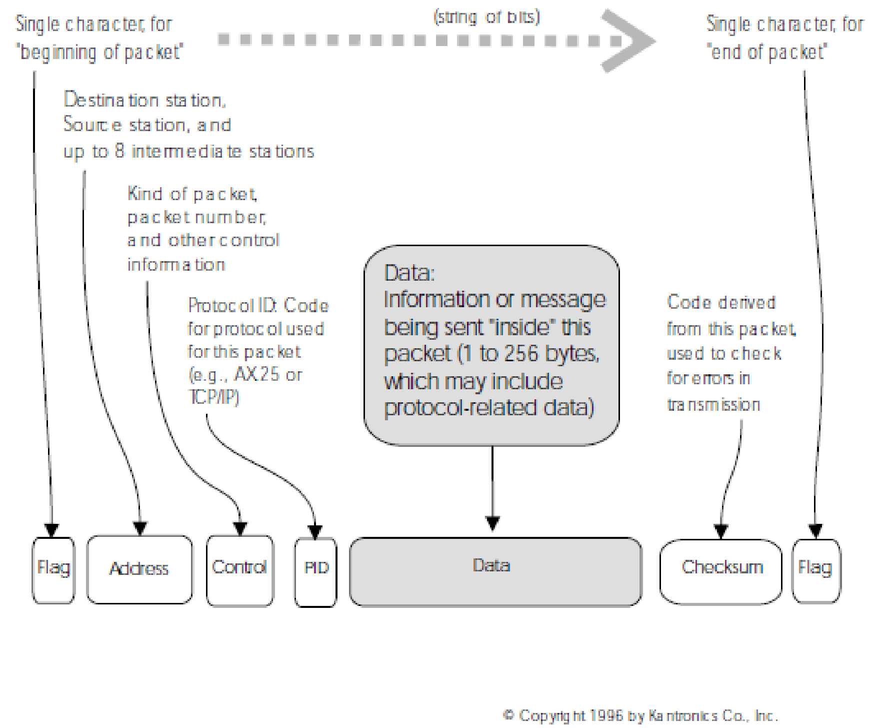
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in

	multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages;	"The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and fromyour antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.

	 Kantronics, p. 167.
wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio

	signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.

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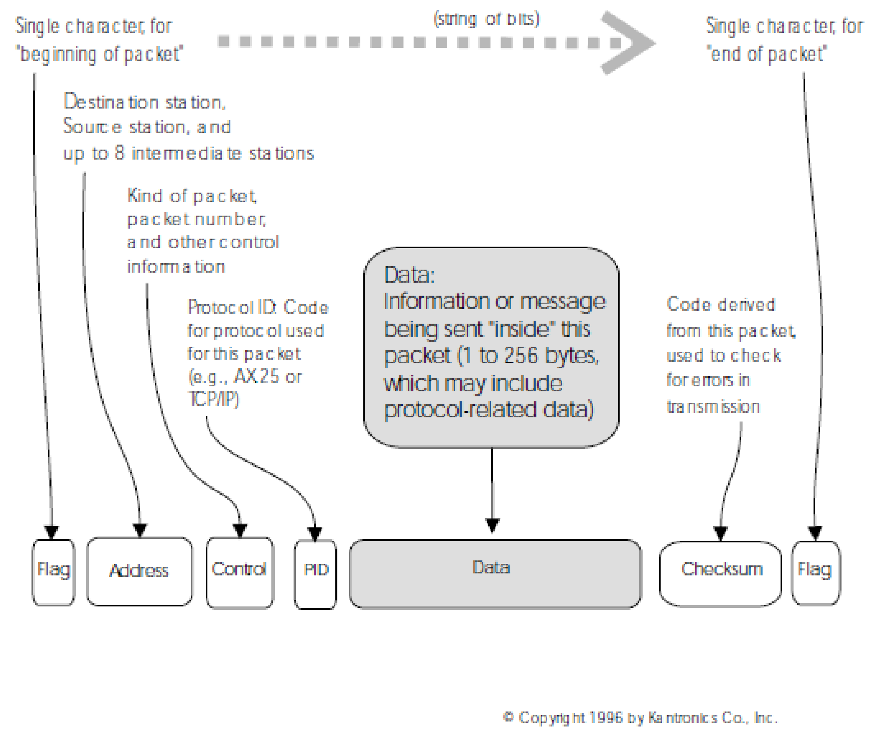
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

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	For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the

	length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one

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	network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

	In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

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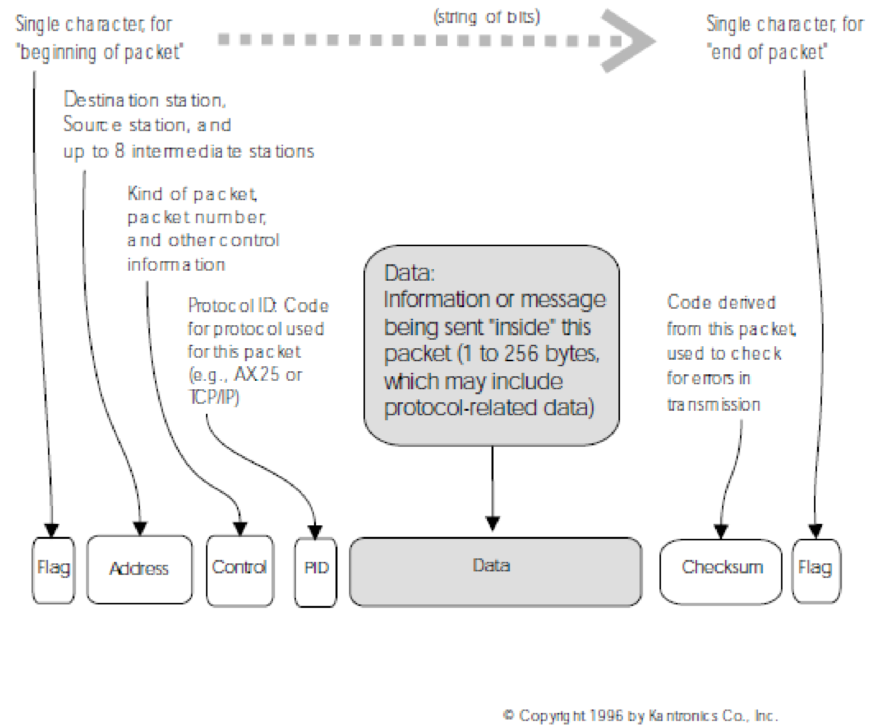
sender address comprising the unique address of the sending transceiver;	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.

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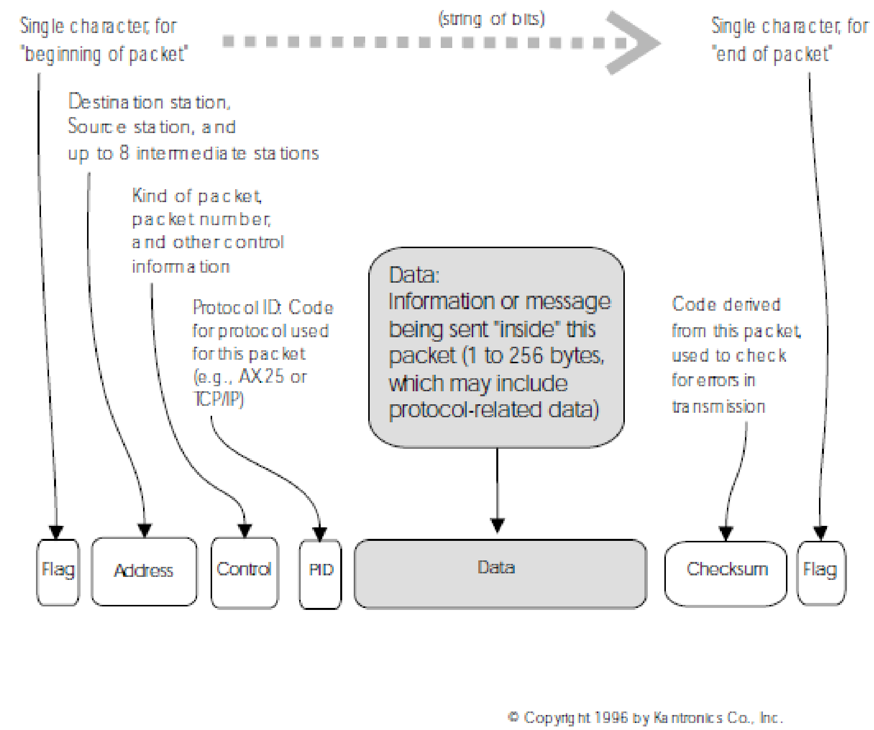
a command indicator comprising a command code;	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"),

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	U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to

	one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to

	be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

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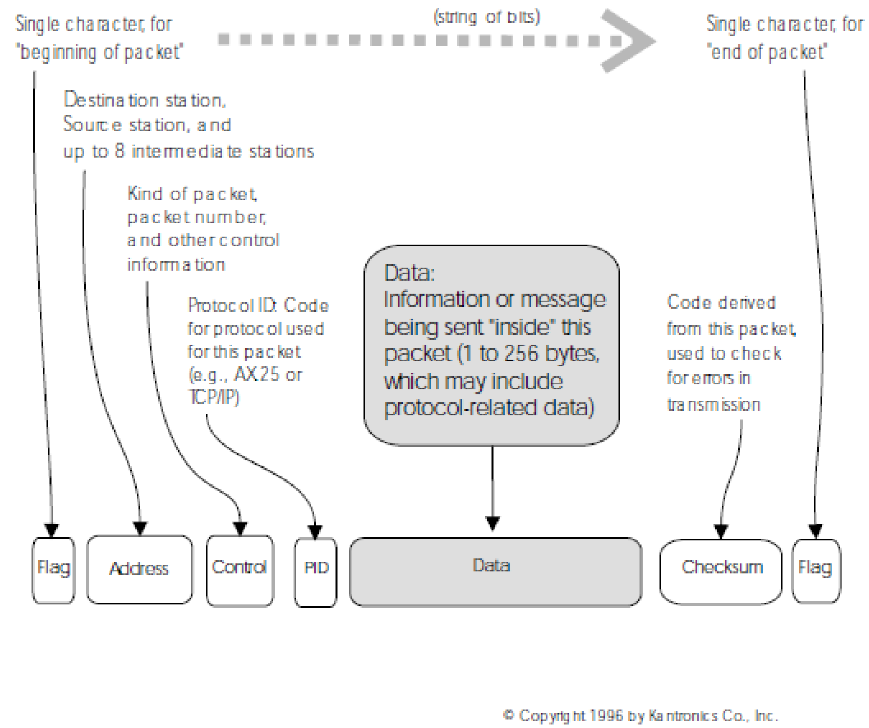
at least one data value comprising a scalable message; and	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

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	length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one

	network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

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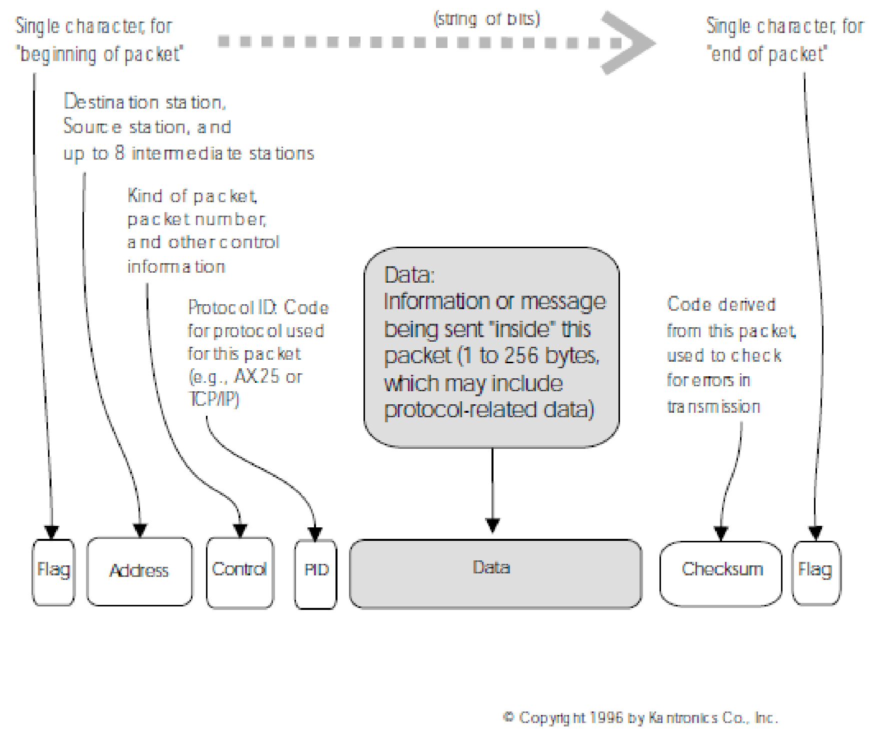
an error detector comprising a redundancy check error detector; and	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.

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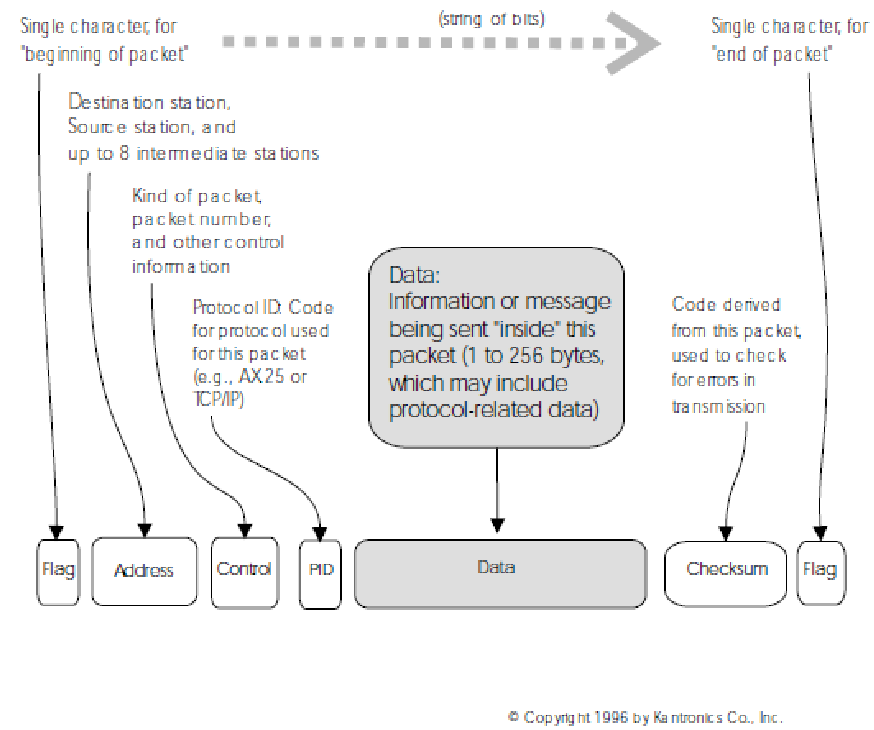
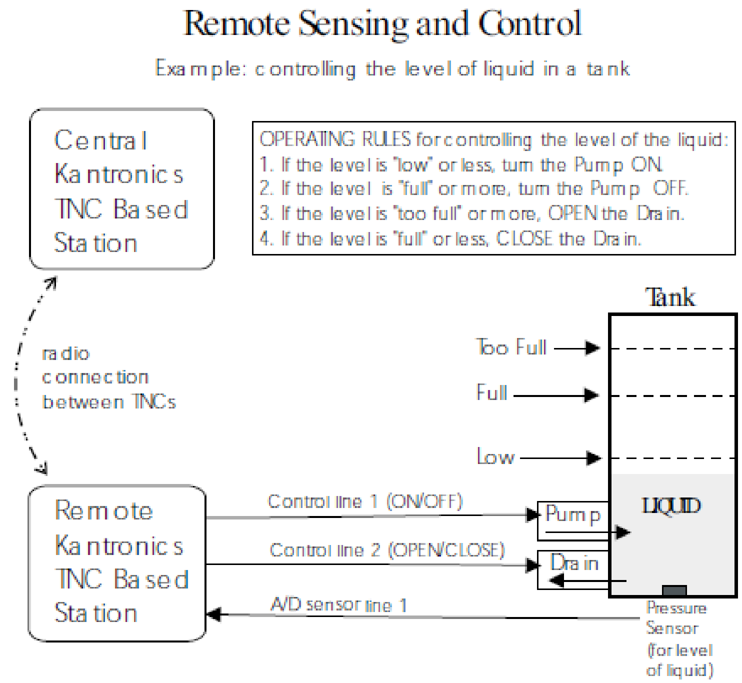
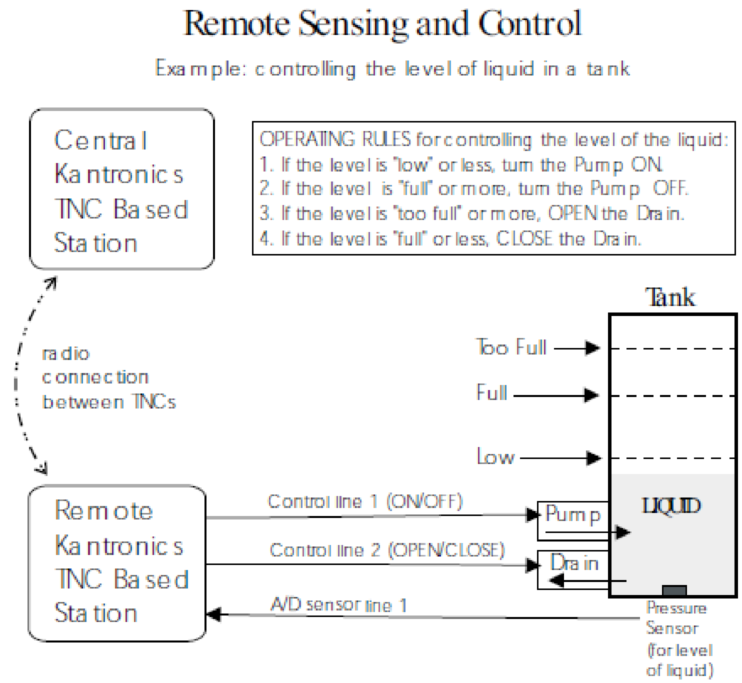
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages.	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
2. The system of claim 1, wherein the plurality of transceivers further comprise at least one integrated transceiver, wherein the integrated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference.

one of the plurality of transceivers; and	 Kantronics, p. 167.

a sensor detecting a condition and outputting a sensed data signal to the transceiver.	 Kantronics, p. 167.
3. The system of claim 2, wherein the at least one integrated transceiver receives the preformatted command message requesting sensed data, confirms the receiver address as its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet, wherein the packets are equal to the number of segments.	The above contentions for claim 2 are hereby incorporated by reference.

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	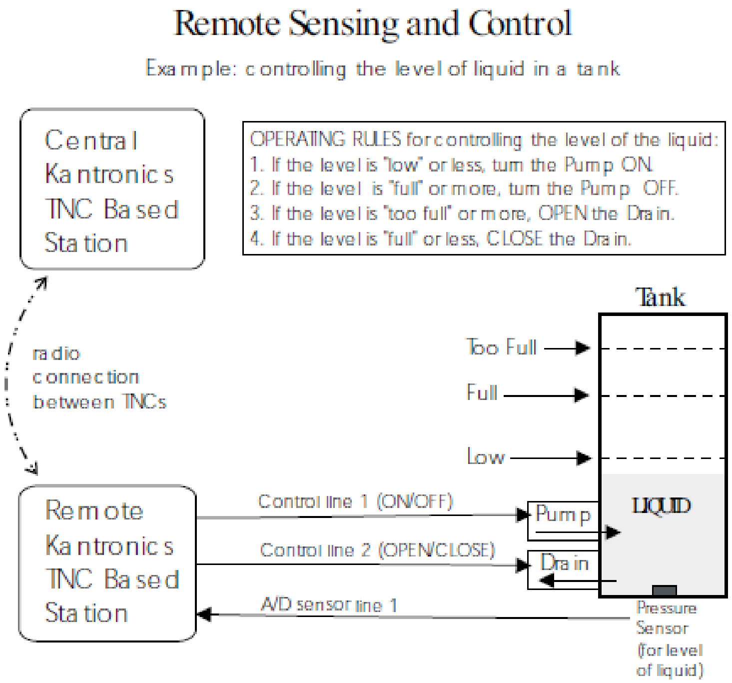 Kantronics, p. 167. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which

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	add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired,

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	control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset,

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	or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing:

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	Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
10. The system of claim 1, wherein the plurality of transceivers further comprise at least one actuated transceiver, wherein the actuated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference.

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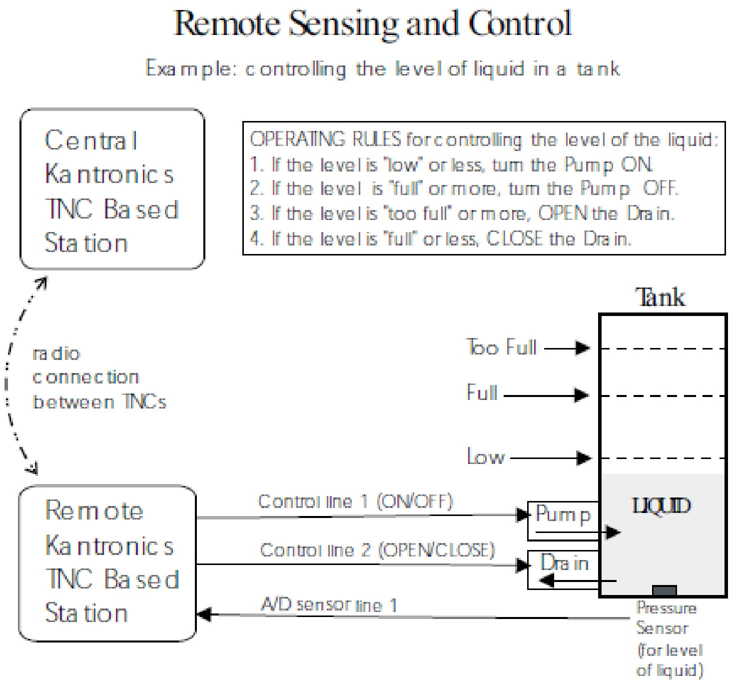
one of the plurality of transceivers;	 Kantronics, p. 167.

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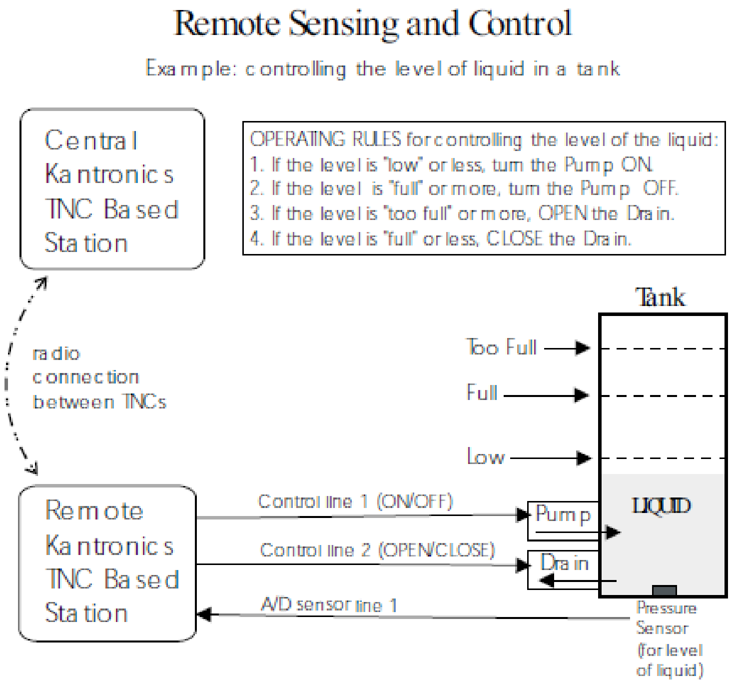
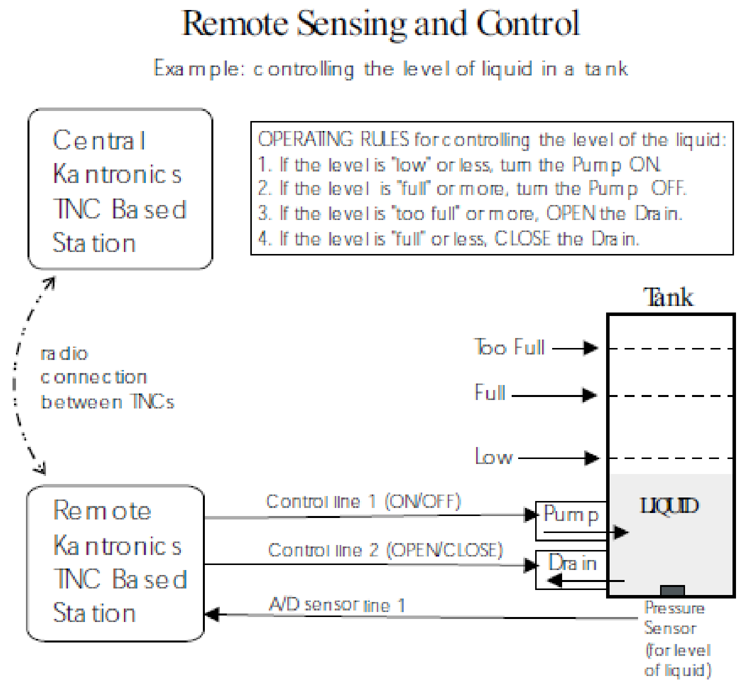
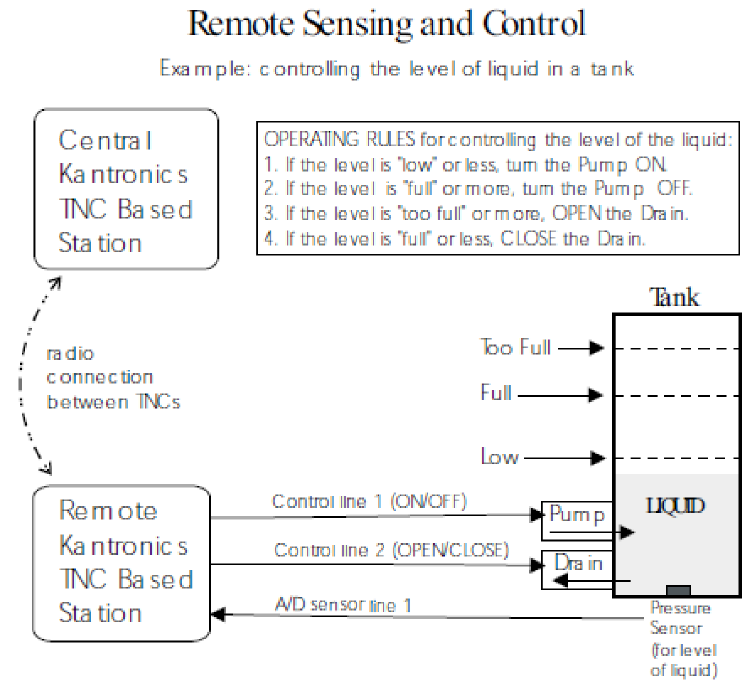
a sensor detecting a second condition and outputting a sensed data signal to the transceiver; and	 Kantronics, p. 167.

<table>
<tr>
<td>an actuator controlling a third condition and receiving control signals from the transceiver.</td>
<td>

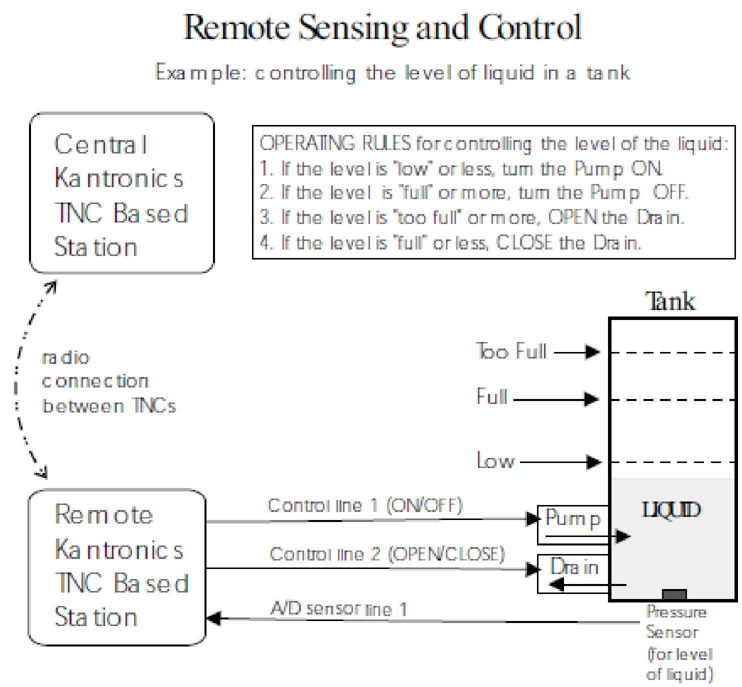
Kantronics, p. 167.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>17. A system for communicating commands and sensed data between remote devices, the system comprising:</td>
<td>"Remote Sensing and Control
You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows:
remote control of another TNC: from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.</td>
</tr>
</table>

	• **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

<table>
<tr><td></td><td>

Kantronics, p. 167.</td></tr>
<tr><td>a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;</td><td>"Remote Sensing and Control
You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows:
remote control of another TNC: from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out.</td></tr>
</table>

	For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

	 Kantronics, p. 167.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages, wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

	• **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

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	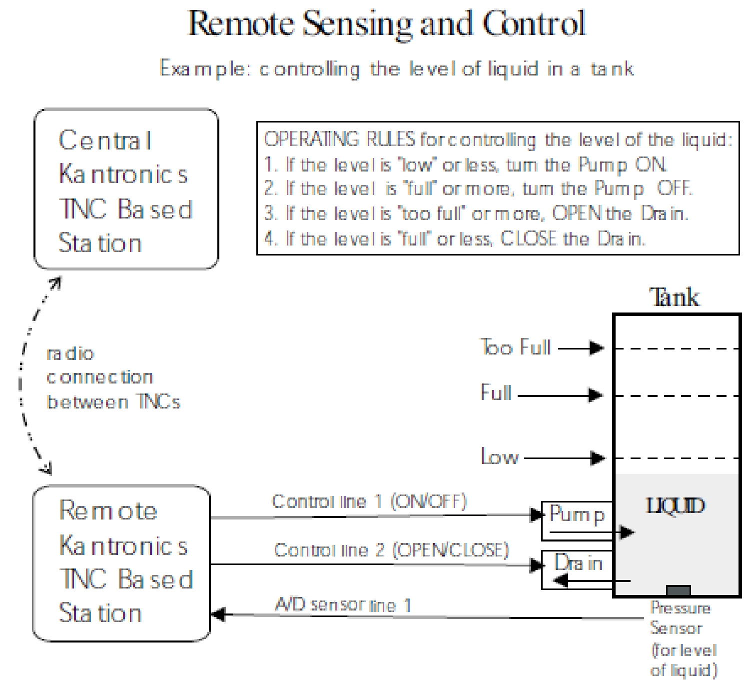 Kantronics, p. 167. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and fromyour antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you

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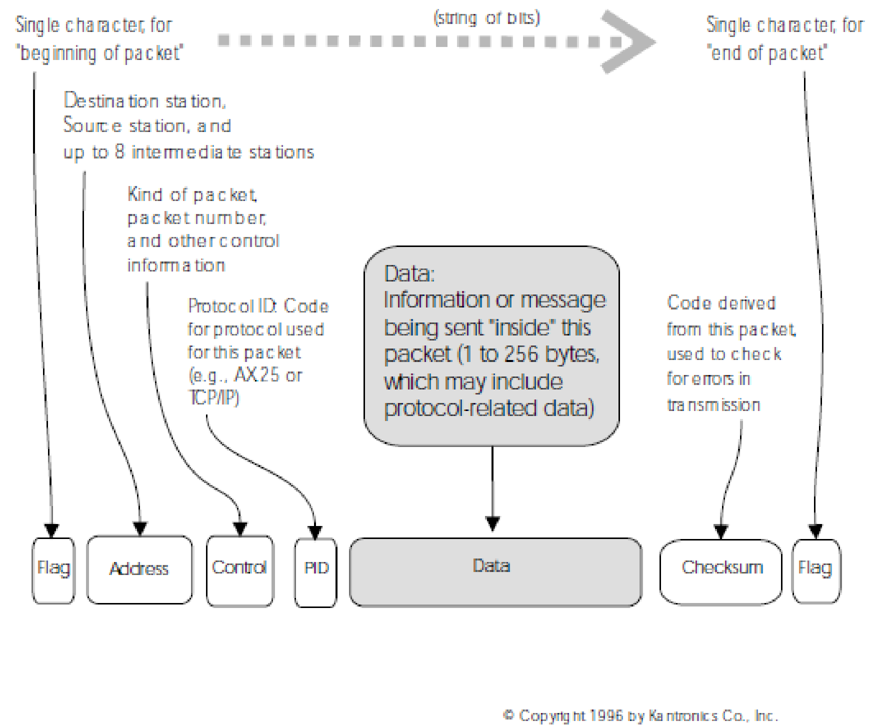
	can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26.

	In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43.

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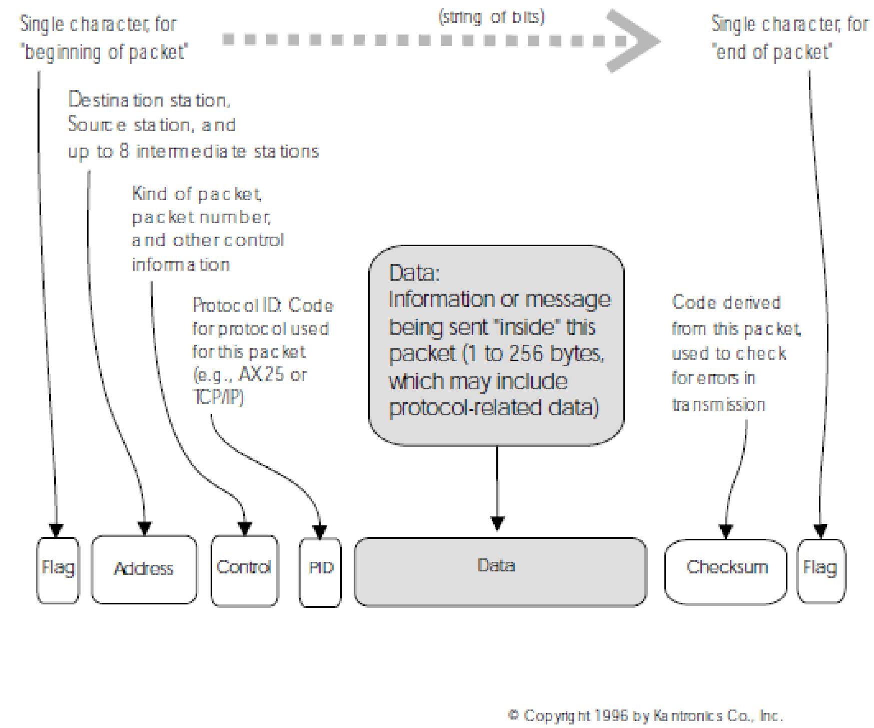
	'252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting

	in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

sender address comprising the unique address of the sending transceiver;	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.

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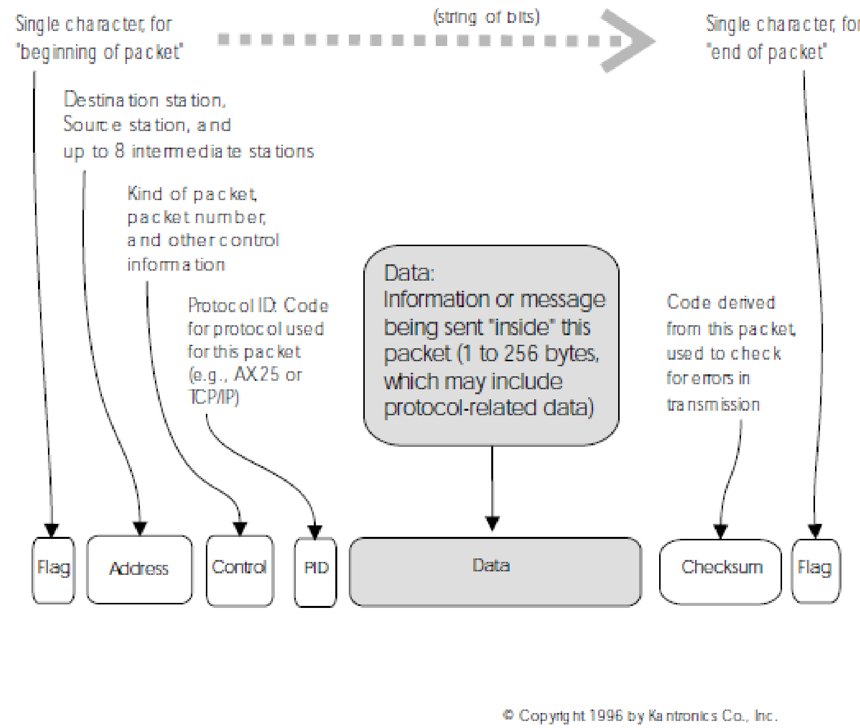
a command indicator comprising a command code;	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"),

	U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to

	one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to

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	be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

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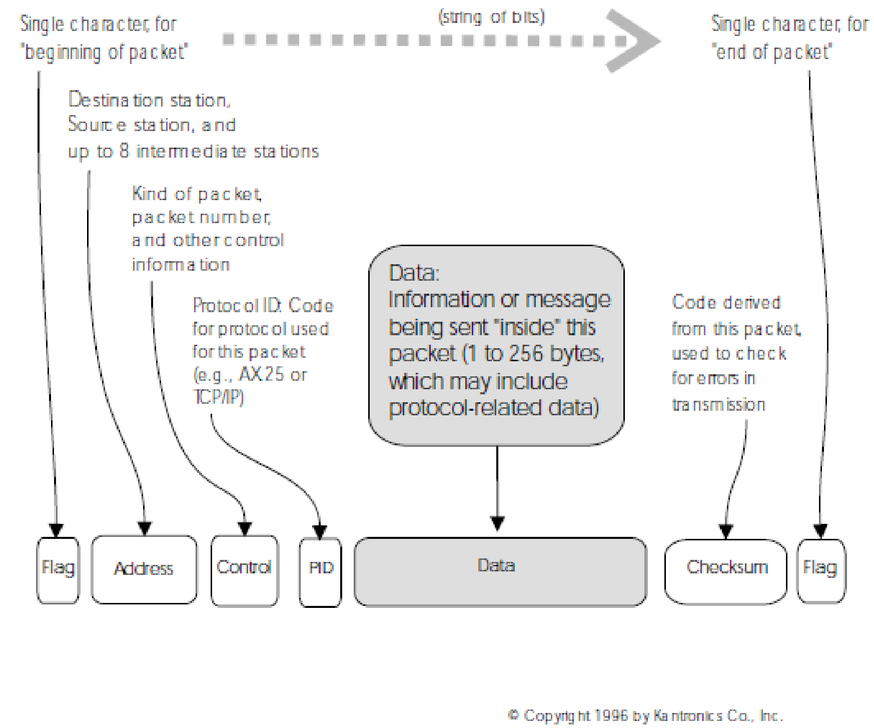
at least one data value comprising a scalable message; and	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

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	length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one

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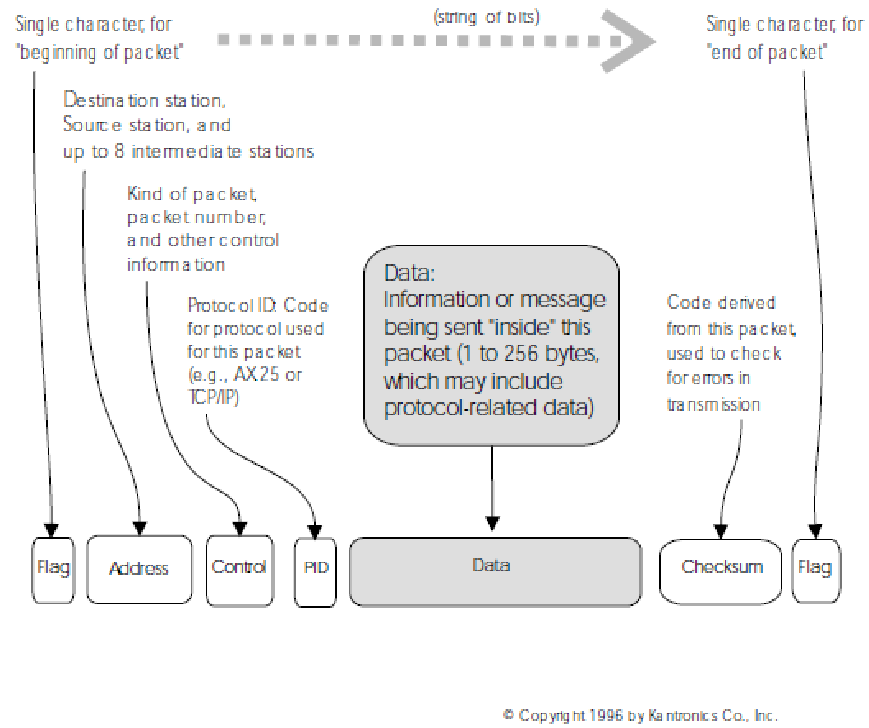
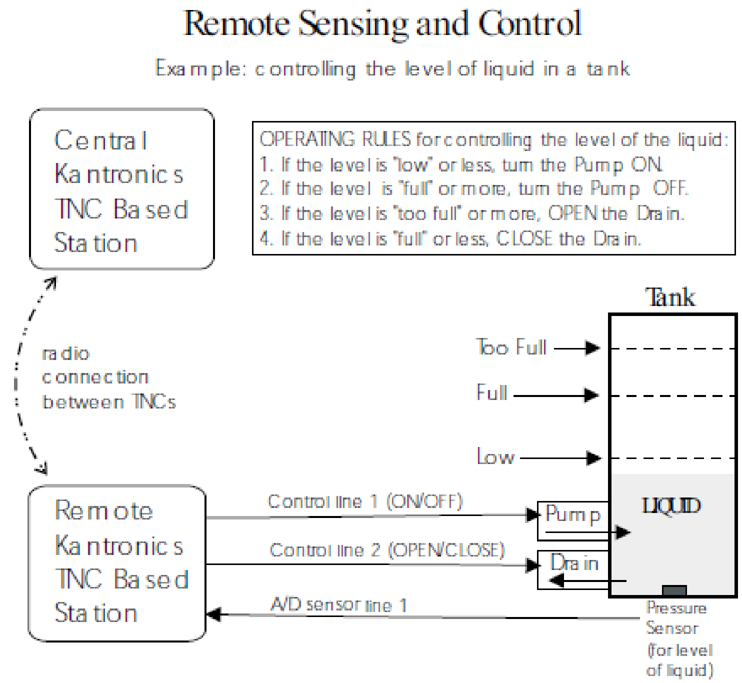
	network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

	In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

an error detector comprising a redundancy check error detector;	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages; and	

	 Kantronics, p. 167.
wherein at least one of the plurality of transceivers further sends preformatted emergency messages.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the

	machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
18. The system of claim 17, wherein the controller maintains periods of silence by not sending the preformatted command messages during predetermined time periods; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the

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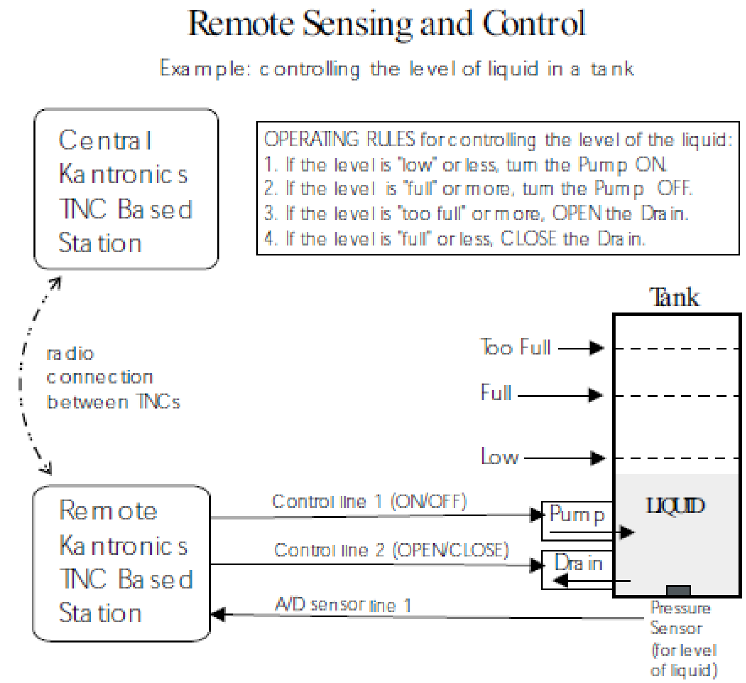
	machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
wherein the at least one of the plurality of transceivers detects a period of silence and sends the preformatted emergency message during the period of silence.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the

	machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
37. A method of communicating between geographically remote devices, the method comprising:	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

	• **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long (about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.

	 Kantronics, p. 167.
sending a message;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

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	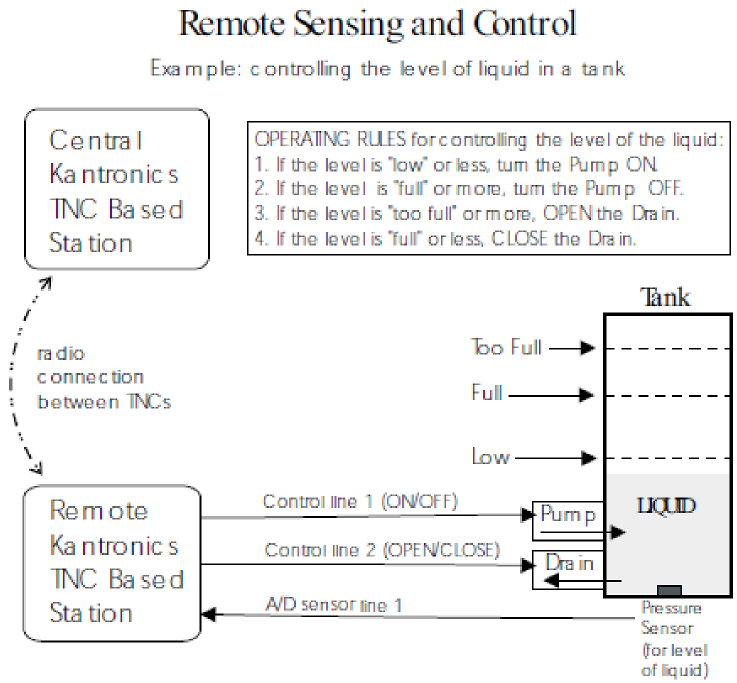 Kantronics, p. 167.
receiving the message at one or more of the remote devices;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

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	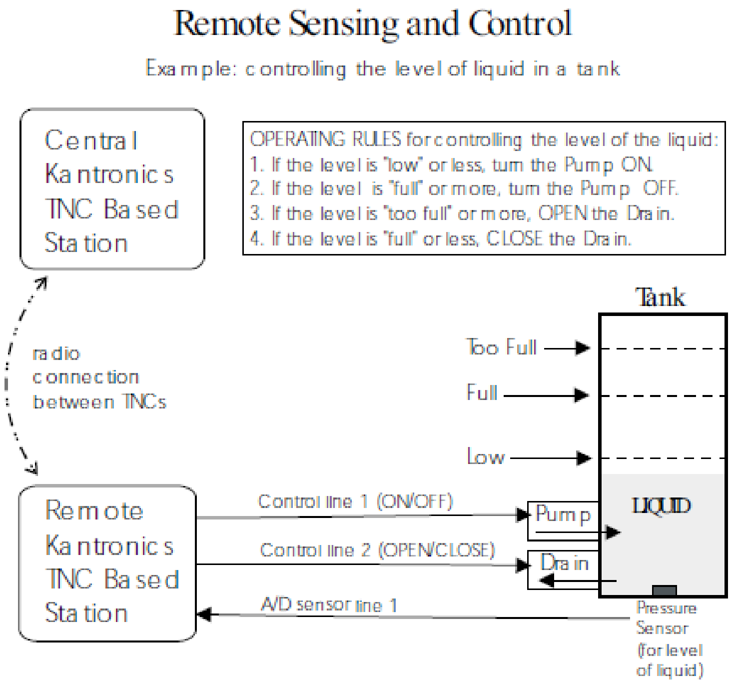 Kantronics, p. 167.
processing the message;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

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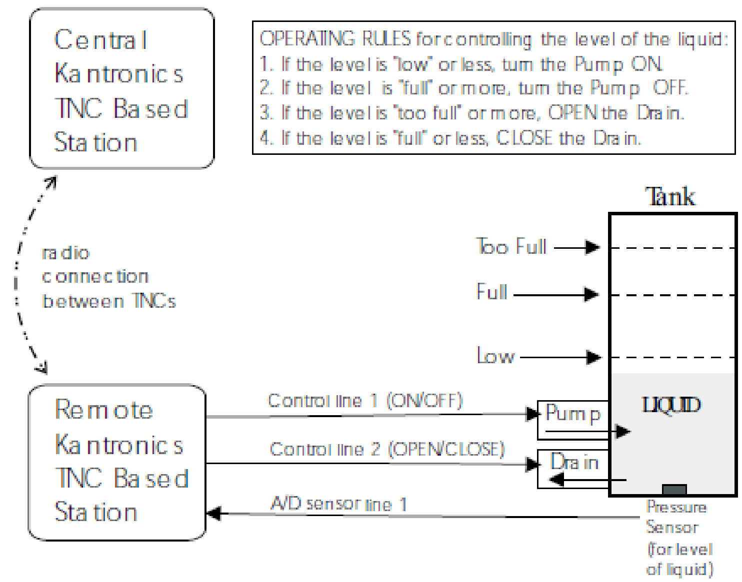
	Remote Sensing and Control Example: controlling the level of liquid in a tank  Kantronics, p. 167.
preparing a response message;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

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	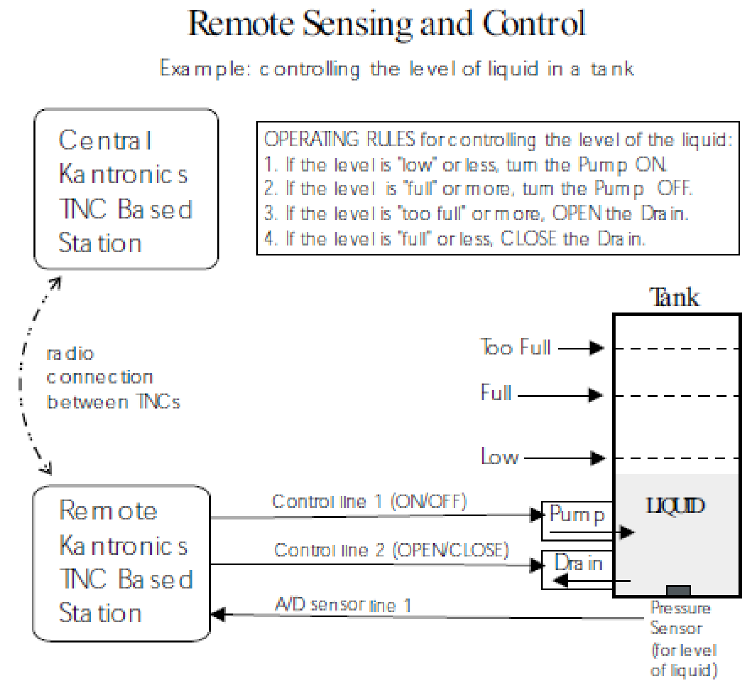 Kantronics, p. 167.
receiving the response message;	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

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	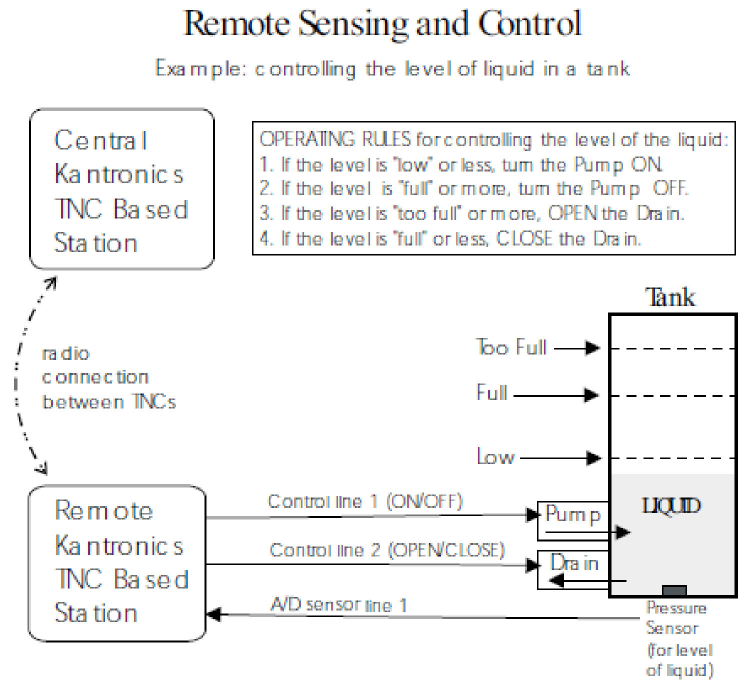 Kantronics, p. 167.
processing the response message	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference.

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	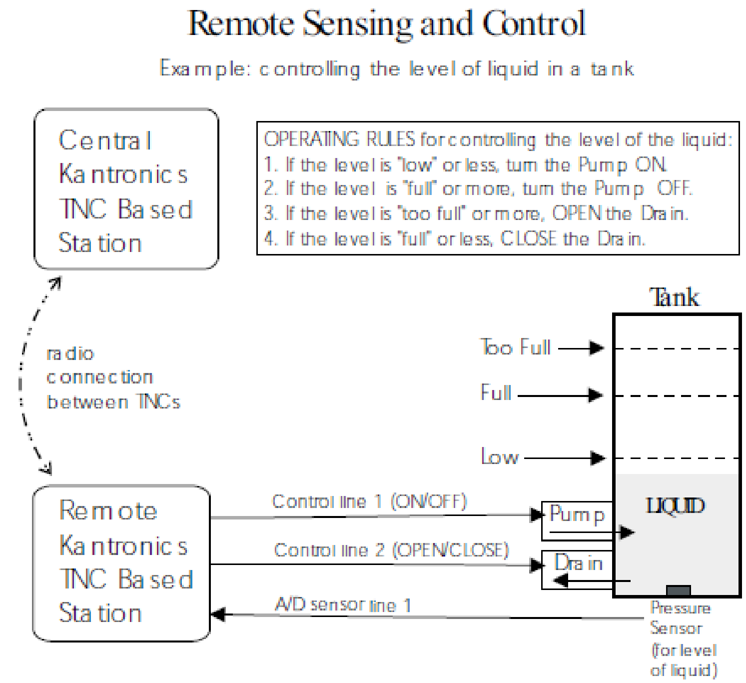 Kantronics, p. 167.
wherein all messages comprise at least one packet, the packet having a predetermined format;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio

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	signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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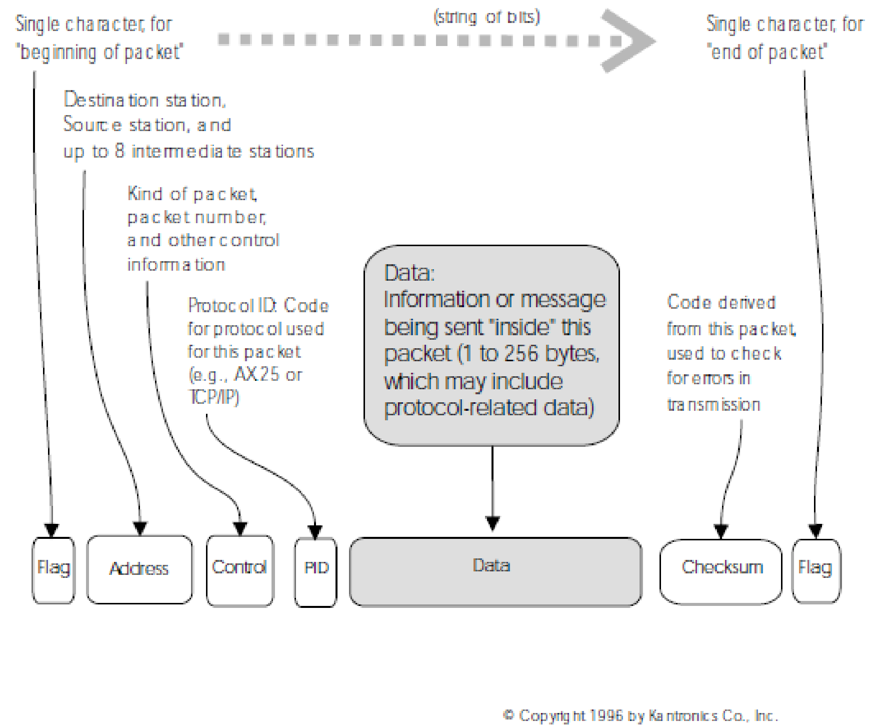
<table>
<tr><td></td><td>

The Organization of an AX.25 Connected Information Packet

Kantronics, p. 27.</td></tr>
<tr><td>wherein the predetermined format comprises:</td><td></td></tr>
<tr><td>a receiver address comprising a scalable address of the at least one of the intended receiving remote devices;</td><td>“You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control.” Kantronics, p. 166.

“The three parts of a packet radio station work together as follows:
• The transceiver: (1) sends and receives radio signals to and</td></tr>
</table>

	from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	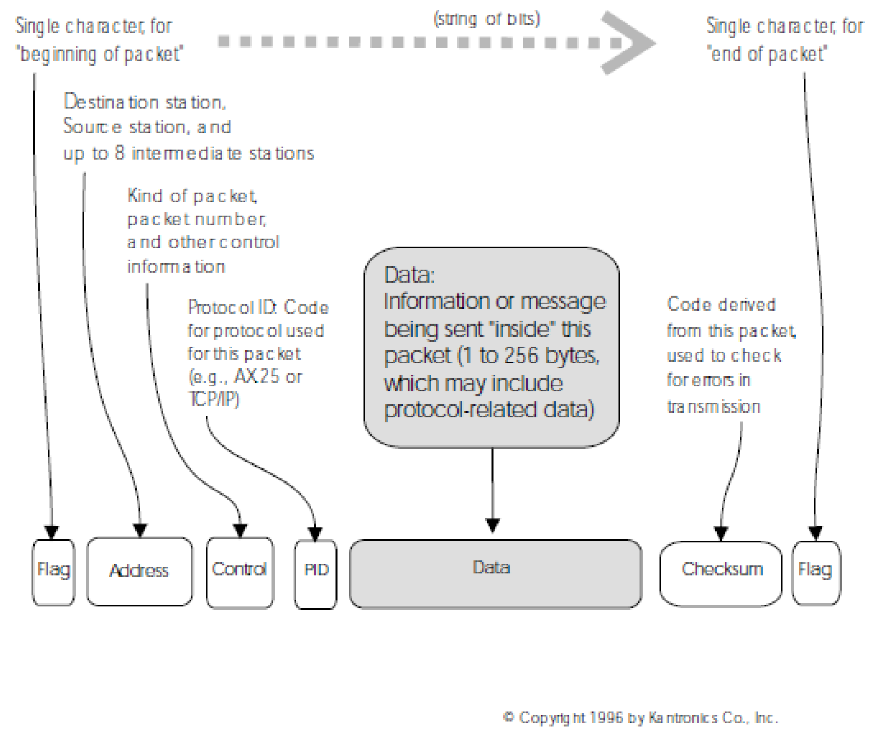 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

	For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the

Exhibit P10 – Invalidity Chart for U.S. Patent No. 6,914,893 based on Kantronics

	length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one

	network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

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	In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a sender address comprising an unique address of the sender;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth

	between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	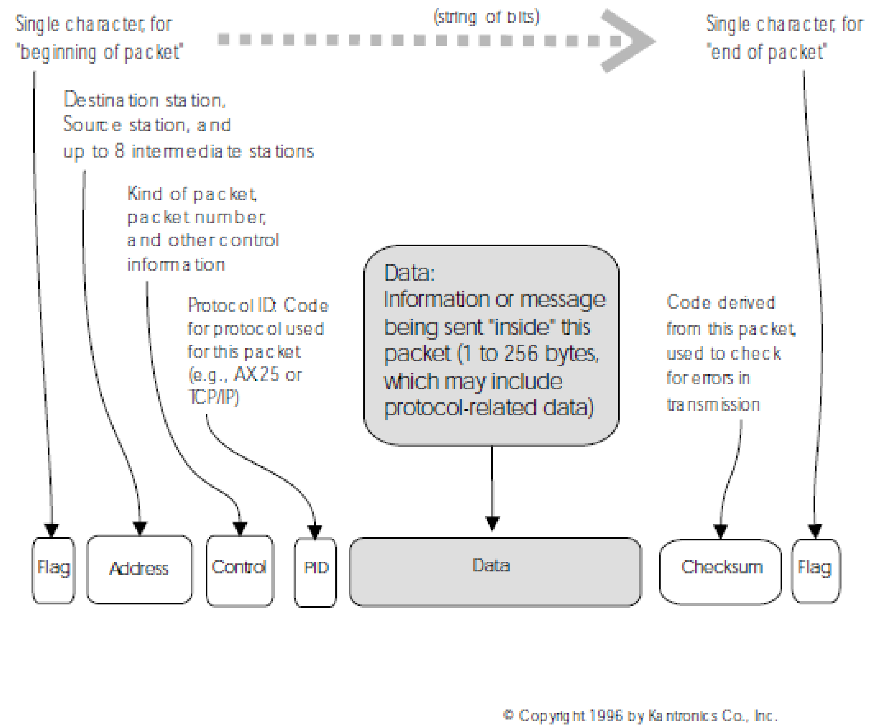 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
a command indicator comprising a command code;	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth

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	between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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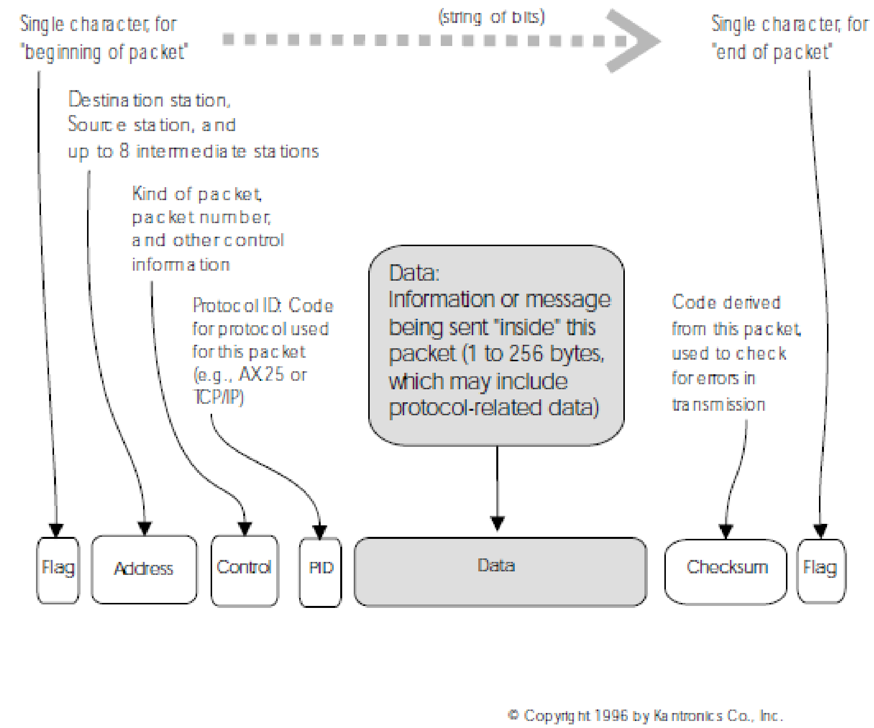

The Organization of an AX.25 Connected Information Packet

Kantronics, p. 27.

To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"),

	U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to

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	one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to

Exhibit P10 – Invalidity Chart for U.S. Patent No. 6,914,893 based on Kantronics

	be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a scalable data value comprising a scalable message; and	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC. • The **TNC** (Terminal Node Controller): (1) translates audio

	signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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	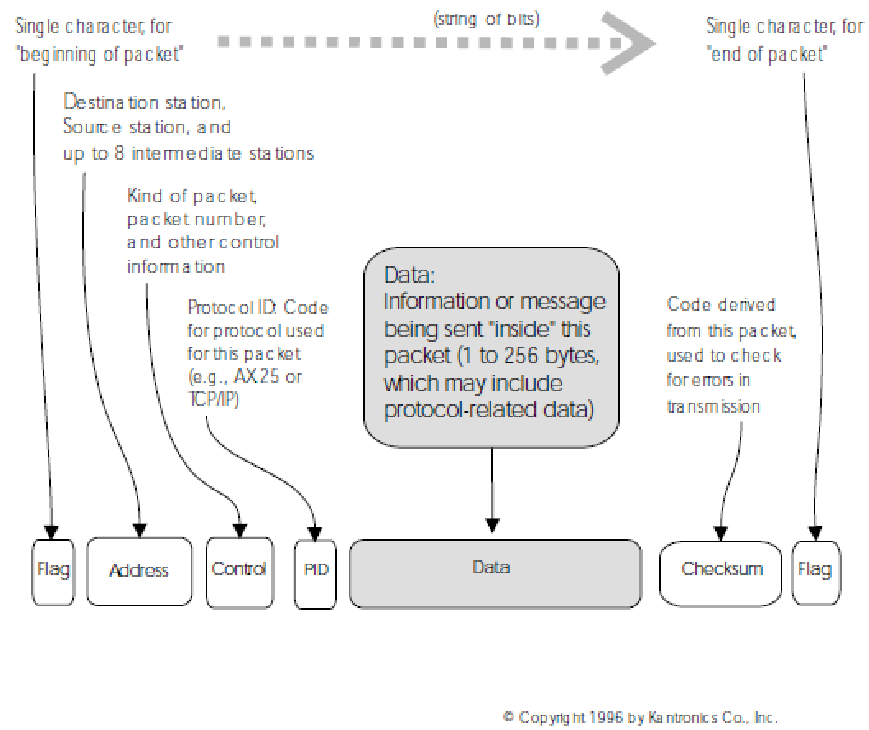 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kantronics, it would have been obvious to a person ordinary skill in the art to combine and/or modify Kantronics with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

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	For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the

Exhibit P10 – Invalidity Chart for U.S. Patent No. 6,914,893 based on Kantronics

	length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one

	network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43.

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an error detector that is a redundancy check error detector; and	"You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control." Kantronics, p. 166. "The three parts of a packet radio station work together as follows: • The **transceiver**: (1) sends and receives radio signals to and from your antenna and (2) passes audio signals back and forth between itself and the TNC.

	• The **TNC** (Terminal Node Controller): (1) translates audio signals into digital information and vice versa, (2) performs a number of control and information storage functions, and (3) communicates digitally with your computer. • The **computer** communicates digitally with the TNC, so you can: (1) view messages received from the transceiver or stored in a mailbox (i.e., PBBS), (2) use the computer to send data to, and receive data from, other stations, via the TNC and your transceiver, and (3) control the operation of the TNC." Kantronics, p. 19. "Before this message can be transmitted from a source station to a destination station, via an intermediate station, all the stations involved have to have **callsigns**, which are used by the TNCs involved to identify and process information (e.g., source, destination, and routing of information)." Kantronics, p. 20. "All amateur radio packets (also called "frames") are defined by the AX.25 protocol, which is discussed in the next section. Packets used to carry messages, or chunks of messages, as in the "HELLO" example, are called "information packets." The following diagram shows the basic building blocks of "connected information" packets used in amateur packet radio:" Kantronics, p. 26.

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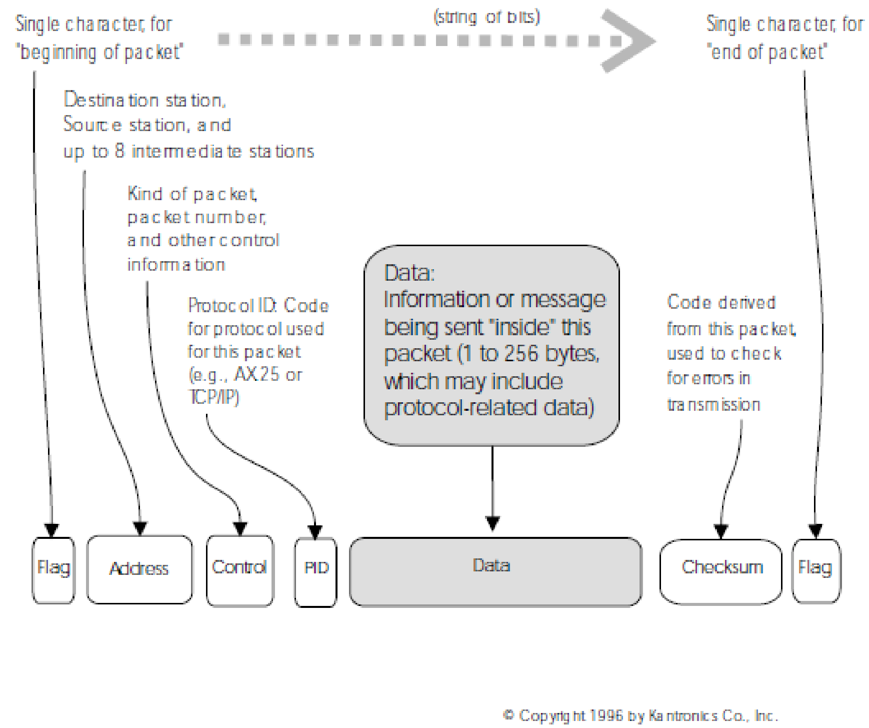
	 The Organization of an AX.25 Connected Information Packet Kantronics, p. 27.
wherein the steps of sending and receiving are repeated until the message is received by the intended receiver.	"**Remote Sensing and Control** You can use two (or more) packet radio stations, each containing a Kantronics TNC, to implement remote sensing and/or remote control, as follows: • **remote control of another TNC:** from a local Kantronics

	TNC-based radio station, use the MYREMOTE command to establish control of a remote Kantronics TNC-based radio station and issue commands for the remote TNC to carry out. For details, see the Command Reference. • **sense analog inputs:** use the ANALOG command to gather and report the status of one or two analog input lines in the remote TNC. Kantronics single port and multi-port TNCs contain an 8 bit A/D converter and additional circuitry that converts the analog voltage presented at two specified inputs into digital values from 0 to 255. You can then use these digital values (reported in binary) as an approximation of the analog voltage values at the time the TNC interrogated the analog inputs. For details on the ANALOG command, see the Command Reference. + **Note:** As documented in the ANALOG command and the radio port pin specifications, single port devices and multiport devices use different input lines and ports for analog sensing. • **control output voltages:** use the CTRL command to control the voltages on selected output lines in the remote TNC (up to two output lines in single port devices and four output lines in multi-port devices). Each of these output lines can be set to 5 volts (i.e., ON) or 0 volts (i.e., OFF) by the CTRL command. Also, the CTRL command can be used with any or all of these output lines to send a specified number of short ON/5 volts-then-OFF/0 volts pulses (each pulse lasting about .1 second, with a fixed length pause between pulses) or a single long

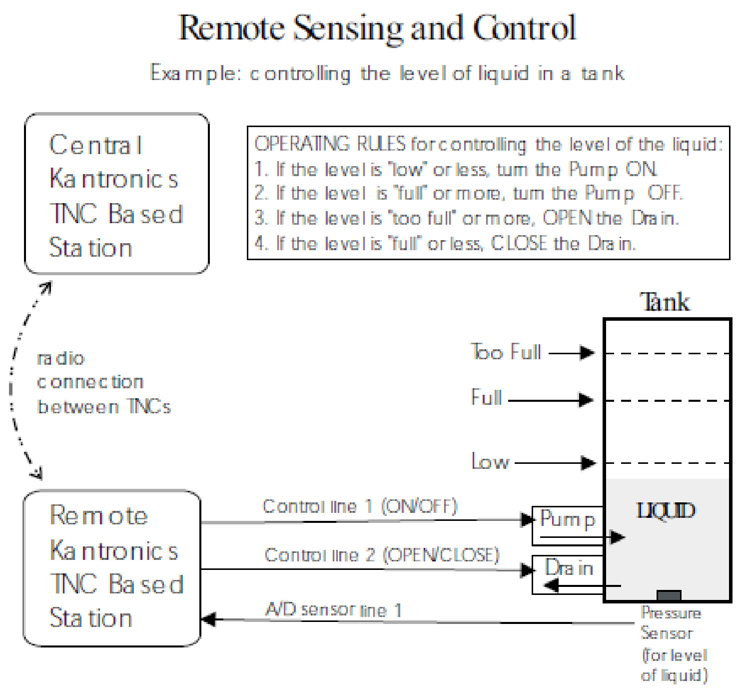
	(about 1.5 second) ON/OFF pulse. For details on the CTRL command, see the Command Reference." Kantronics, pp. 166, 167.  Kantronics, p. 167.

Exhibit P10 – Invalidity Chart for U.S. Patent No. 6,914,893 based on Kantronics

Exhibit P11 – Invalidity Chart for U.S. Patent No. 7,697,492 based on Network 3000

The '492 Patent – Claim	Network 3000
1. In a communication system to communicate command and sensed data between remote devices, the system comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 7,697,492 based on Network 3000

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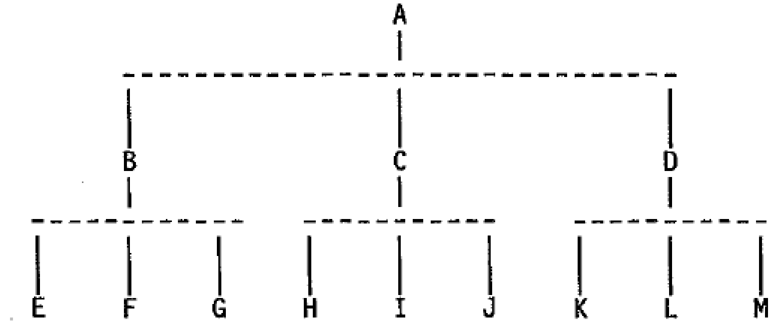


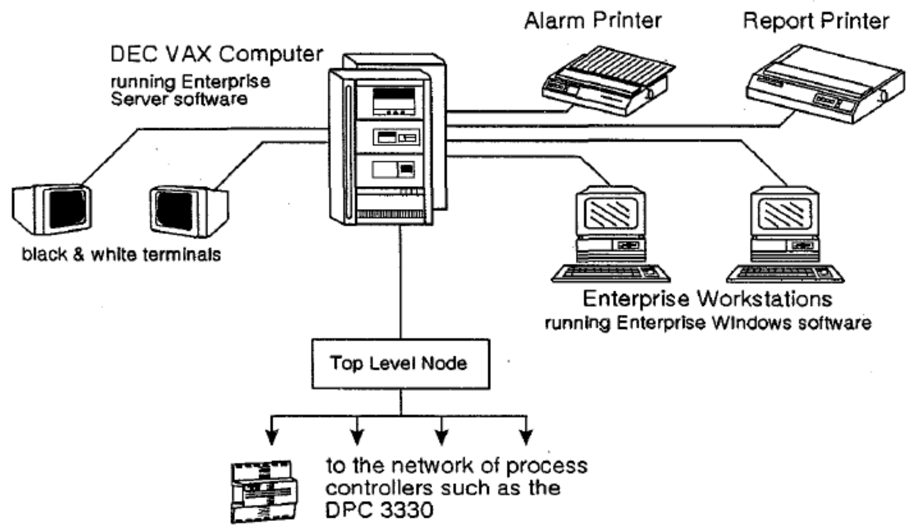
Network 3000 CUG, p. 6.


Figure 1-1
Typical System Configuration

Network 3000 SCM, p. 1-1.
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	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a receiver address comprising a scalable address of at least one remote device;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which

	add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field

	identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network

	service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing:

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	Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a command indicator comprising command code;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60.

	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses:

	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a data value comprising a scalable message; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the

	end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25.

	"The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier

	address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network

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a controller associated with a remote device comprising a transceiver configured to send and receive wireless signals, the remote device configured to send a preformatted message comprising the receiver address, a command indicator, and the data value via the transceiver to at least one other remote device.	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.
2. The system of claim 1, further comprising:	The above contentions for claim 1 are hereby incorporated by reference.

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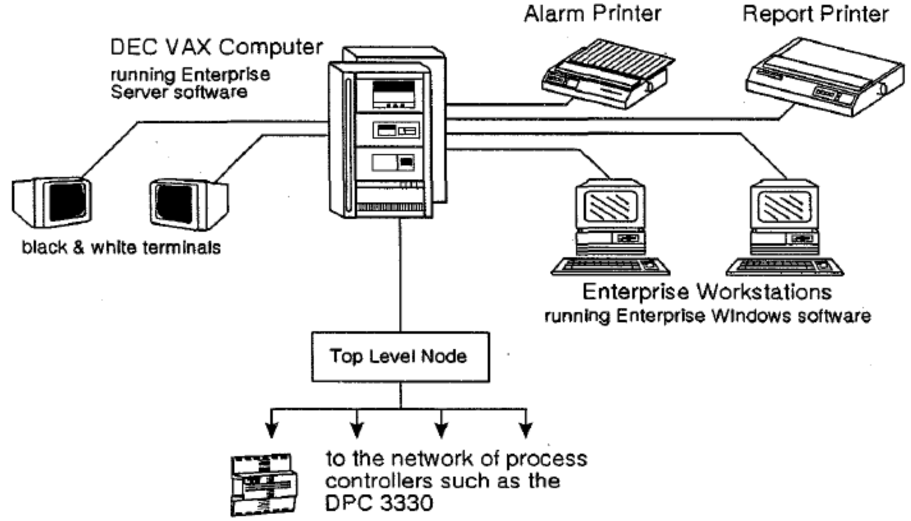
a plurality of transceivers each having a unique address, the transceiver being one of the plurality of transceivers;	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a

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a plurality of controllers associated with each the controller associated with at least one of the transceivers, the controller being in communication with at least one other transceiver with a preformatted message, the preformatted message having at least one scalable field;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a

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	unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their

	normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November

	1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
at least one sensor associated with at least one of the transceivers to detect a condition and output a data signal to the transceiver; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, as cited below. For example, the '217 patent discloses: "The sensor interface modules 102 are intelligent communications devices which attach to gas, electric, and water meters and other types of monitored equipment. The basic sensor interface modules 102 may be adapted to any number of systems being monitored, including but not limited to: electrical systems, gas systems, water systems, security

	systems, temperature control systems, vending machines, and remotely monitored devices of any sort. The sensor interface modules 102 include an appropriate hardware sensor for the device being monitored; a computerized monitoring system with associated firmware; battery power supply and/or converter for external power; and a transmitter." '217 patent, 7:35-48. The '491 patent discloses: "A wireless machine monitoring and communication system includes one or more machine monitors which attach to one or more machines to sense a physical characteristic of the machine, such as vibration or temperature, and to produce wireless transmissions corresponding to the sensed characteristic. A command station executes machine status polling in accordance with a time-division communication protocol and processes machine status data obtained during polling to determine the status of the machine. The machine monitor incorporates a wireless transmitter for transmitting at least status information, and the command station incorporates a wireless receiver for receiving monitor transmissions. To conserve power, the machine monitors are turned on only at preprogrammed times in accordance with the time-division communication protocol. Each machine monitor includes a receiver and the command station includes a transmitter to enable the command station to send commands to each machine monitor." '491 patent, Abstract. The '650 patent discloses: "The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data acquisition device includes a primary cache, a detachable RF

	transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47.
at least one actuator associated with at least one of the transceivers to activate a device.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, as cited below. For example, the '773 patent discloses: "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. The '903 patent discloses: "Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a

	residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
3. The system of claim 1, wherein the controller sends the preformatted message via an associated transceiver, and at least one transceiver sends the preformatted response message.	The above contentions for claim 1 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, as cited below. For example, the '773 patent discloses: "FIG. 9A illustrates the overall operation of the microcontroller of a Minion device. The Minion device microcontroller is periodically energized from a power saving sleep mode to wake up mode at step 902 to listen for a message. If a message is received at step 904, the microcontroller is processed at step 906 as indicated in more detail below in FIG. 9C. … FIG. 9C illustrates the process of processing a message as indicted by step 906 of FIG. 9A. In particular, the microcontroller retrieves the message to be processed from the transmit queue at step 960, inserts its

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	identification as the sender in step 962, records the transmit time and offset at step 964, and then proceeds to step 966 to determine whether or not the message contains a time field. If it does the microcontroller proceeds to step 968 to insert the current time in the field. Otherwise, the micro-controller proceeds to step 970 to compute the CRC for error detection (i.e., the cyclic redundancy check). It proceeds to step 974 to send the training bits followed by an encodes zero that is sent at step 976 followed by the bits which are sent in step 978." '217 patent, 10"27-33 and 13:6-19. '773 patent, Figures 9A and 9C.
4. The system of claim 1, wherein at least one transceiver receives the preformatted message requesting sensed data, confirms the receiver address as its own unique address, receives a sensed data signal, formats the sensed data signal into scalable byte segments, determines the number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 1 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header.

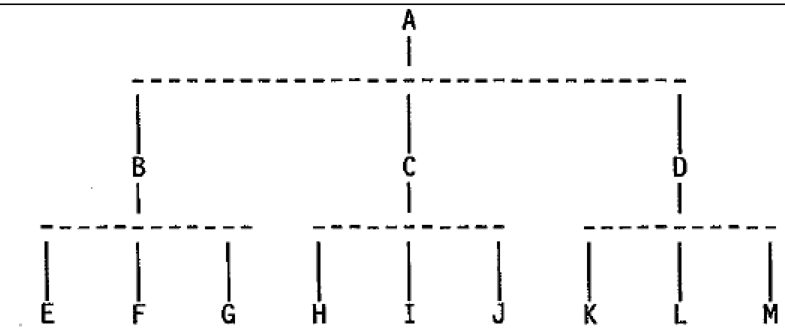
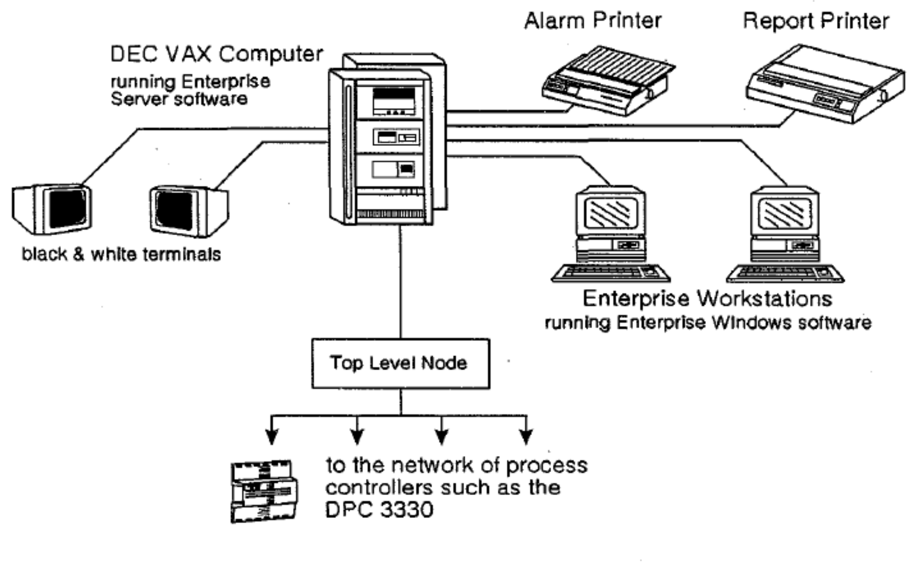
	ETE Header: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25.

	"The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-

	39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space.

	Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
6. The system of claim 1, wherein each remote device is adapted to transmit and receive radio frequency transmissions to and from at least one other transceiver.	The above contentions for claim 1 are hereby incorporated by reference. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44.
8. A method of communicating command and sensed data between remote wireless devices, the method comprising:	
providing a receiver to receive at least one message;	"The Bristol Babcock Synchronous/Asynchronous Communication

	Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
wherein the message has a packet comprising a command indicator comprising a command code, a scalable data value comprising a scalable message, and an error detector that is a redundancy check error detector; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are

	updated by every intermediate packet radio." Jubin page 25-26. Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before

	being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses:

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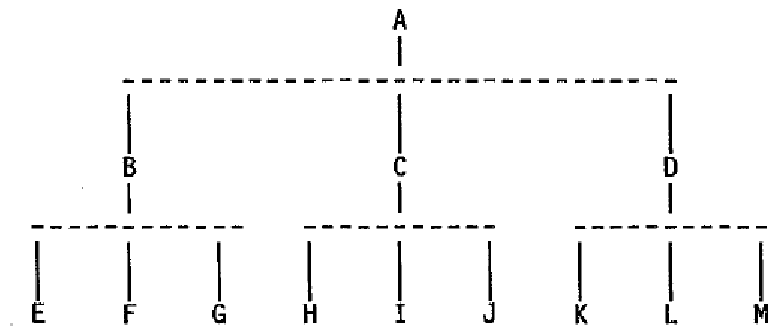
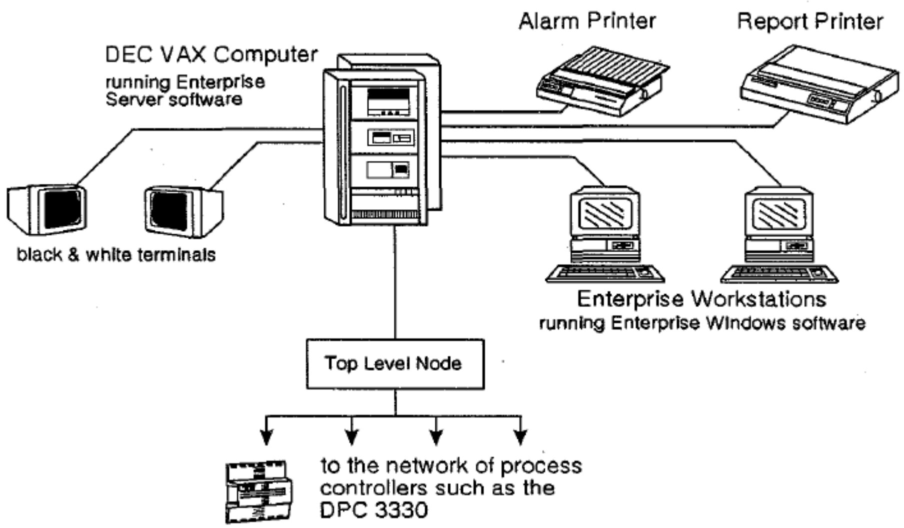
	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular

	class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes:

	optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

	Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
providing a controller to determine if at least one received message is a duplicate message and determining a location from which the duplicate message originated.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level

	there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration

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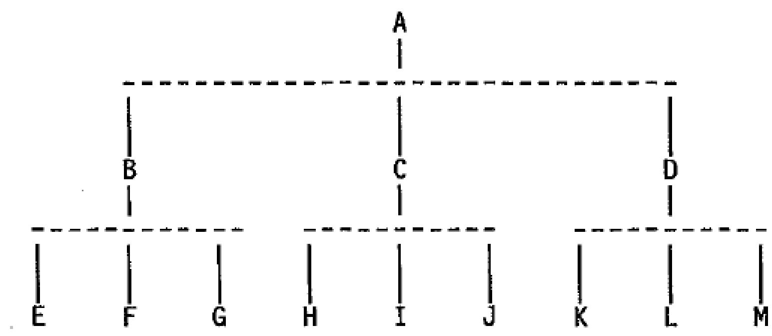
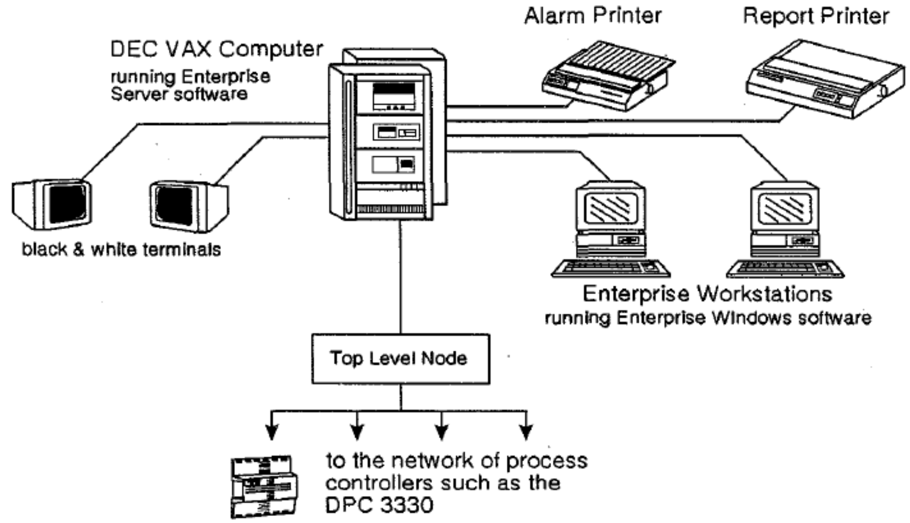
	Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
9. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices comprise geographically remote transceivers adapted to transmit and receive at least one message using radio frequency transmissions.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.

	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass

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10. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices has a unique address and the packet further comprises at least one scalable address field to contain the unique address for at least one device.	The above contentions for claim 8 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored

	device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first,

	broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R.

	Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
11. The method of claim 8, further comprising providing an actuator associated with at least one of the remote devices, the actuator configured to actuate in response to the command code.	The above contention for claim 8 is hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23.

	"A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For

	example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
13. The method of claim 8, further comprising determining if an error exists in a packet of the at least one message.	The above contention for claim 8 is hereby incorporated by reference.
14. A wireless communication device for use in a communication system to communicate command and sensed data between remote wireless communication devices, the wireless communication device comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of

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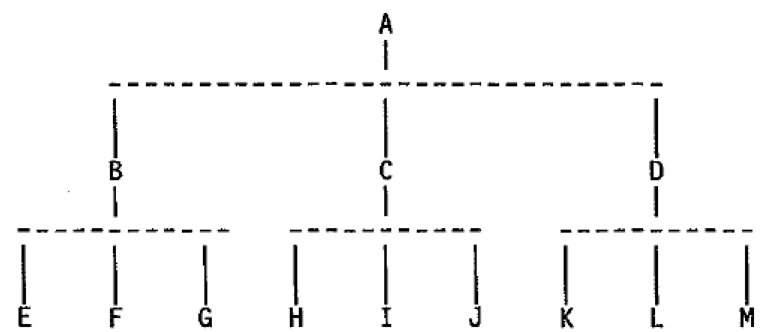
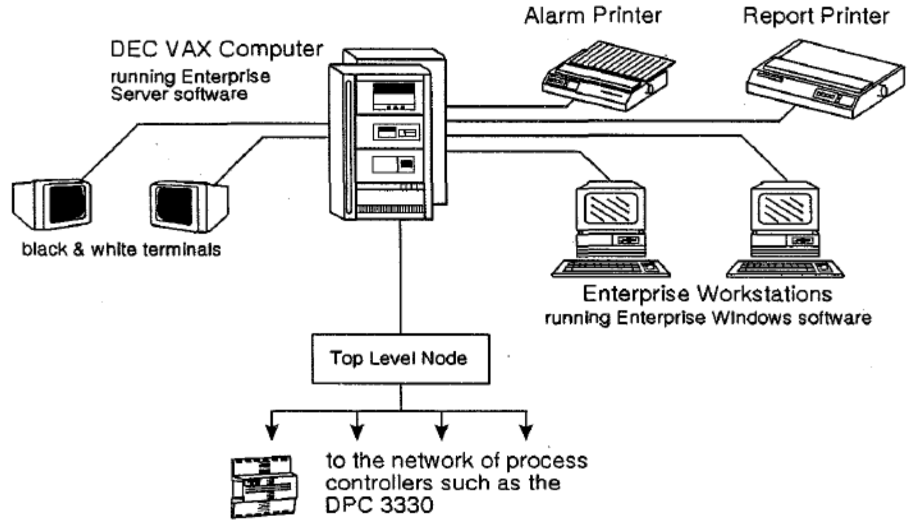
	exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass

	their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a transceiver configured to send and receive wireless communications; and	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level

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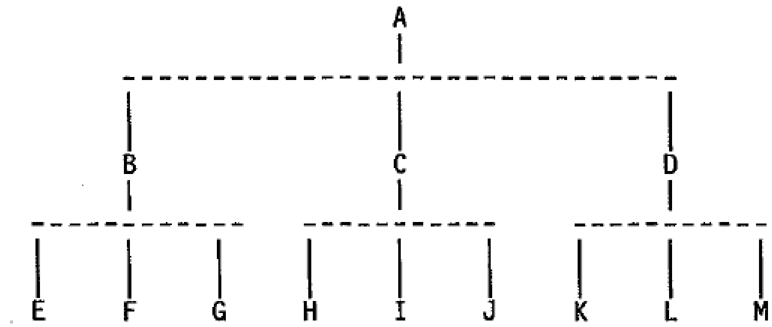
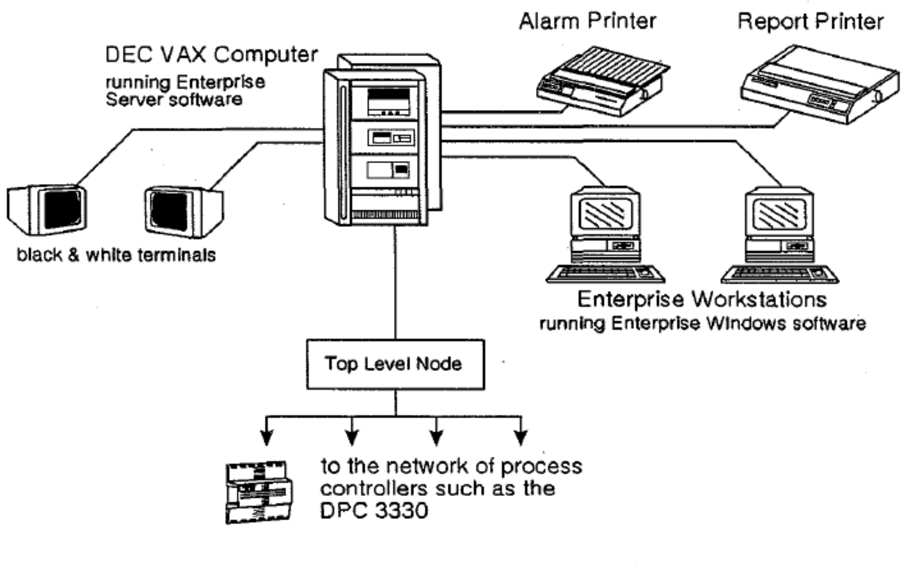
	there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.  **Figure 1-1** **Typical System Configuration**

	Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to format a message comprising a receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code, a data value comprising a scalable message.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S.

	Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. "*A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding

	through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For

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	example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to

	be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format

	in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

	Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
15. The wireless communication device of claim 14, further comprising at least one sensor configured to detect a condition and output a signal to the controller.	The above contentions for claim 14 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, as cited below. For example, the '773 patent discloses: "Additional objects includes providing a system a method which: *** shares network resources among low-cost intelligent data radios wherein the resources may include time synchronization, virtual geolocation services, sensor or actuator interfaces, shared memory and wide-area network access…." '773 patent, 1:59-2:23. The '903 patent discloses:

	"Further background information may be found in U.S. Pat. No. 5,696,695, Dec. 9, 1997, titled "System for Rate-Related Control of Electrical Loads." This patent discloses a system that attempts to cover residential application of a variety of demand side management features. These features may be initiated at a host site and transmitted to a residence or could be accomplished locally. Communications are transmitted to devices in the home using CEBUS power line or RF technology. The system employs the generic CEBUS protocol as specified in the EIA documentation. The disclosed system, therefore, is an example of a system that could be installed at a residence prior to installation of an AMR network that utilizes CEBUS RF in the manner disclosed herein. Thus a system could be installed at a residence to handle several loads within the home, shifting power usage to match the pricing structure programmed into the electric meter." '817 patent, 2:11-30.
16. The wireless communication device of claim 14, wherein the controller is further configured to determine if at least one received message is a duplicate message and determine a location from which the duplicate message originated.	The above contentions for claim 14 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, as cited below. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The

	data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
17. The wireless communication device of claim 14, further comprising at least one actuator configured to implement an action corresponding to the command code.	The above contention for claim 14 is hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23

	Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of

	measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the

	CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
18. The device of claim 14, wherein the transceiver comprises a unique transceiver address to distinguish the transceiver from other transceivers.	The above contentions for claim 14 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination

	device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to

	be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format

	in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

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19. In a system for communicating commands and sensed data between remote devices comprising a communications device for communicating commands and sensed data, the communications device comprising:	
a transceiver operably configured to be in communication with at least one other of a plurality of transceivers, wherein the transceiver has a unique address, wherein the unique address identities the individual transceiver, wherein the transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with each of the other transceivers via preformatted messages;	
a controller configured to be in communication with the transceiver, the controller configured to provide preformatted messages for communication;	
wherein the preformatted message comprises at least one packet, wherein the packet comprises: a receiver address comprising a scalable address of the at least one of the intended receiving transceivers; sender address comprising	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional

the unique address of the sending transceiver; a command indicator comprising a command code; at least one data value comprising a scalable message; and an error detector comprising a redundancy check error detector; and wherein the controller is configured to interact with the transceiver to send preformatted command messages.	references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing

	header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every

	60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message

	packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43.

	'252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must

	match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable

	length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing “shortage of network numbers that can be assigned” for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
20. The communication device of claim 19, further comprising a sensor operatively configured to detect a condition and output a sensed data signal that corresponds to the condition to the transceiver.	The above contentions for claim 19 are incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, as cited below. For example, the ‘217 patent discloses: “The sensor interface modules 102 are intelligent communications devices which attach to gas, electric, and water meters and other types of monitored equipment. The basic sensor interface modules 102 may be adapted to any number of systems being monitored, including but not

	limited to: electrical systems, gas systems, water systems, security systems, temperature control systems, vending machines, and remotely monitored devices of any sort. The sensor interface modules 102 include an appropriate hardware sensor for the device being monitored; a computerized monitoring system with associated firmware; battery power supply and/or converter for external power; and a transmitter." '217 patent, 7:35-48. The '491 patent discloses: "A wireless machine monitoring and communication system includes one or more machine monitors which attach to one or more machines to sense a physical characteristic of the machine, such as vibration or temperature, and to produce wireless transmissions corresponding to the sensed characteristic. A command station executes machine status polling in accordance with a time-division communication protocol and processes machine status data obtained during polling to determine the status of the machine. The machine monitor incorporates a wireless transmitter for transmitting at least status information, and the command station incorporates a wireless receiver for receiving monitor transmissions. To conserve power, the machine monitors are turned on only at preprogrammed times in accordance with the time-division communication protocol. Each machine monitor includes a receiver and the command station includes a transmitter to enable the command station to send commands to each machine monitor." '491 patent, Abstract. The '650 patent discloses: "The present invention solves the foregoing problems by providing a data acquisition device and a data collection system. The data

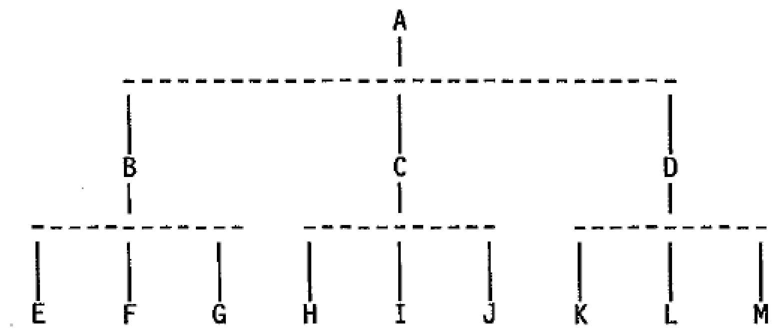
	acquisition device includes a primary cache, a detachable RF transceiver, and a user supplied sensor device. The data collection system includes a secondary cache. The detachable RF transceiver has a programmable controller and an I/O interface capable of attaching to a variety of user supplied sensor devices….Each data acquisition device is capable of peer to peer communication such that data acquisition devices outside of the range of the data collection device can communicate with the data collection device through other data acquisition devices." '650 patent, 3:27-47.
21. The communication device of claim 20, wherein the transceiver is configured to receive a preformatted command message requesting sensed data, confirms the receiver address is its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 20 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It

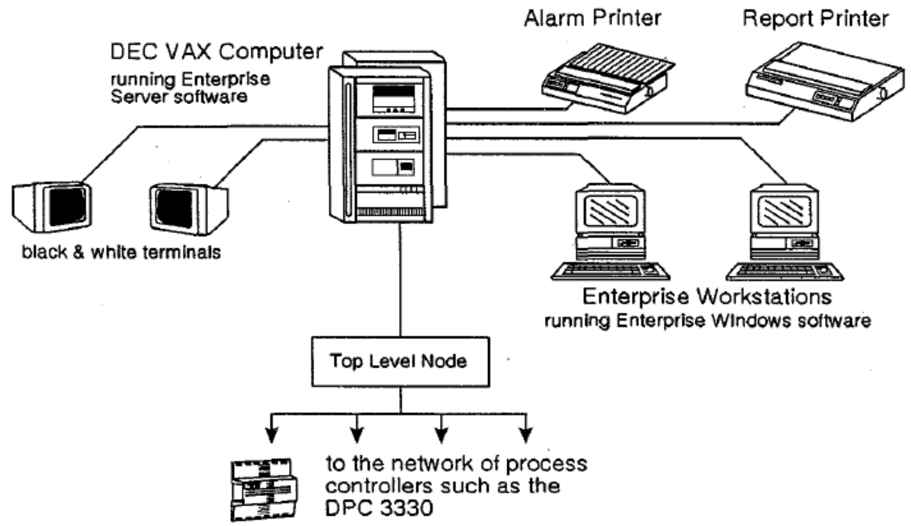
	contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three

	delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space.

	Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
25. A wireless communication device for use in a communication system to communicate a number of commands and sensed data between remote wireless communication devices, the wireless communication device comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44.

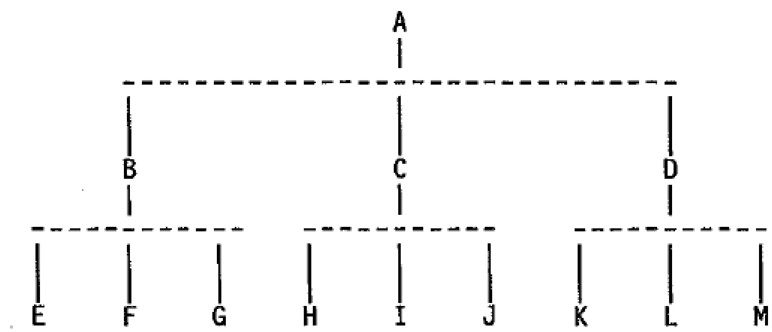
	"BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass

	their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a transceiver configured to send and receive wireless communications; and	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level

Exhibit P11 – Invalidity Chart for U.S. Patent No. 7,697,492 based on Network 3000

	there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.



Network 3000 CUG, p. 6.

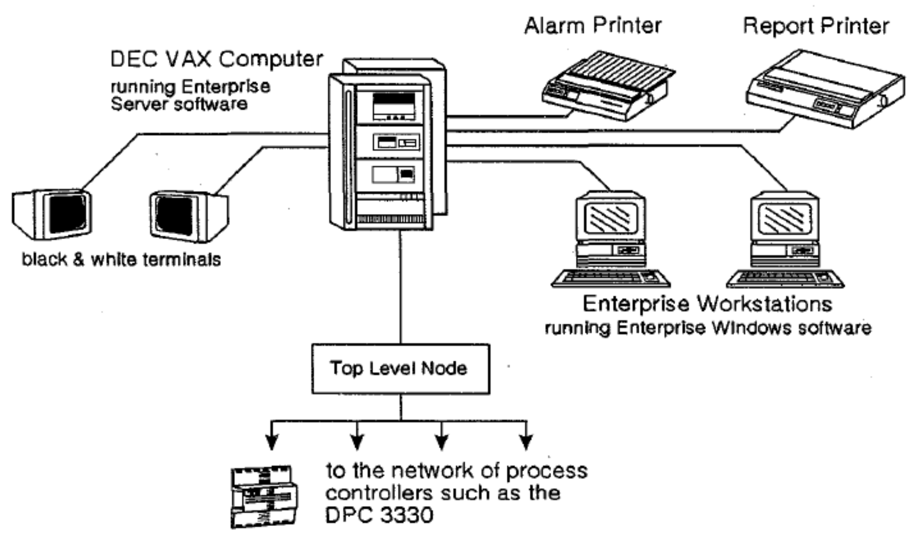


Figure 1-1
Typical System Configuration

	Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to reformat a message comprising receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code; a data value comprising a scalable	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S.

message.	Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding

	through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For

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	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to

	be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format

	in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

	Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Network 3000

The '661 Patent – Claim	Network 3000 Communications Users Guide
1. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

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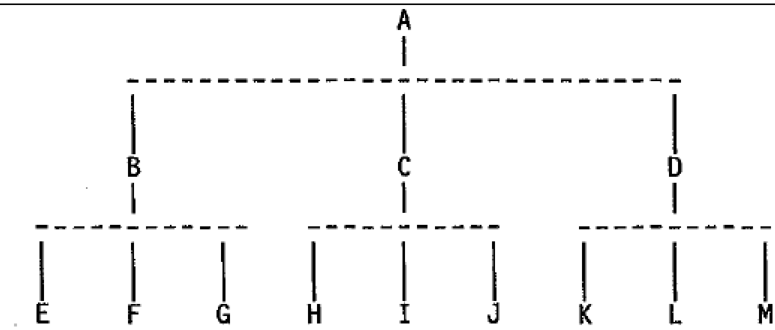
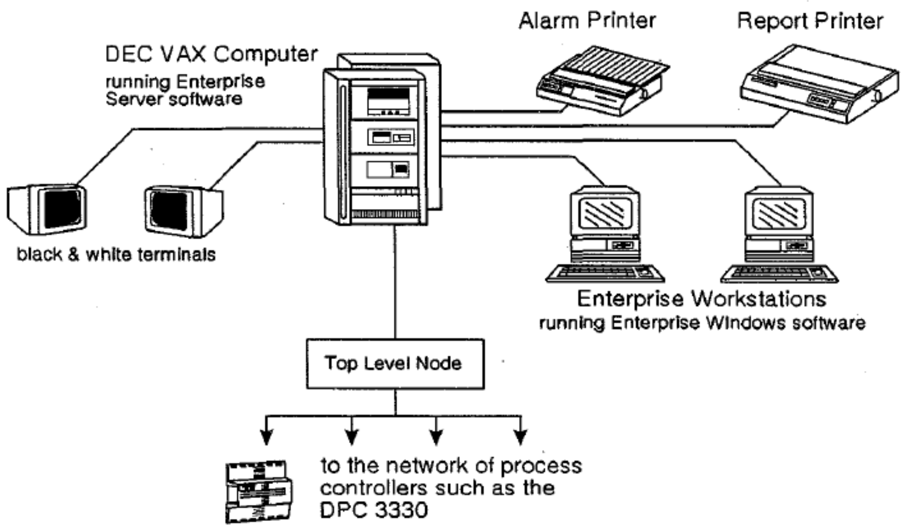
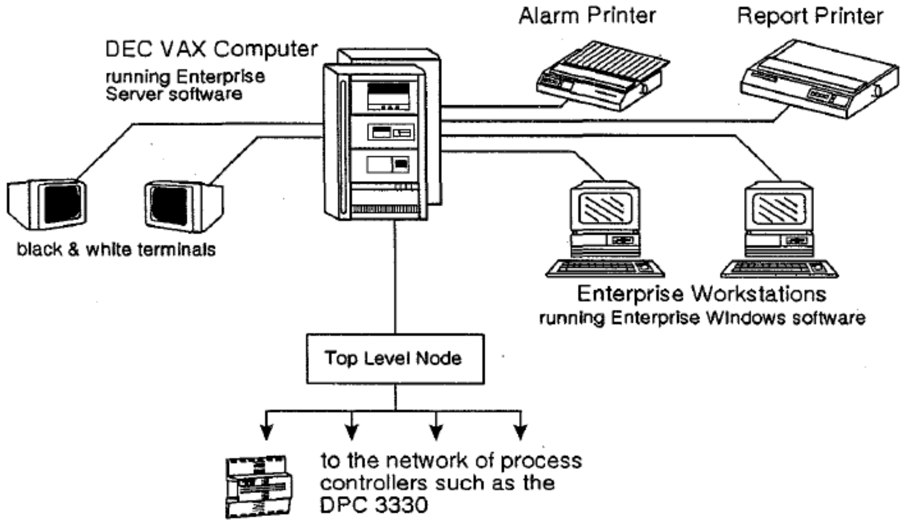
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.

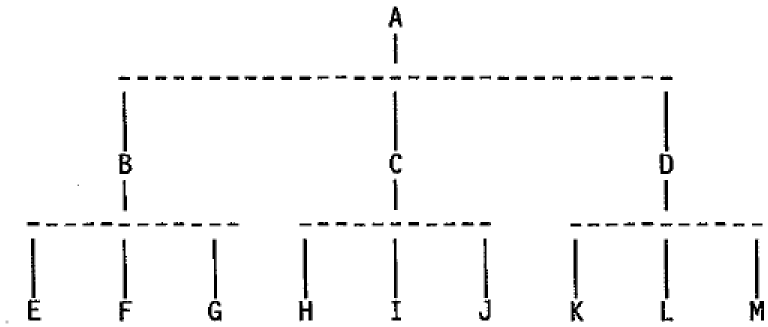
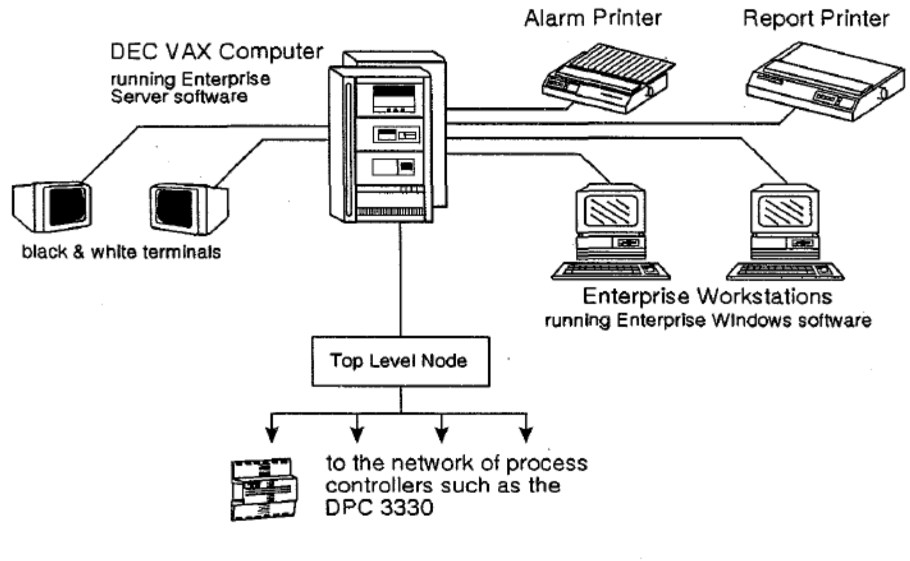
transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Network 3000

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. 3.2 Data Message (Global And Local) Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is: DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA, DLE,ETX,CRC where: DLE = ASCII character 10H STX = ASCII character 02H LADD = Local address + 80H SER = Message serial number DADD = Destination global address SADD = Source global address CTL = Control byte DFUN = Destination function code SEQ = Application sequence number SFUN = Source function code NSB = Node Status Byte DATA = Application-dependent data (up to 241 bytes) DLE = ASCII character 10H ETX = ASCII character 03H CRC = Cyclic Redundancy Check Network 3000 CUG, p. 13.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Network 3000

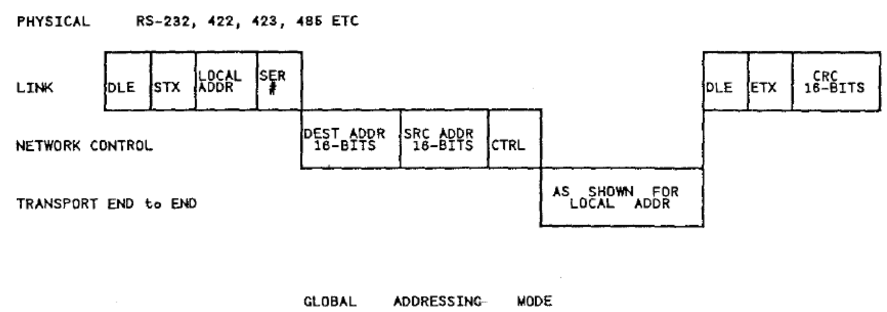
	"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.  Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the data base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said	

Exhibit P11 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Network 3000

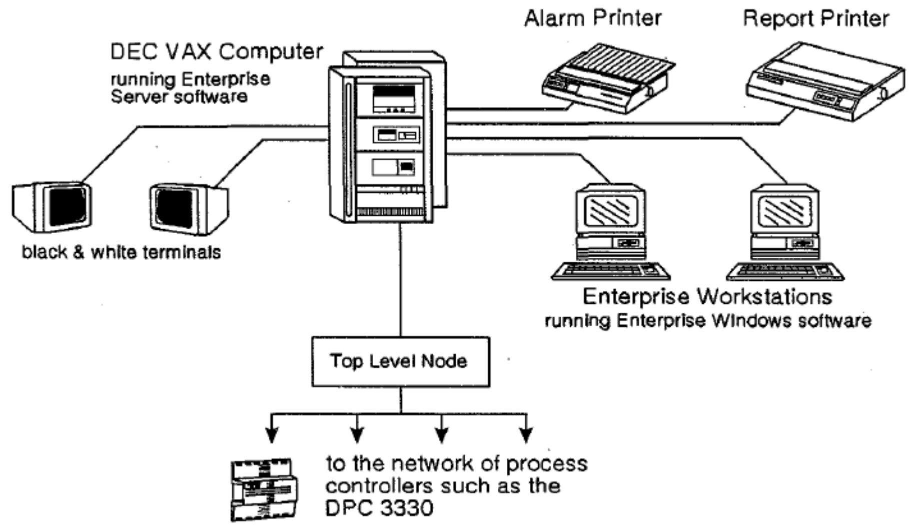
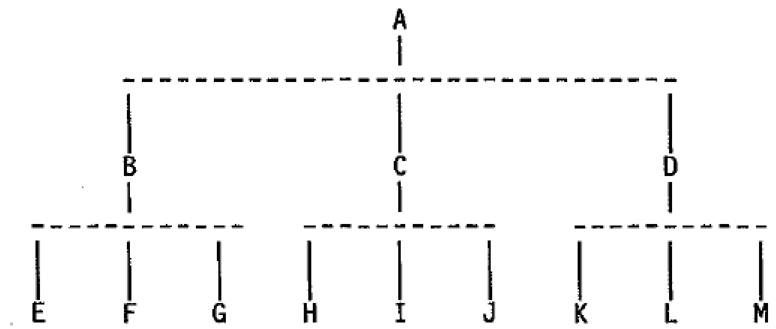
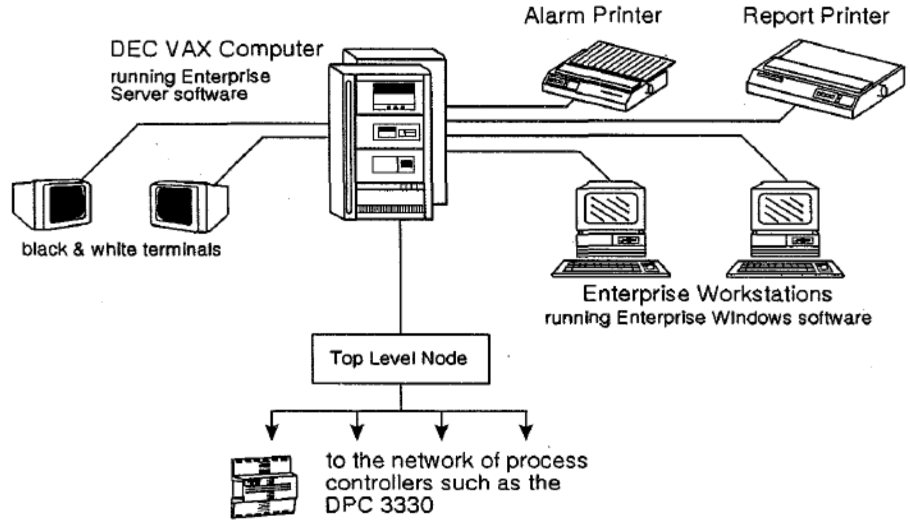
<table>
<tr><td>gateway further configured to further transmit the translated information to the computer over the WAN.</td><td>

Figure 1-1
Typical System Configuration

Network 3000 SCM, p. 1-1.</td></tr>
<tr><td></td><td></td></tr>
<tr><td>5. A system for monitoring remote devices, comprising:</td><td>“The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels.” Network 3000 Communications Users Guide, Feb. 5, 1993 (“Network 3000 CUG”), p. 4.

“Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data.” Network 3000 Server Configuration Manual, June 1992 (“Network 3000 SCM”), p. G-13.</td></tr>
</table>

	"Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM,

	p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
at least one wireless transmitter electrically interfaced with the sensor and configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a radio-frequency (RF) signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and

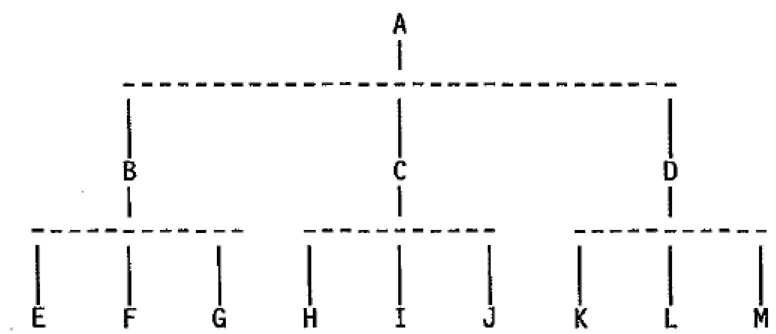
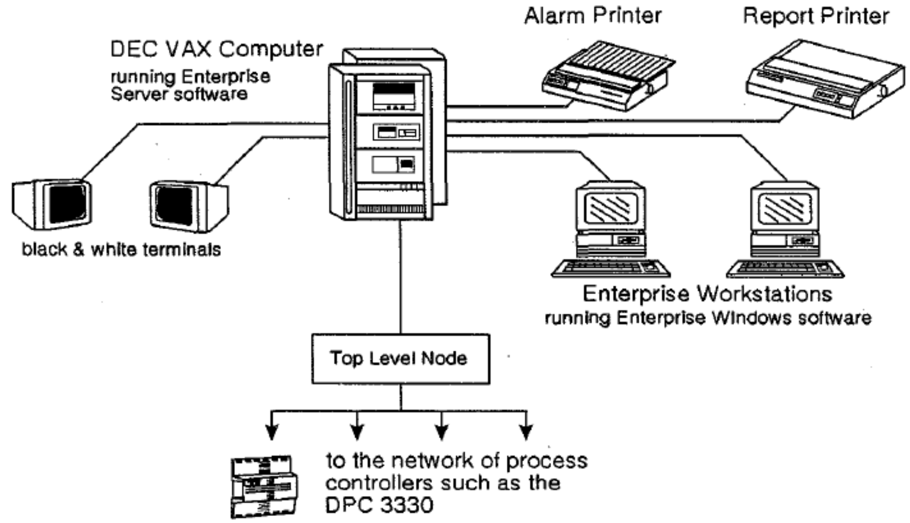
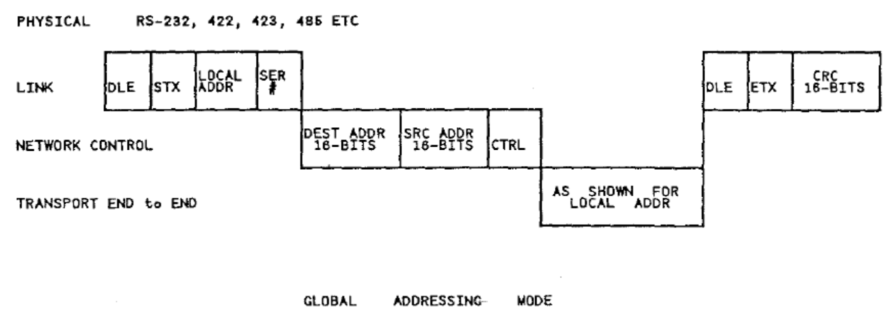
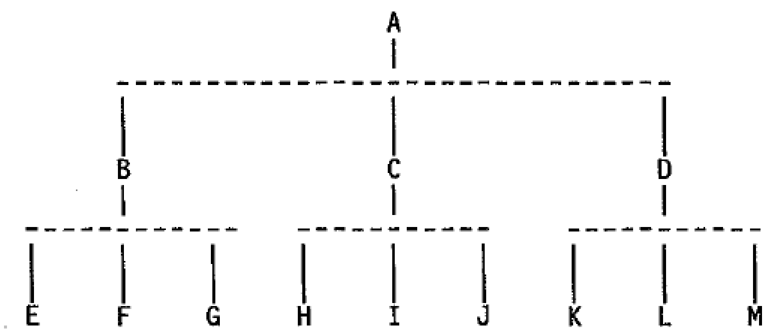
	process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

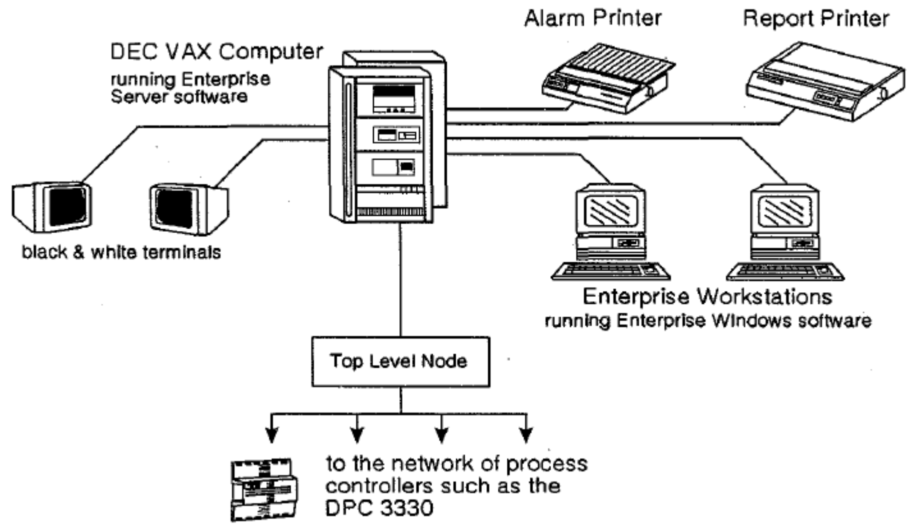
Exhibit P11 – Invalidity Chart for U.S. Patent No. 7,468,661 based on Network 3000

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. 3.2 Data Message (Global And Local) Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is: DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA, DLE,ETX,CRC where: DLE = ASCII character 10H STX = ASCII character 02H LADD = Local address + 80H SER = Message serial number DADD = Destination global address SADD = Source global address CTL = Control byte DFUN = Destination function code SEQ = Application sequence number SFUN = Source function code NSB = Node Status Byte DATA = Application-dependent data (up to 241 bytes) DLE = ASCII character 10H ETX = ASCII character 03H CRC = Cyclic Redundancy Check Network 3000 CUG, p. 13.

	"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.  Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the data base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.
one or more additional wireless transmitters each electrically interfaced with a sensor and configured to receive the RF signal and retransmit the RF signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.

	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global

	address." Network 3000 CUG, p. 5. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. 3.2 Data Message (Global And Local) Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is: DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA, DLE,ETX,CRC where: DLE = ASCII character 10H STX = ASCII character 02H LADD = Local address + 80H SER = Message serial number DADD = Destination global address SADD = Source global address CTL = Control byte DFUN = Destination function code SEQ = Application sequence number SFUN = Source function code NSB = Node Status Byte DATA = Application-dependent data (up to 241 bytes) DLE = ASCII character 10H ETX = ASCII character 03H CRC = Cyclic Redundancy Check Network 3000 CUG, p. 13.

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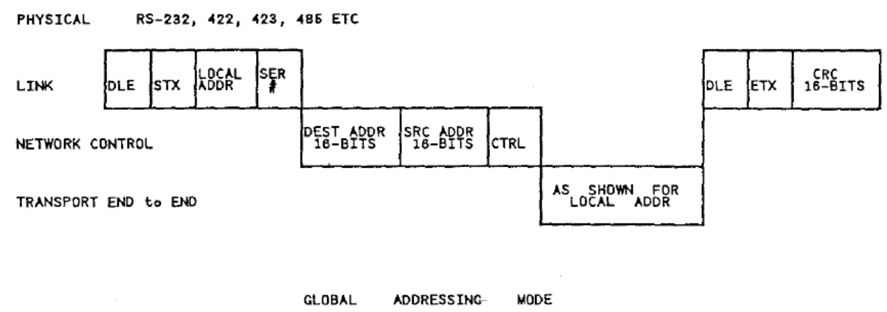
	"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.  Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the data base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.

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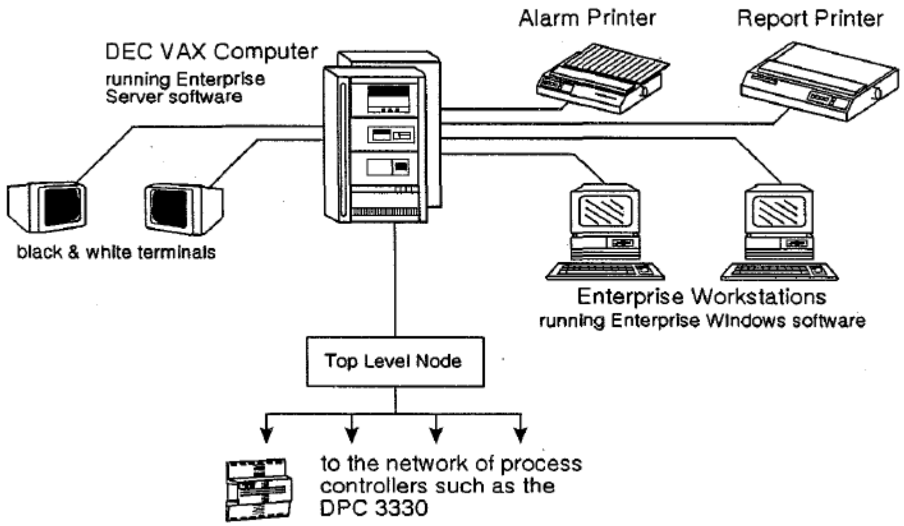
at least one gateway connected a wide area network (WAN) configured to receive and translate the retransmitted RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.

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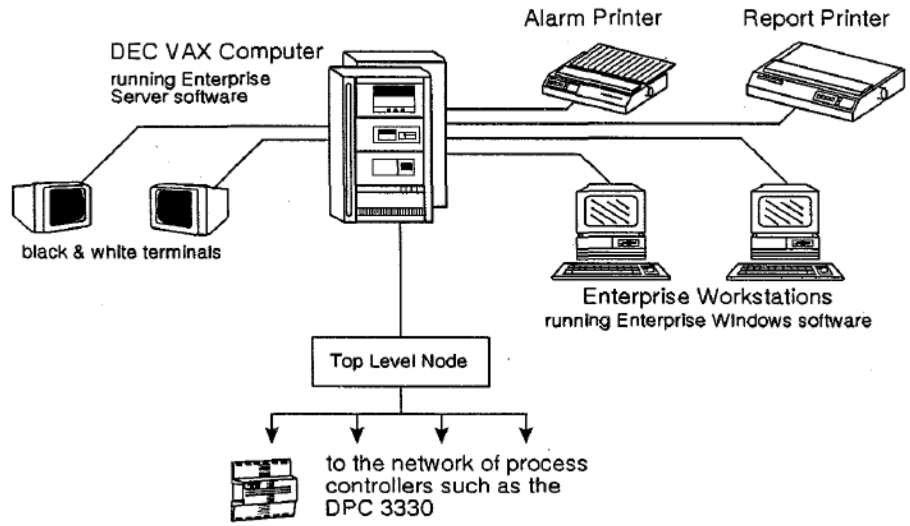
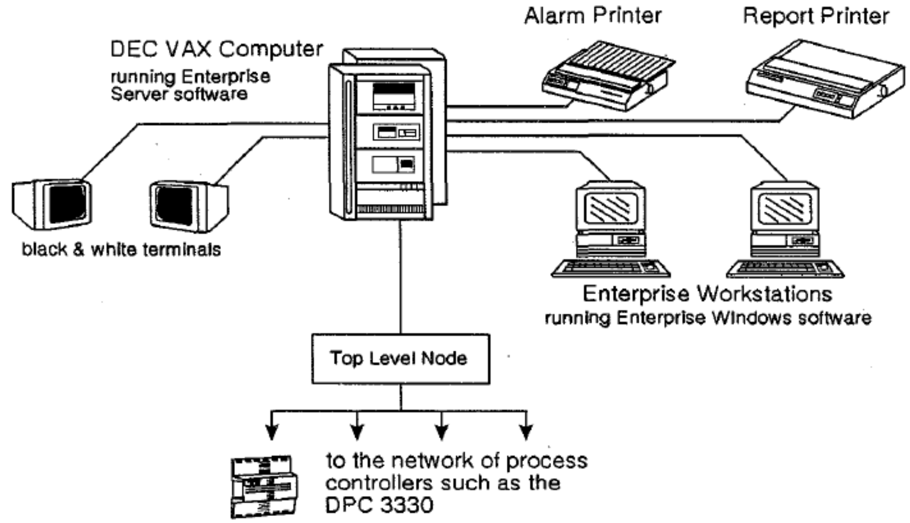
	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.
6. The system of claim 5, wherein the at least one gateway is permanently connected to the WAN.	The above contentions for claim 5 are hereby incorporated by reference.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.
8. The system of claim 5, wherein the gateway translates the encoded electrical signal, the transmitter identification and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 5 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: The ‘773 patent discloses:

	"This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols

	of the two networks….” Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. “Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way.” Burchfiel page 250. The ‘650 patent discloses: “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers.” ‘650 patent, 8:42-44. “For example, the Internet allows weather data from DAs 102 located anywhere

	to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
9. A system for controlling a remote device comprising:	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
a target remote device having an actuator to be controlled;	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices.

	At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page

	247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and

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	that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a computer configured to execute at least one	"Network In the context of Network 3000, the network includes computers and

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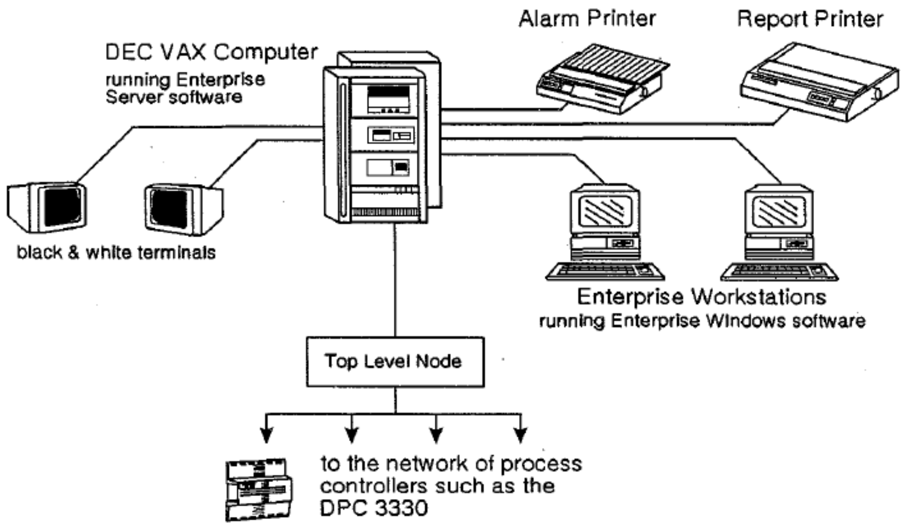
computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.  **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1.
a gateway connected to the WAN configured to receive and translate the at least one control signal	

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	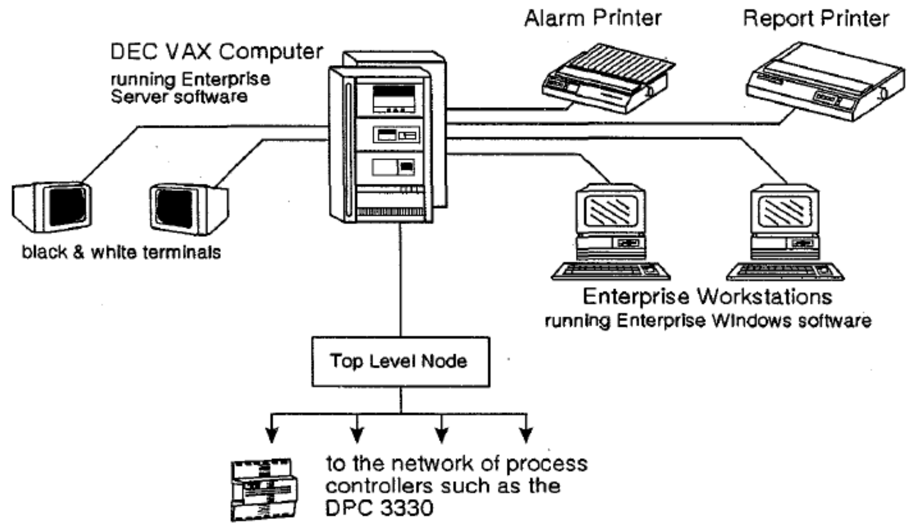 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1.
a wireless transmitter coupled with the gateway for transmitting a wireless signal that contains the control signal;	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM,

	p. 1-1.
a first wireless transceiver electrically interfaced with an actuator for receiving the wireless signal and further retransmitting the wireless signal to the target remote device; and	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
logic coupled to the target remote device for extracting the control signal from the retransmitted wireless signal and imparting an action on the actuator in response to the extracted control signal.	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a

	person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses:

	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control

	Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
10. The system of claim 9, further comprising:	The above contentions for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node.

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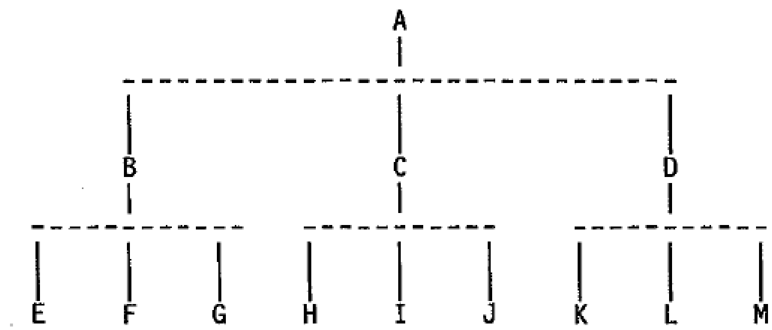
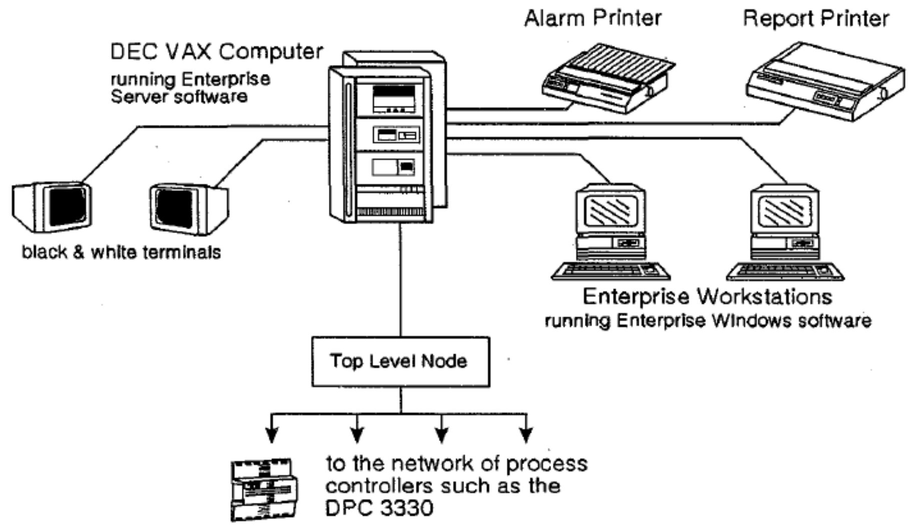
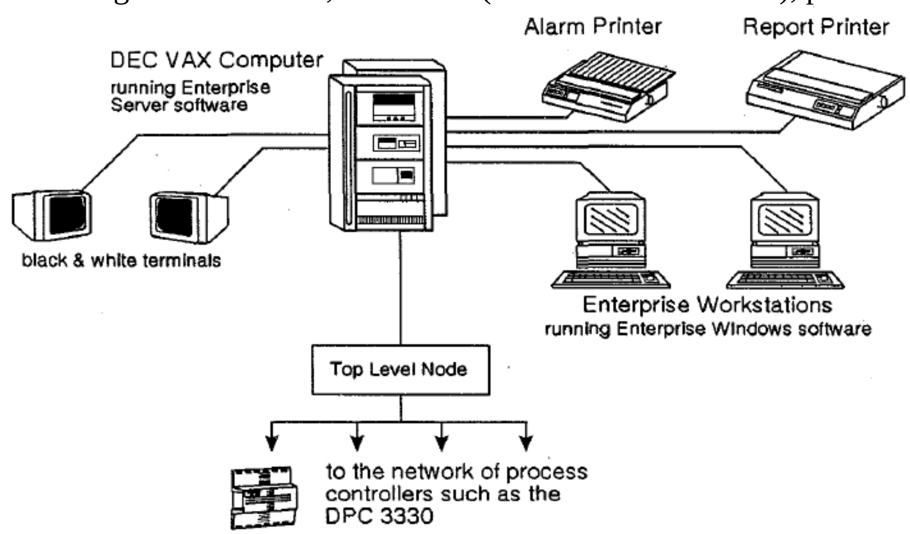
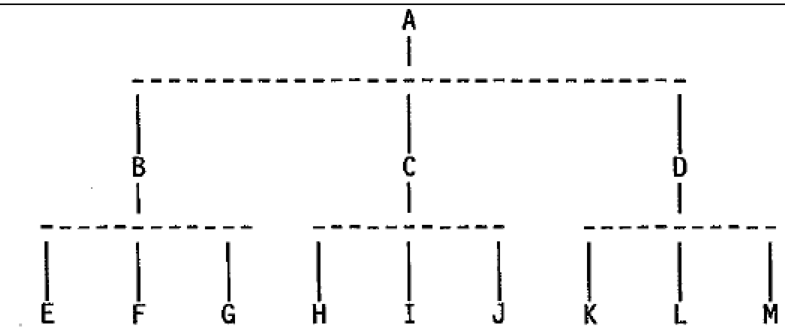
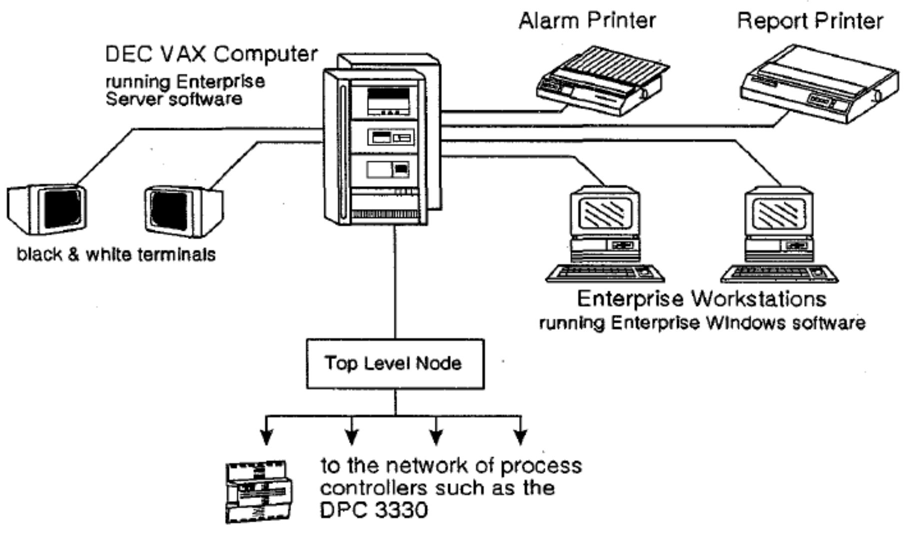
	Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
11. The system of claim 9, further comprising:	The above contentions for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator or a sensor and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
12. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.

	"Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM,

	p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

a plurality of non-earth orbiting transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.

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3.2 Data Message (Global And Local)

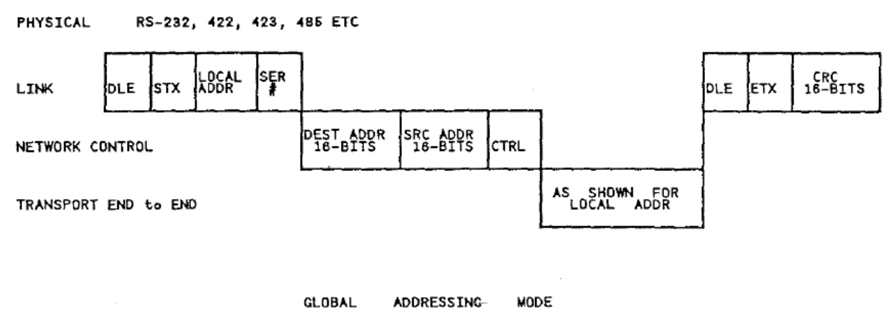
Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is:

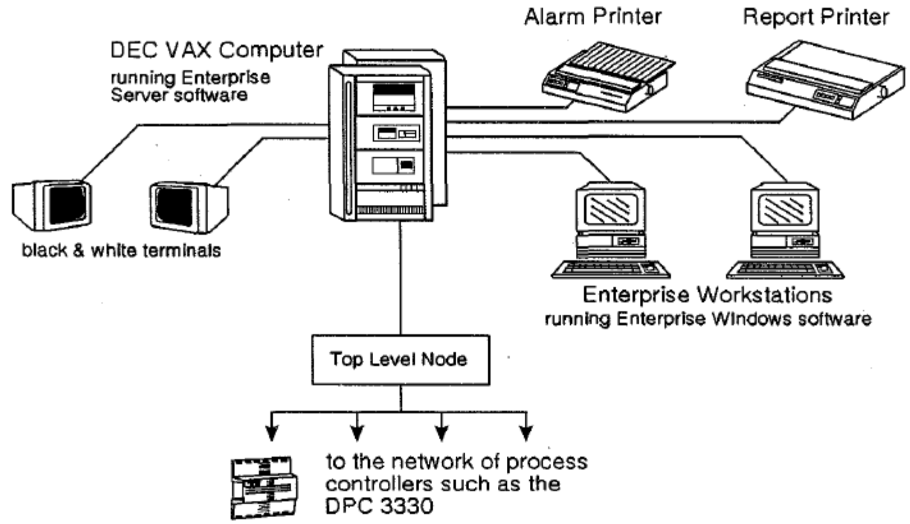
DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA, DLE,ETX,CRC

where:
DLE = ASCII character 10H
STX = ASCII character 02H
LADD = Local address + 80H
SER = Message serial number
DADD = Destination global address
SADD = Source global address
CTL = Control byte
DFUN = Destination function code
SEQ = Application sequence number
SFUN = Source function code
NSB = Node Status Byte
DATA = Application-dependent data (up to 241 bytes)
DLE = ASCII character 10H
ETX = ASCII character 03H
CRC = Cyclic Redundancy Check

Network 3000 CUG, p. 13.

"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.



	Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the data base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN.	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

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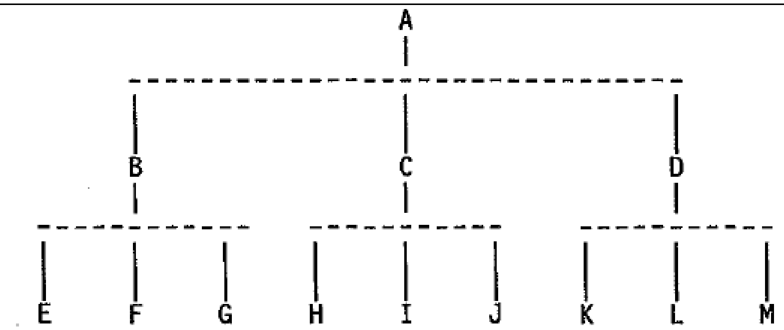
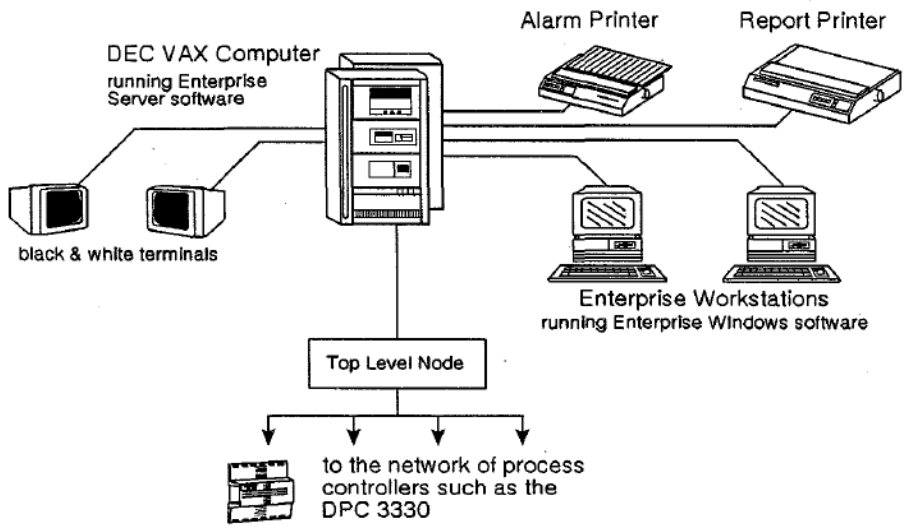
14. The system as defined claim 12, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 12 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: The '773 patent discloses: "This is accomplished by making a small percentage of the Minion devices in the field act as gateway Minion devices 120 illustrated in block diagram form in FIG. 4. These gateway Minion devices 120 act as concentrators for messages bound to and emanating from the centralized supervisory components of the nationwide MinionNet network. The actual wide area connectivity of a gateway Minion device may be provided by a terrestrial wide area wireless data network such as the Bell South Wireless Data Mobitex.RTM. network, a cellular based network using CDPD, or a satellite-based data network such as Orbcomm." '773 patent, 7:6-17. "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

	Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 3. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 4. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. The '650 patent discloses: "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As

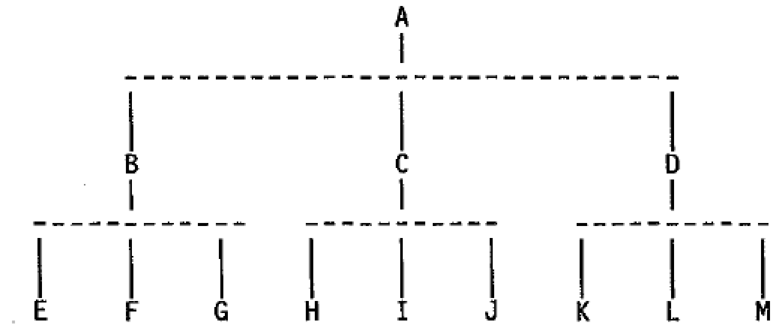
	shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.

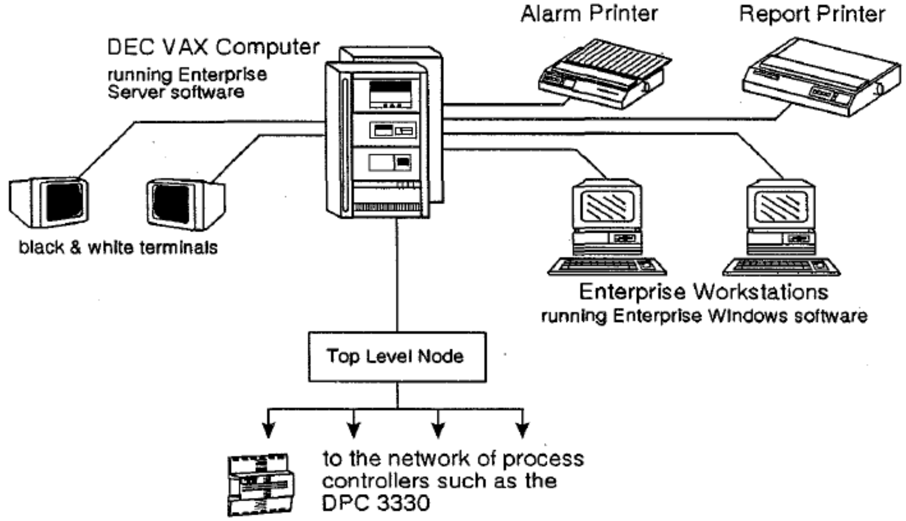
Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000

The '692 Patent – Claim	Network 3000
1. A system for remote data collection, assembly, and storage comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

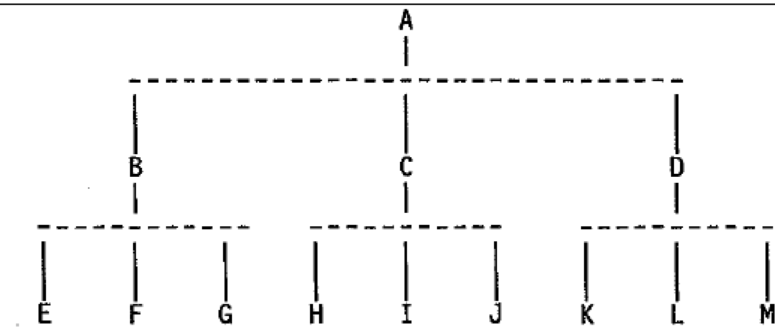
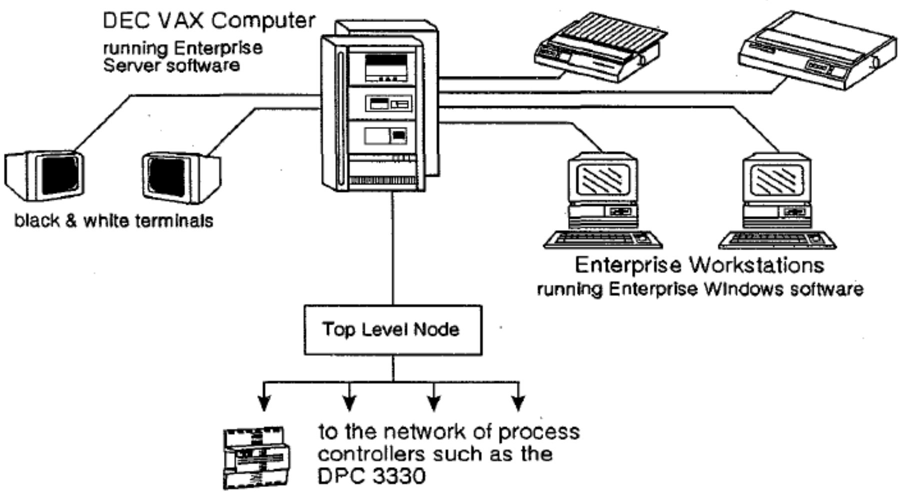
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

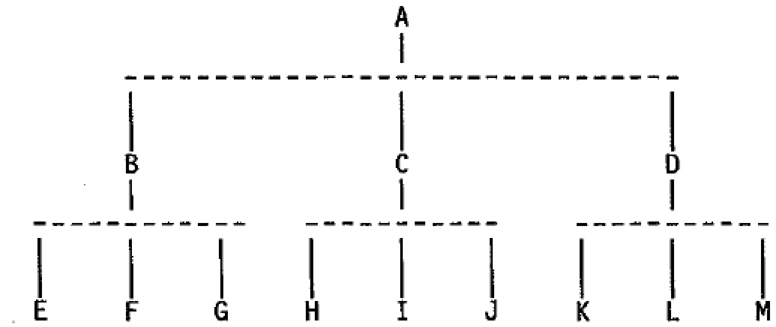
	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

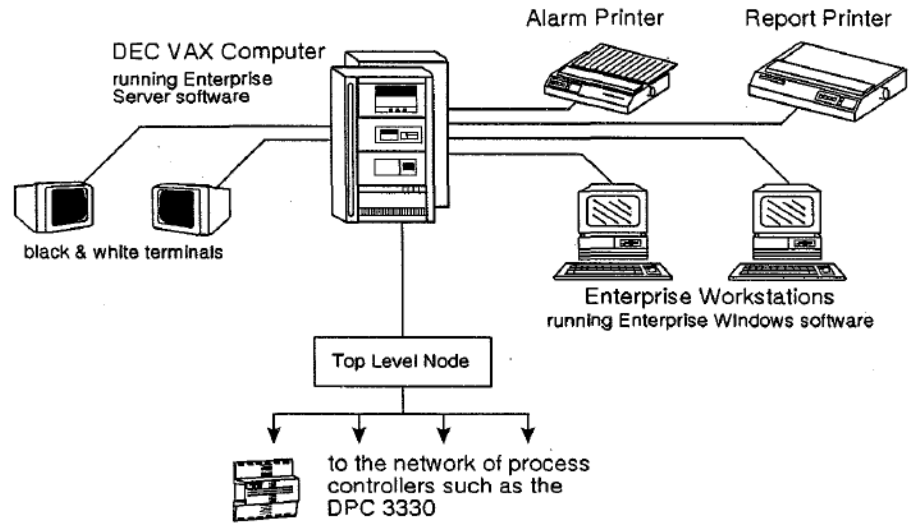
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one wireless transmitter configured to transmit select information and transmitter identification information;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

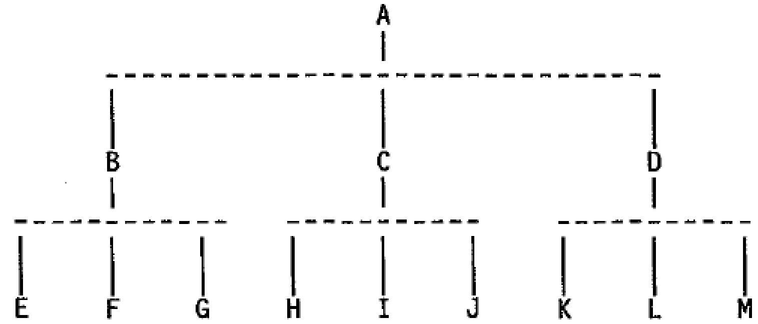
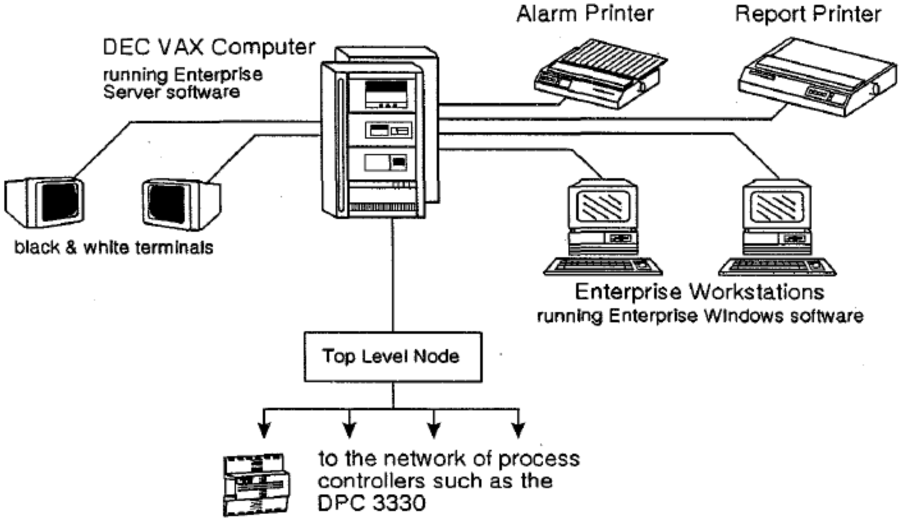
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically at defined locations configured to receive select information transmitted from at least one nearby wireless transmitter and further configured to transmit the select information, the transmitter identification information and transceiver identification information; and	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one gateway connected to the wide area network configured to receive and translate the select information, the transmitter identification information, and transceiver identification information, said gateway further configured to farther transmit the translated information to the computer over the WAN.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
3. The system as defined in claim 1, wherein each wireless transmitter is configured to transmit a relatively low-power, radio-frequency (RF) signal.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.

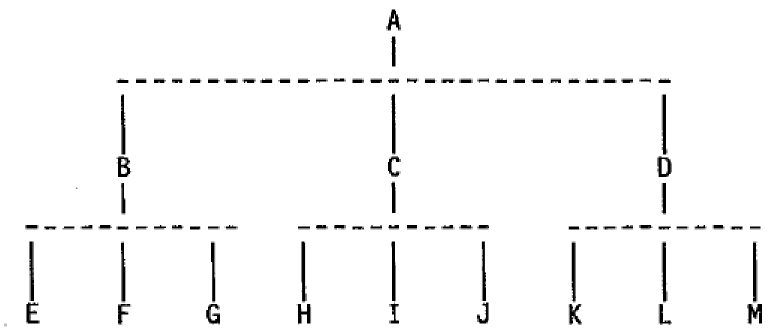
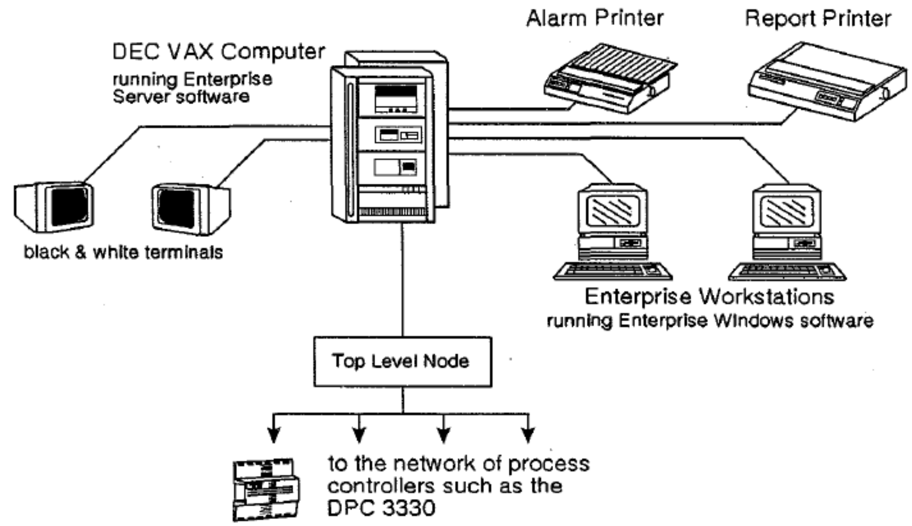
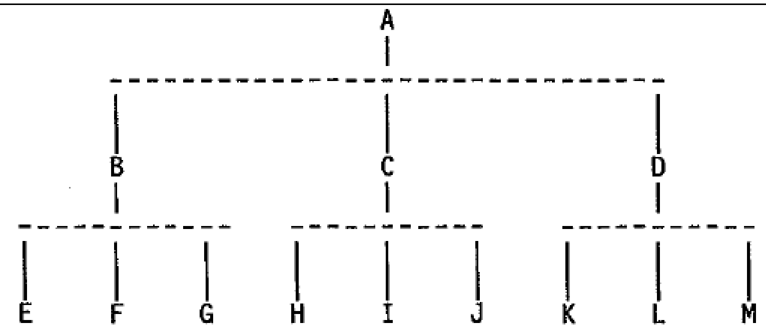
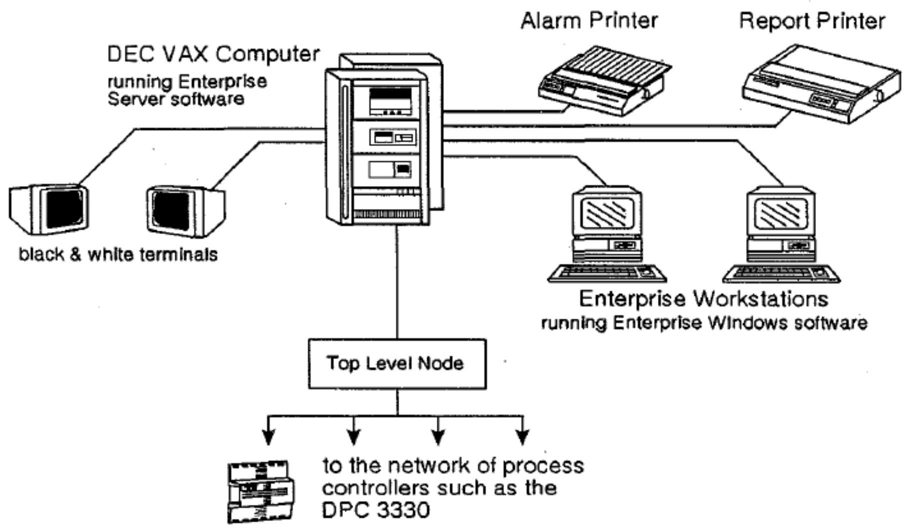
	"Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000

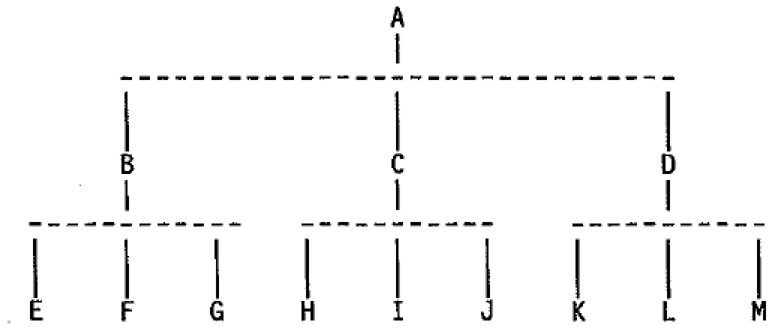
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

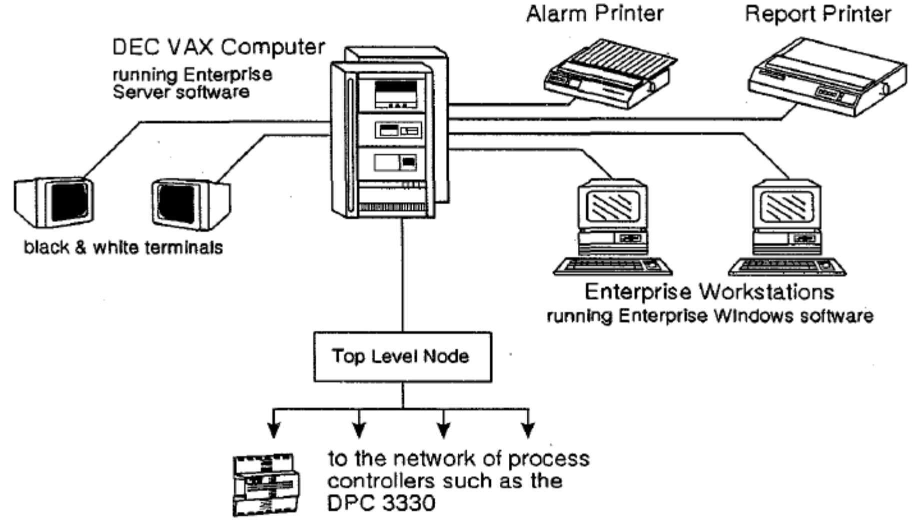
	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
4. The system as defined in claim 1, wherein each wireless transmitter is integrated with a sensor.	The above contentions for claim 1 are hereby incorporated by reference. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
5. The system as defined in claim 1, wherein the RF signal transmitted by the transceiver contains a concatenation of information comprising select information and transmitter identification information from the originating transmitter and transceiver identification information for each	The above contentions for claim 1 are hereby incorporated by reference. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5.

transceiver that receives and repeats the RF signal.	
6. The system as defined in claim 5, wherein the at least one transmitter is replaced by a transceiver, the transceiver further integrated with an actuator.	The above contentions for claim 5 are incorporated by reference. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

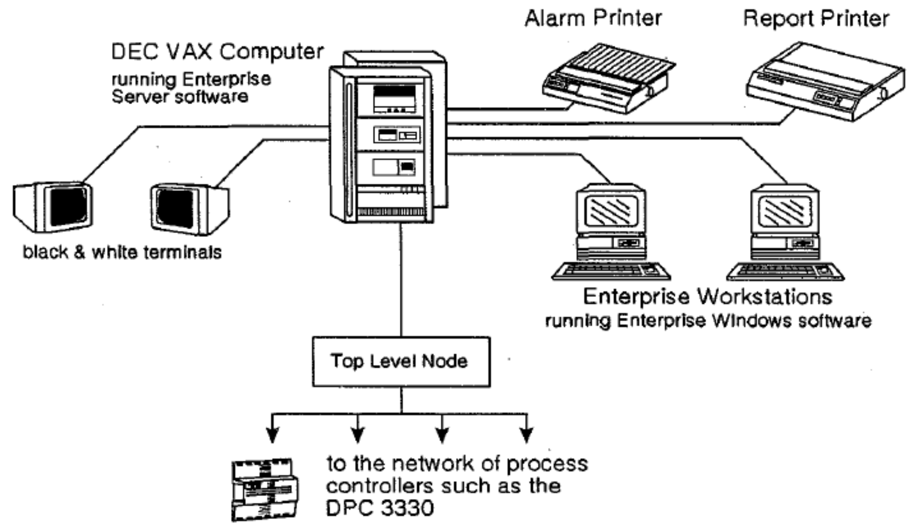
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

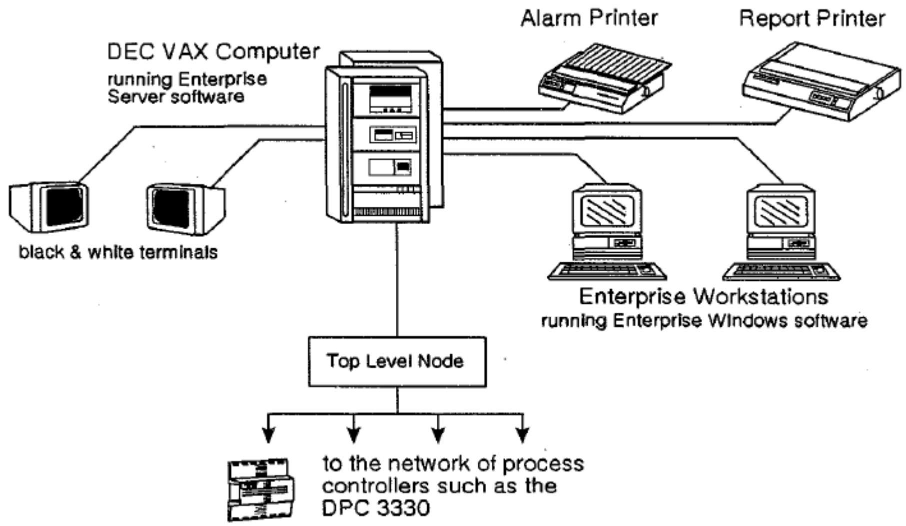
	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
7. The system as defined in claim 6, wherein the transceivers are configured to communicate with the gateway via a RF signal.	The above contentions for claim 6 are incorporated by reference. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000

	Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
8. The system as defined in claim 7, wherein the computer is further configured to respond to received select information by communicating a control signal to at least one transceiver, wherein the actuator integrated with the transceiver is responsive to the control signal.	The above contentions for claim 7 are hereby incorporated by reference. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
11. The system as defined in claim 1, wherein the gateway includes one selected from the group consisting of:	The above contentions for claim 1 are hereby incorporated by reference.

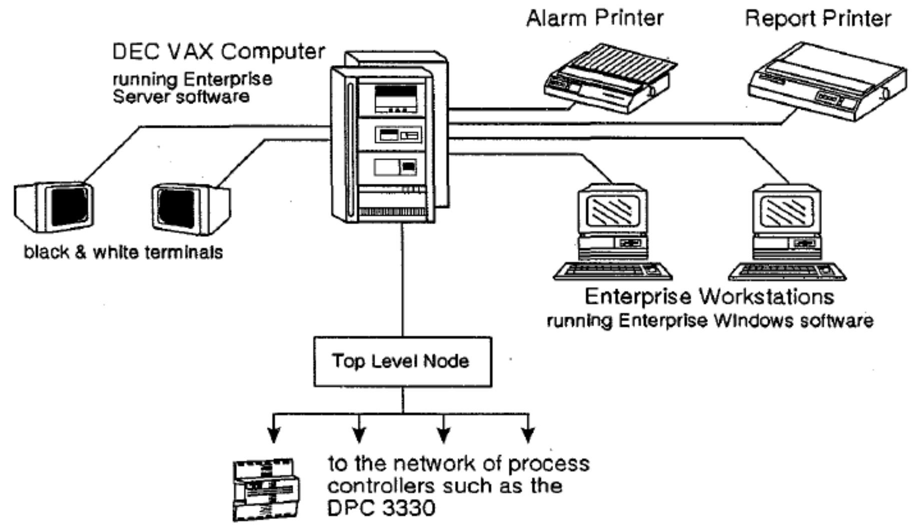
a modem for establishing a dial-up connection with a remote computer; a network card for communicating across a local area network; a network card for communicating across the WAN, a DSL modem; and an ISDN card to permit backup access to the computer.	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1.
12. The system as defined in claim 1, wherein the gateway translates the select information, the transmitter identification, and the transceiver identification information to TCP/IP for communication over the WAN.	The above contentions for claim 1 are hereby incorporated by reference.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

	"Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250.

	'217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

	‘773 patent discloses: “Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." ‘773 patent, 7:39-43. ‘773 patent, Figure 2. The ‘817 patent discloses: “FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1.” ‘817 patent, 6:1-8.
13. The system as defined in claim 1, wherein the WAN is the Internet.	The above contentions for claim 1 are hereby incorporated by reference.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

	"Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250.

	‘217 patent discloses: “The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module.” ‘217 patent, 46:11-16. ‘650 patent discloses “In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art.” ‘650 patent, 6:11-26. “Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers.” ‘650 patent, 8:42-44. “For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112.” ‘650 patent, 10:54-57.

	'773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
14. The system as defined in claim 1, wherein the WAN is a dedicated Intranet.	The above contentions for claim 1 are hereby incorporated by reference.

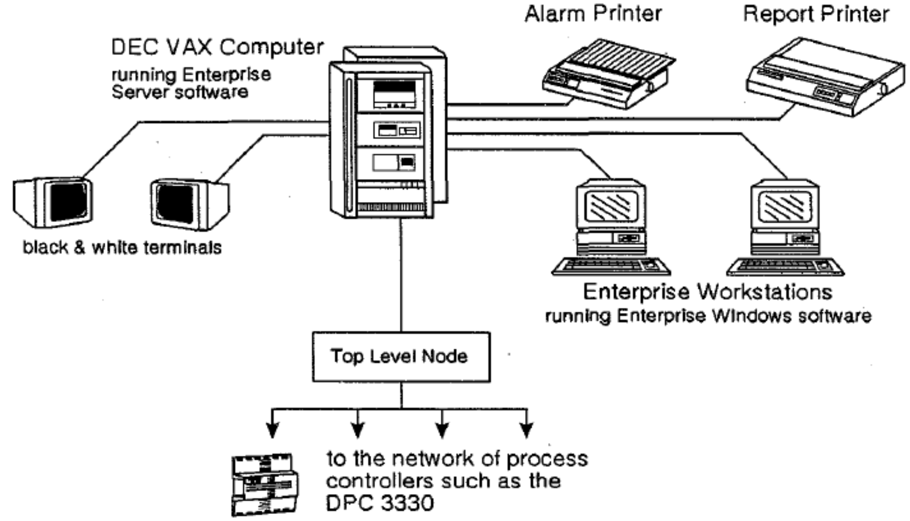
	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

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Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000

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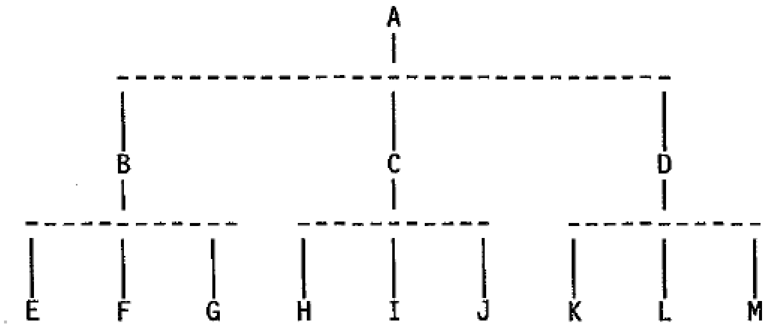
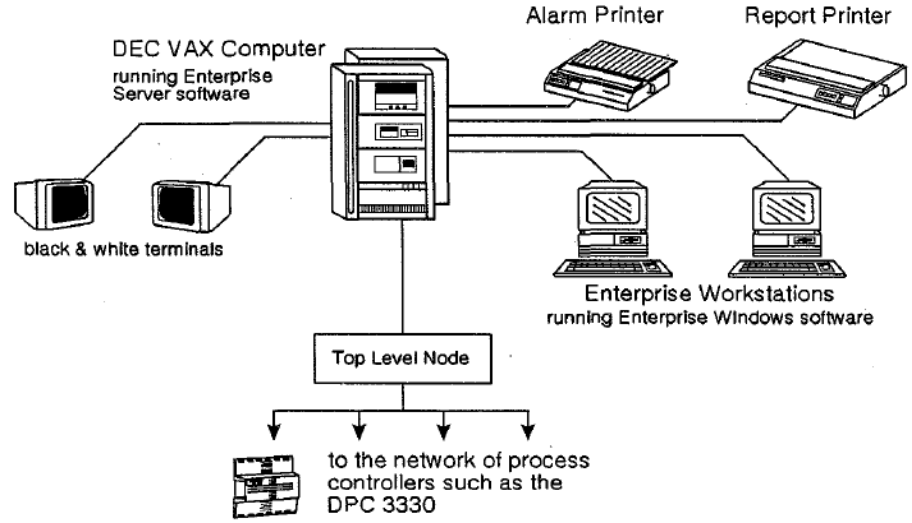
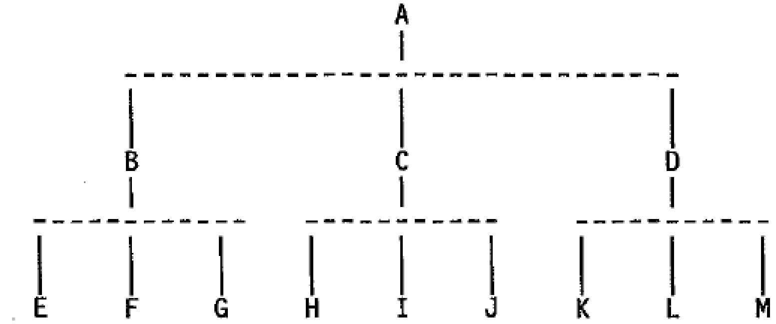
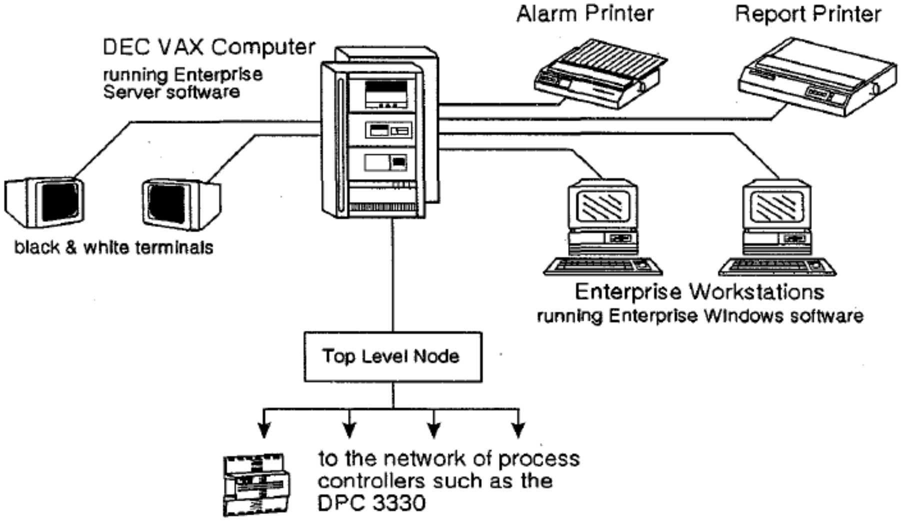
	'773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
24. A method for controlling a system comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

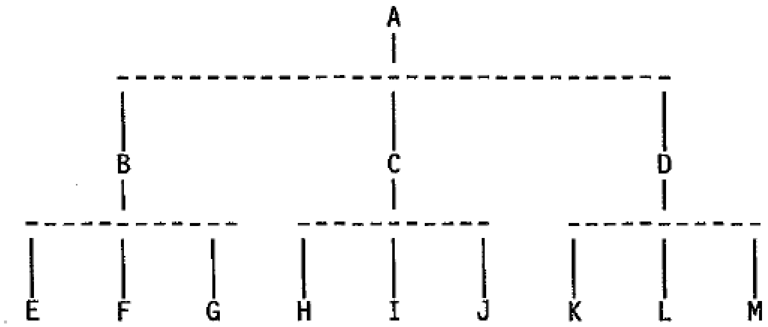
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. “Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer.” Network 3000

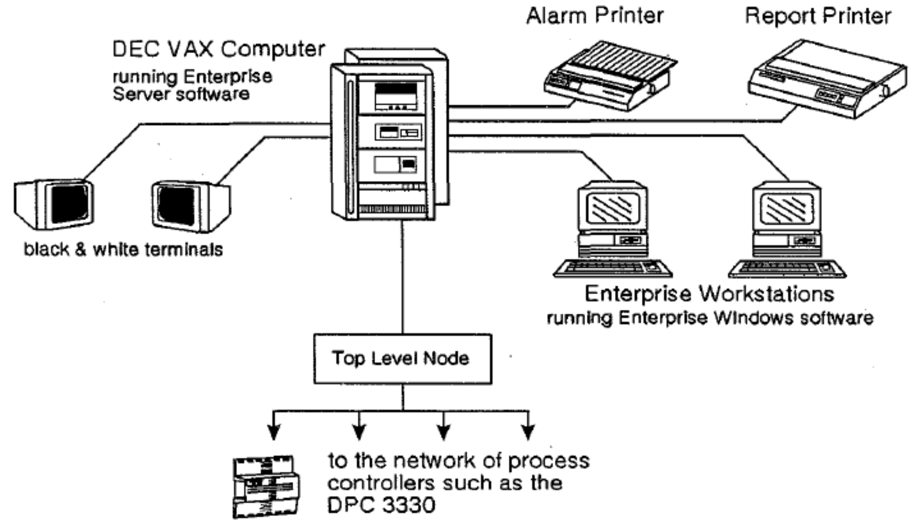
	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
remotely collecting data from at least one sensor;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

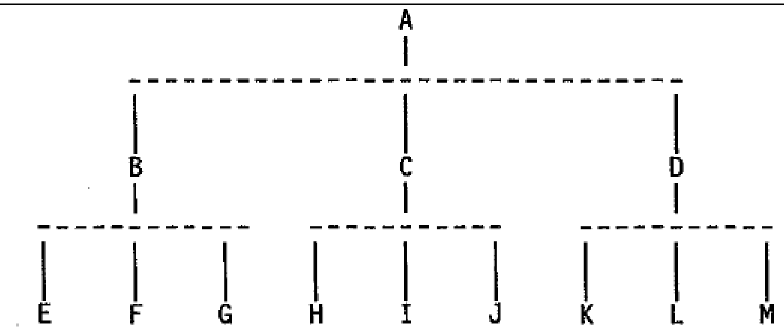
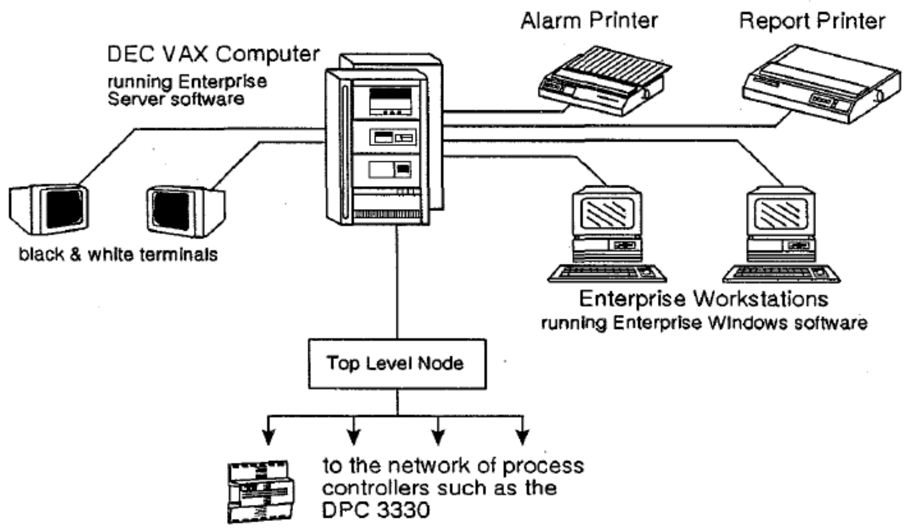
	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
processing the data into a radio-frequency (RF) signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

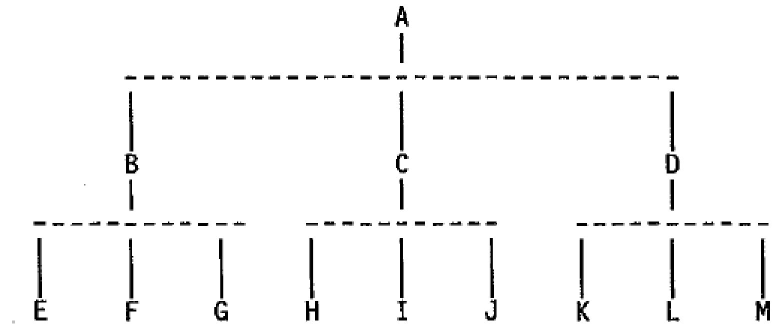
	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

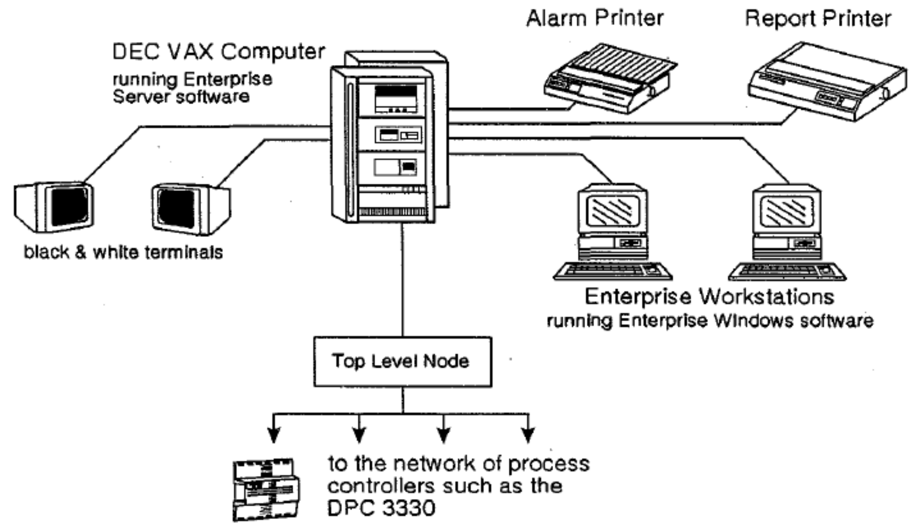
	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
transmitting the RF signal, via a relatively low-power transceiver, to a gateway;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000

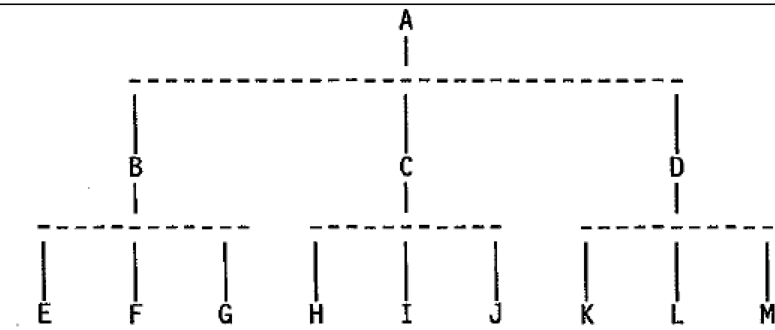
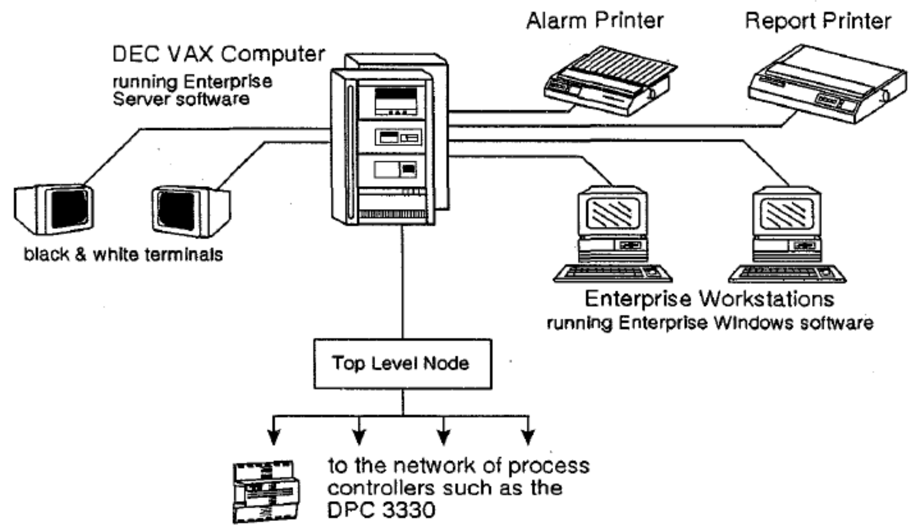
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
translating the data in the RF signal into a network transfer protocol;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by the at least one sensor by generating an appropriate control signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
sending the control signal via the network to the gateway,	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

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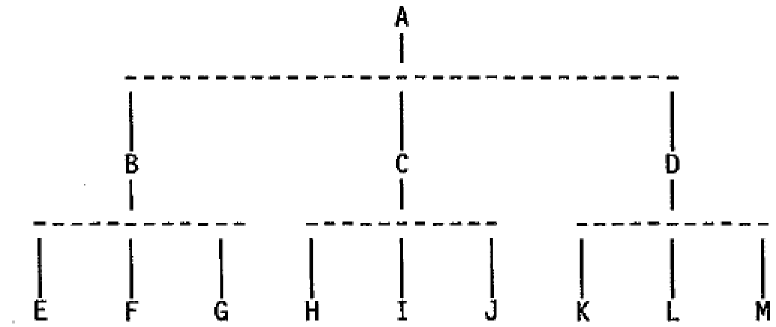
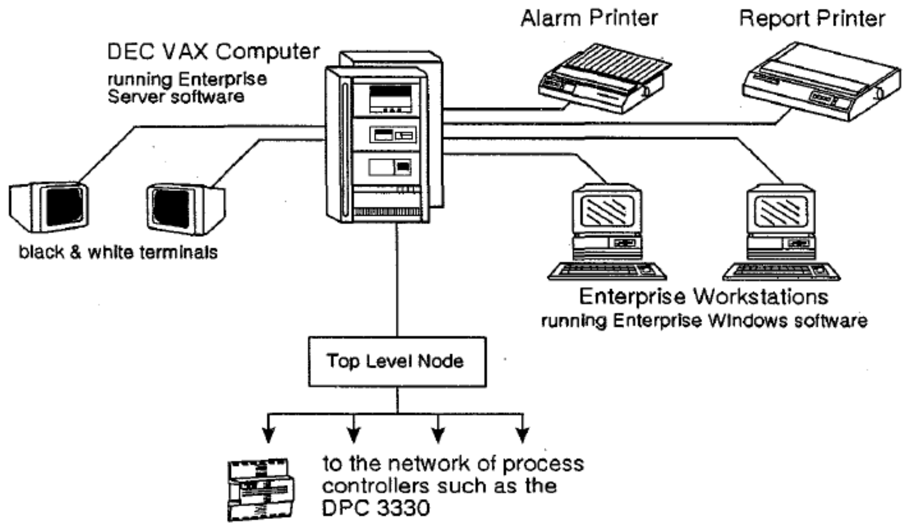
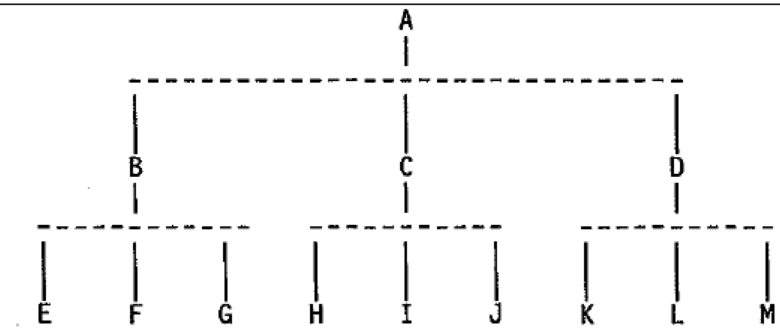
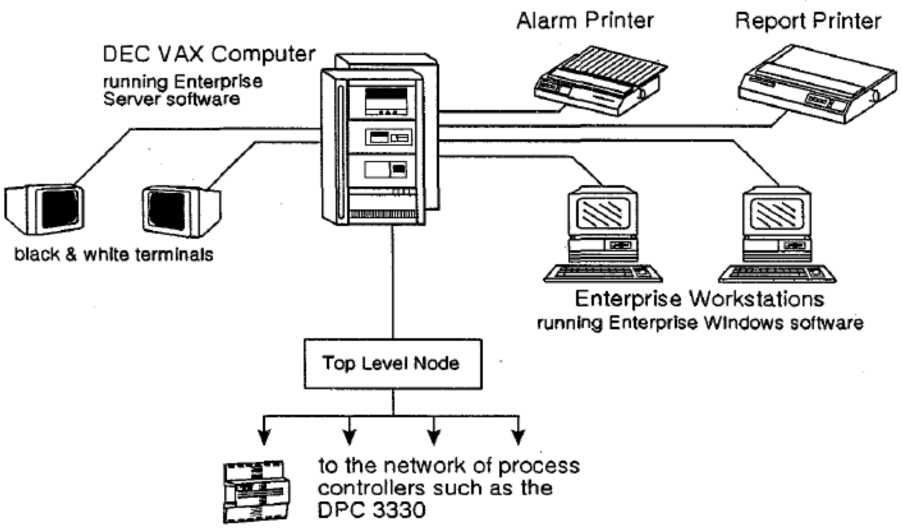
	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

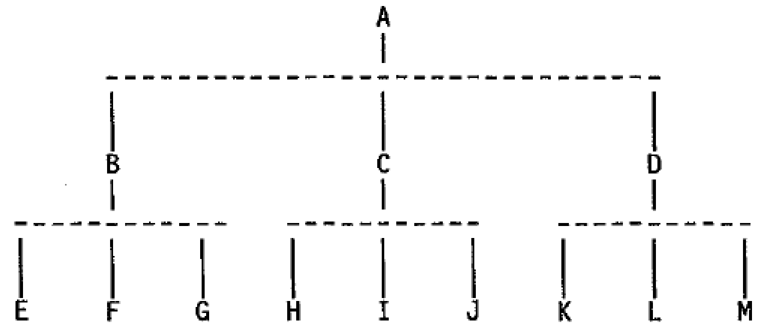
Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
translating the control signal from a network transfer protocol into an RF control signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
transmitting the RF control signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

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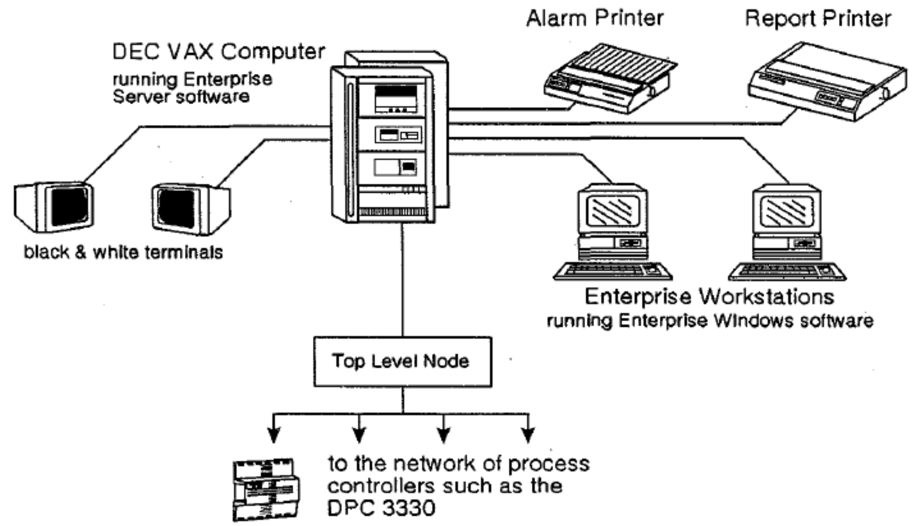
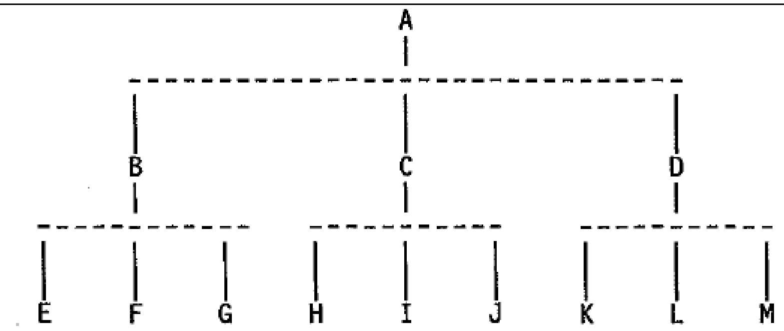
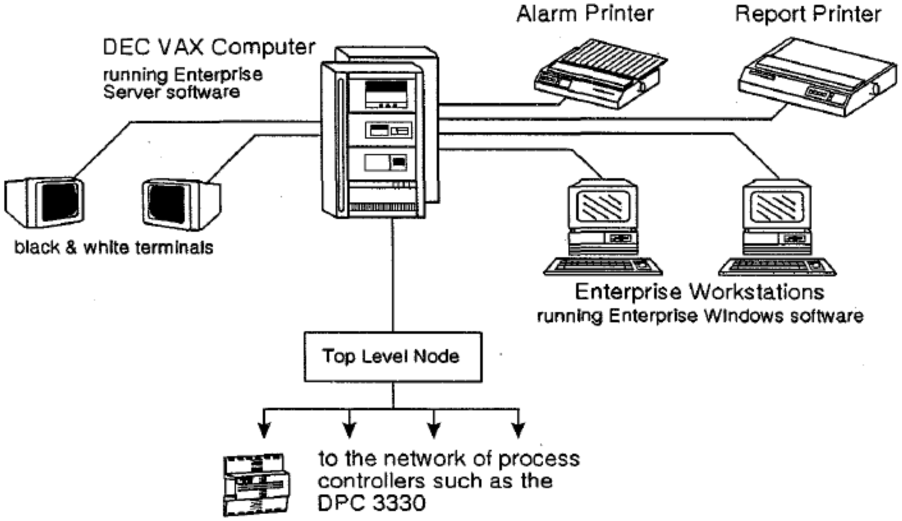
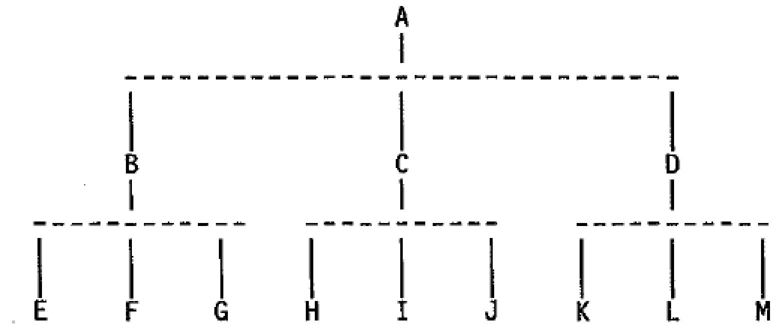
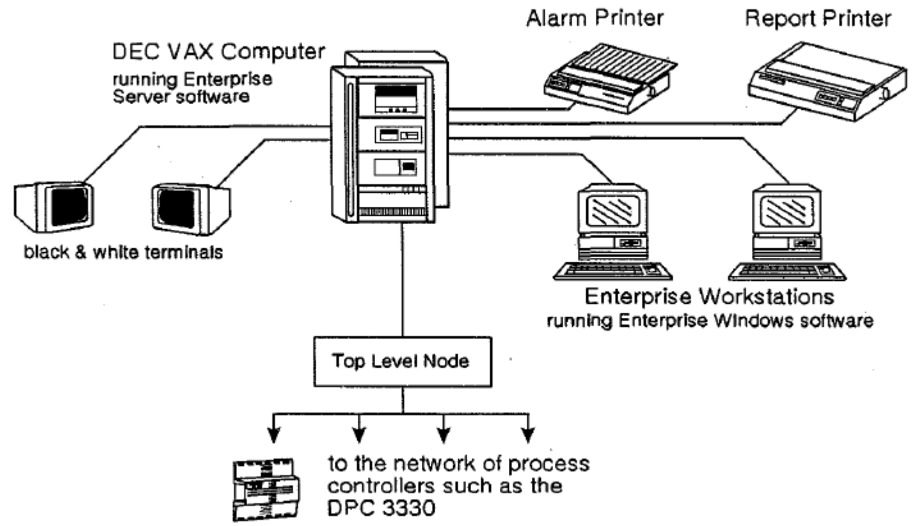
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
receiving the RF control signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

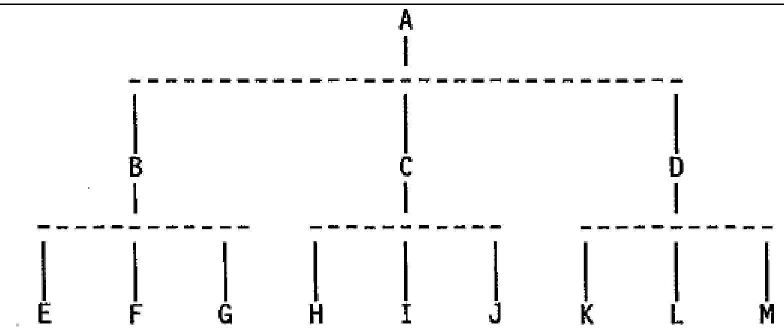
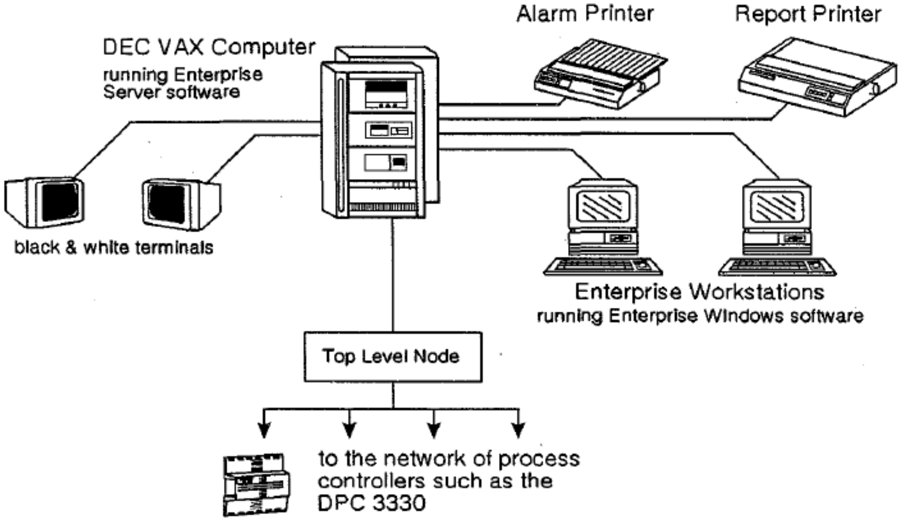
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
translating the received RF control signal into an analog signal; and	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
applying the analog signal to an actuator to effect the desired system response.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
25. The method of claim 24, wherein the RF signal contains a concatenation of information comprising encoded data information and transmitter identification information from an originating transmitter.	The above contentions for claim 24 are incorporated by reference. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000

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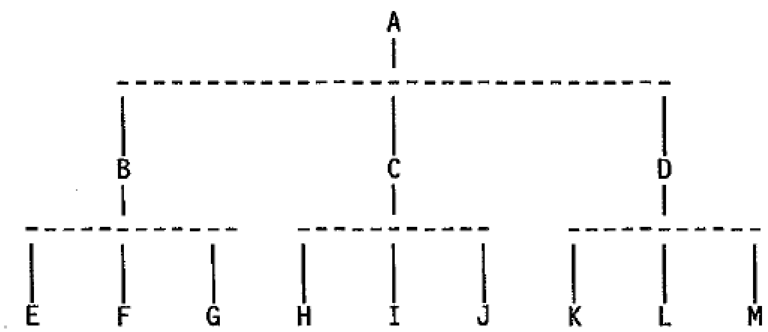
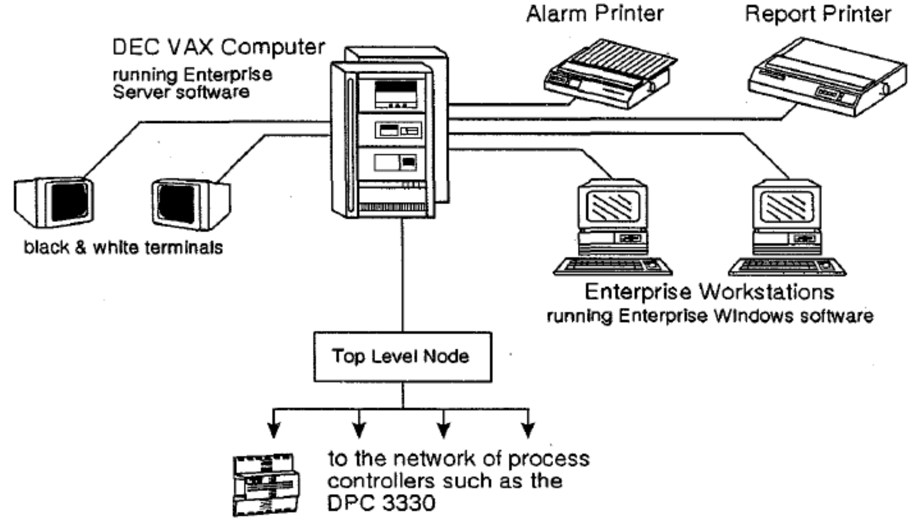
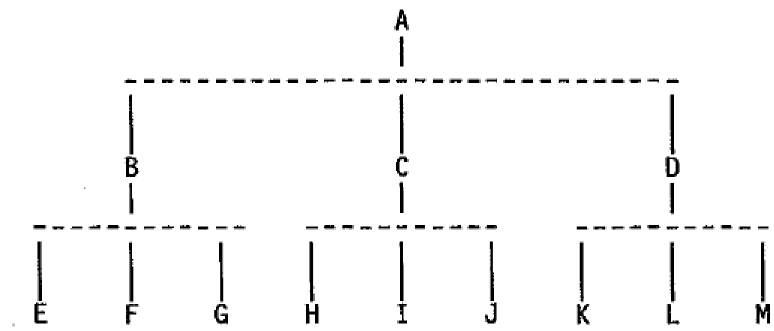
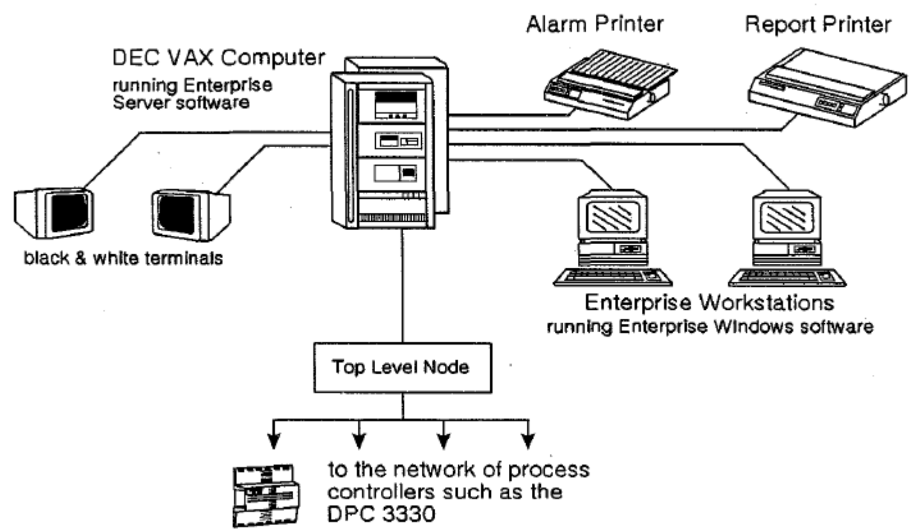
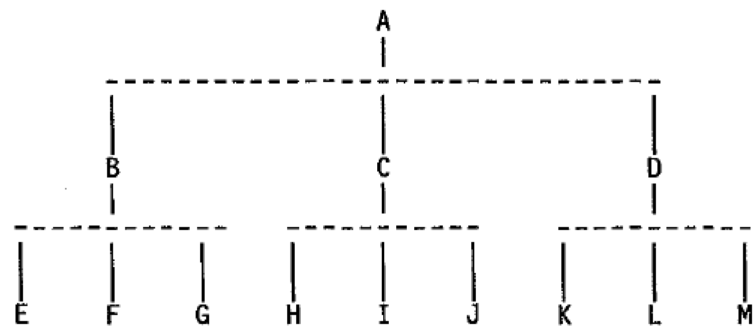
	Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

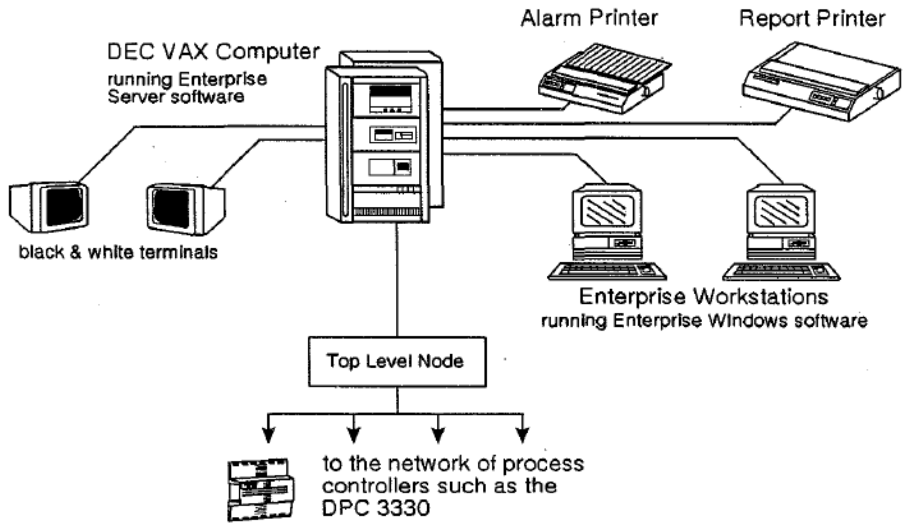
	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
26. The method of claim 25, wherein the step of transmitting the RF signal is further performed by at least one transceiver, wherein the transceiver is configured to concatenate a transceiver identification code to the RF signal.	The above contentions for claim 24 are incorporated by reference. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

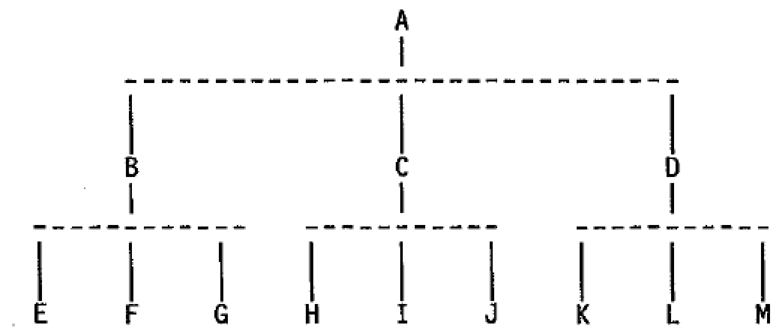
	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
27. The method of claim 25, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 25 are incorporated by reference. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link

	(such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
28. The method of claim 25, wherein the steps of translating and applying the received RF control signal are performed only by an identified transceiver electrically integrated with an actuator.	The above contentions for claim 25 are incorporated by reference. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000



Network 3000 CUG, p. 6.

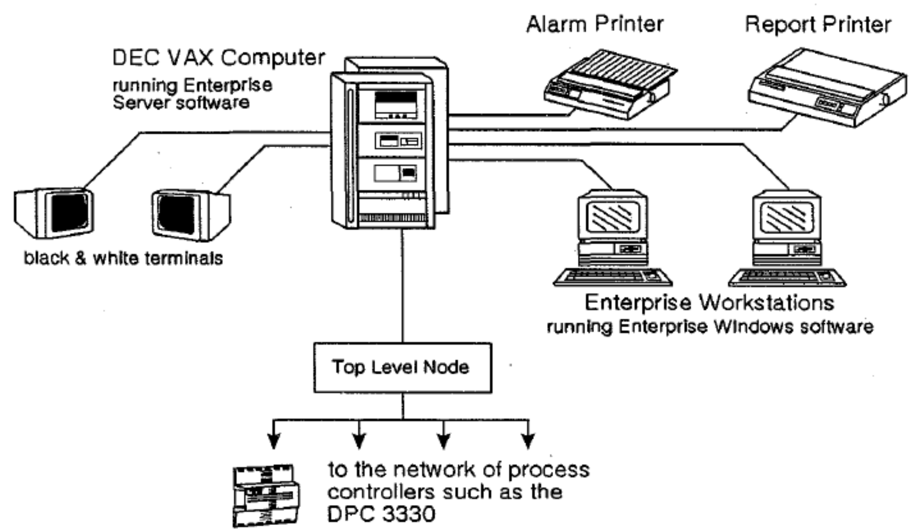


Figure 1-1
Typical System Configuration

Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
29. The method of claim 25, wherein the network is the Internet.	The above contentions for claim 25 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 3. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 4. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
30. The method of claim 25, wherein the network is an Intranet.	The above contentions for claim 25 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway

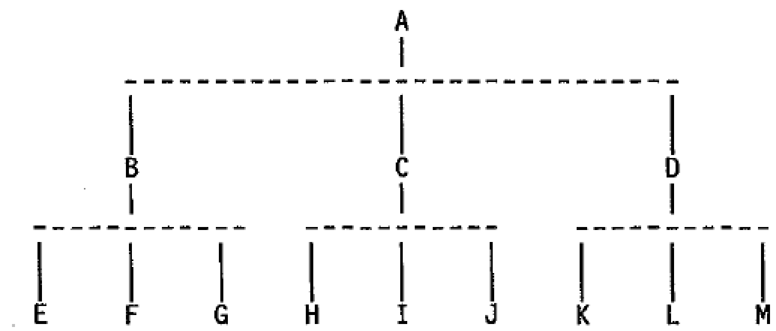
	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

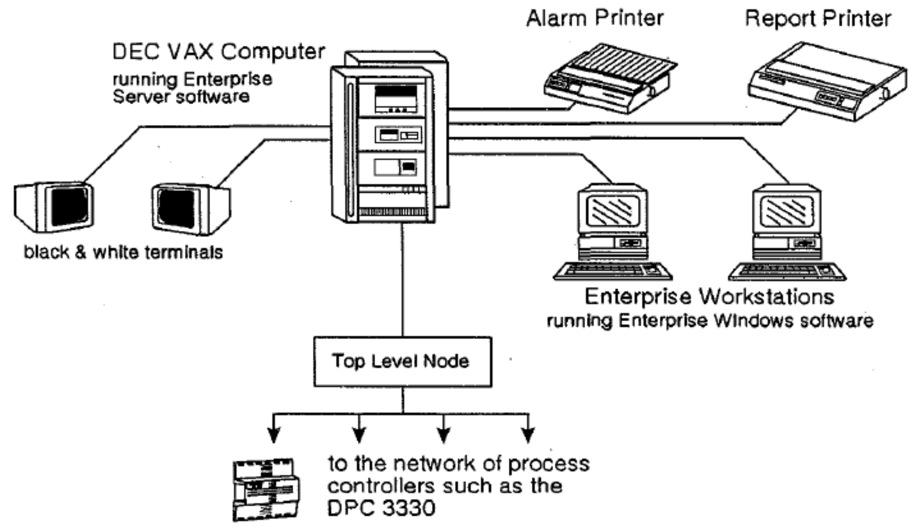
	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
31. The method of claim 25, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 25 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example:

	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250.

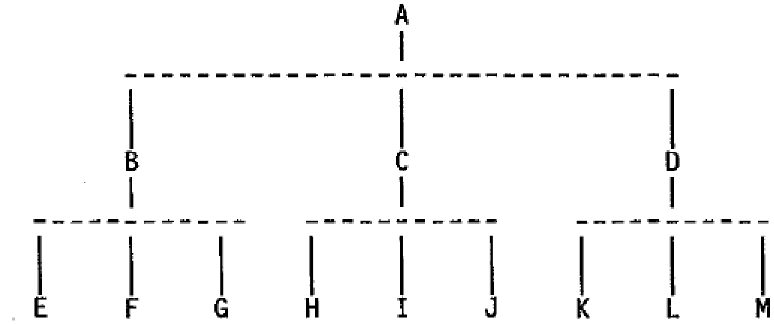
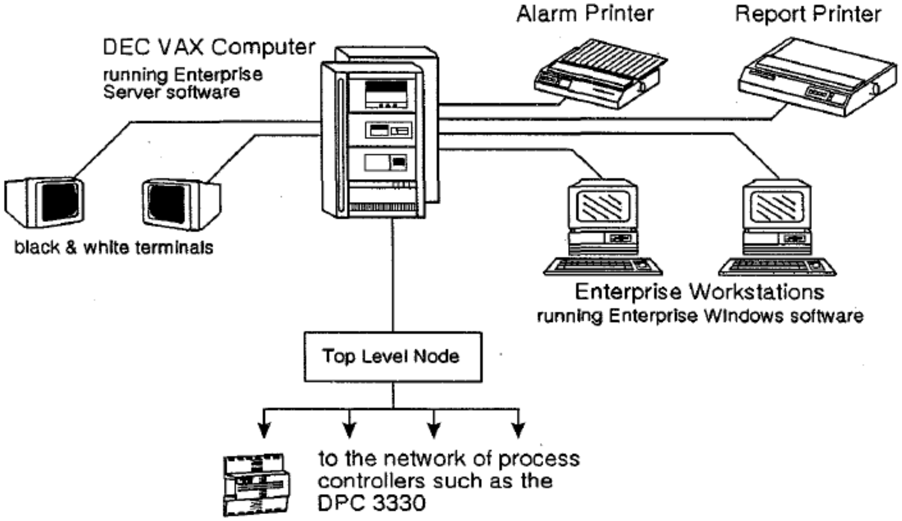
	"Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26.

	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
32. A system for monitoring remote devices comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.

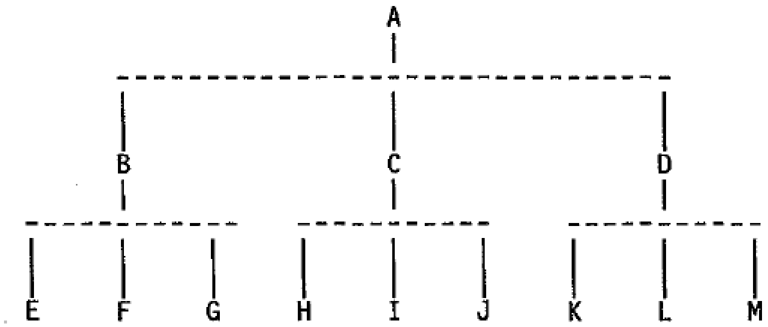
	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

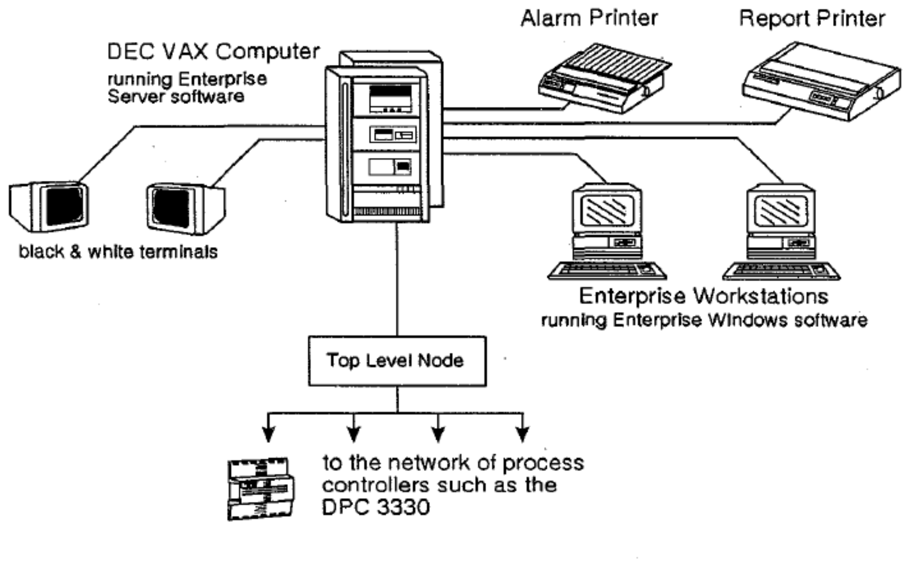
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

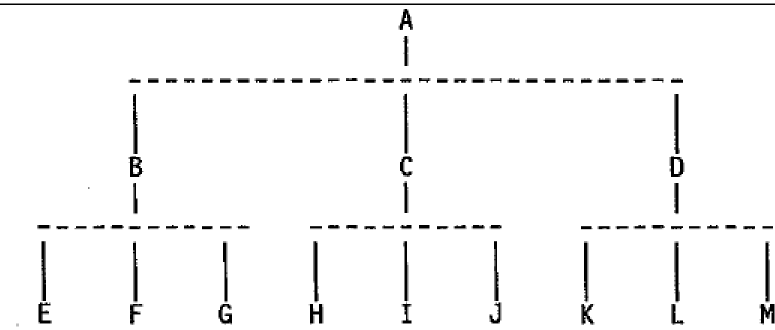
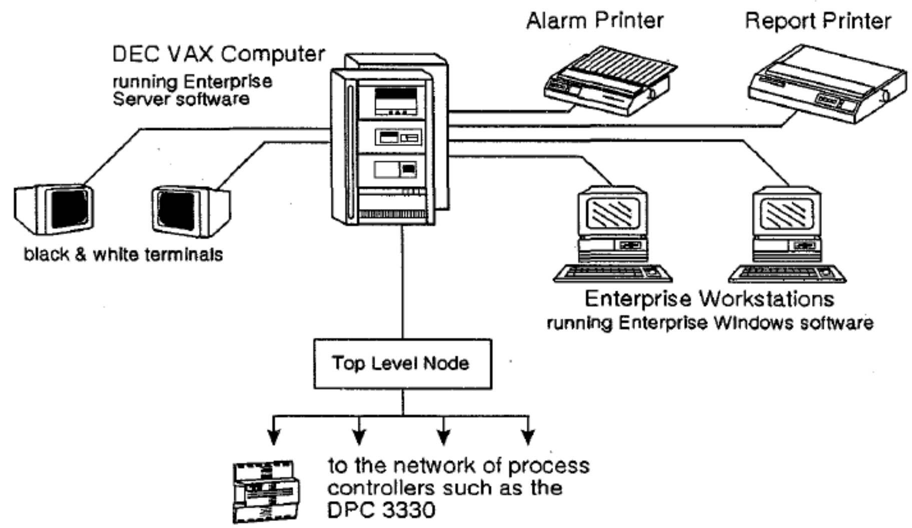
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one wireless transmitter configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a low-power radio-frequency (RF) signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one gateway connected a wide area network (WAN) configured to receive and translate the RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

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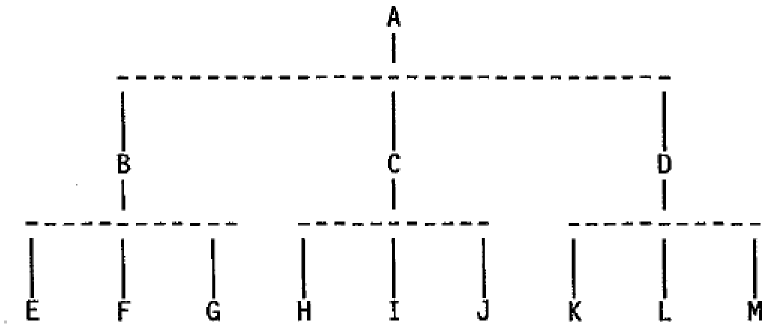
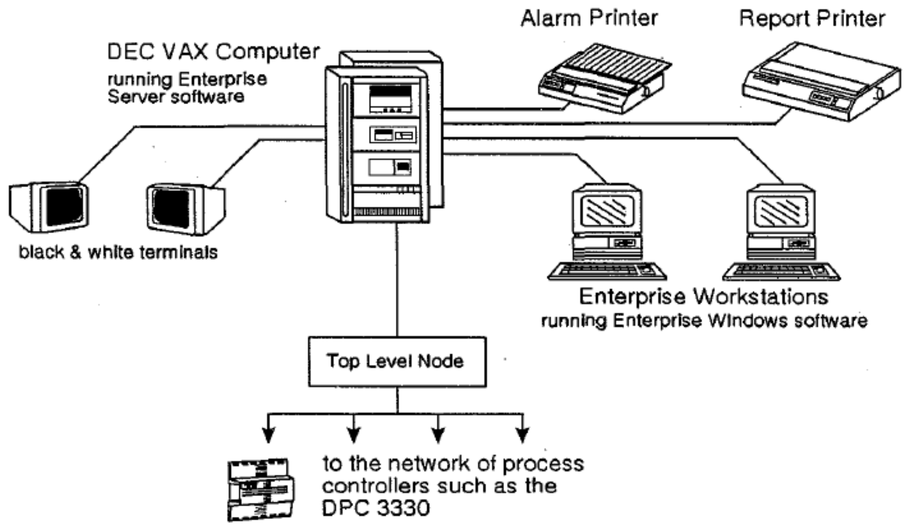
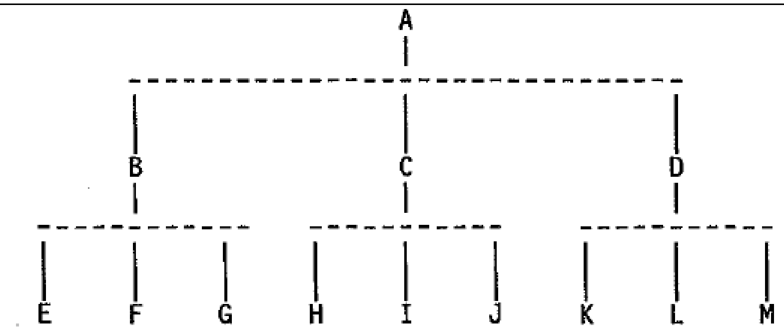
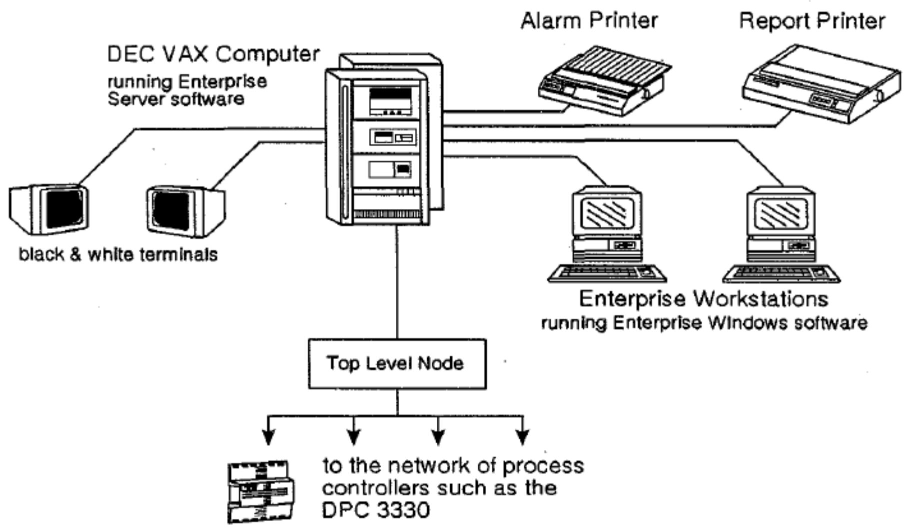
	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
34. The system defined in claim 32, wherein each wireless transmitter is configured to transmit a relatively low-power radio-frequency (RF) signal.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
36. The system defined in claim 32, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communicating over the WAN.	The above contentions for claim 25 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet

	gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 5. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 6. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical

	to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located

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	anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
37. The system defined in claim 32, wherein the WAN is the Internet.	The above contentions for claim 25 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 7. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 8. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

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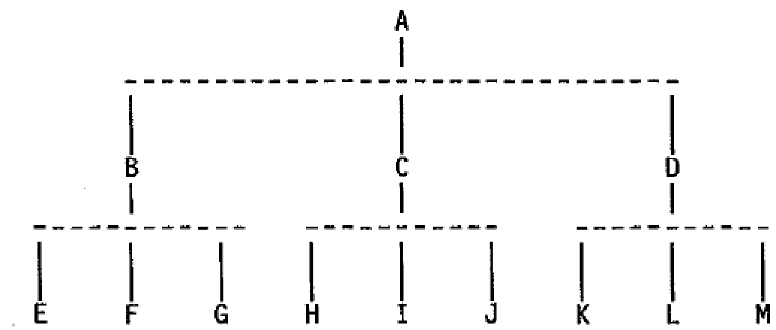
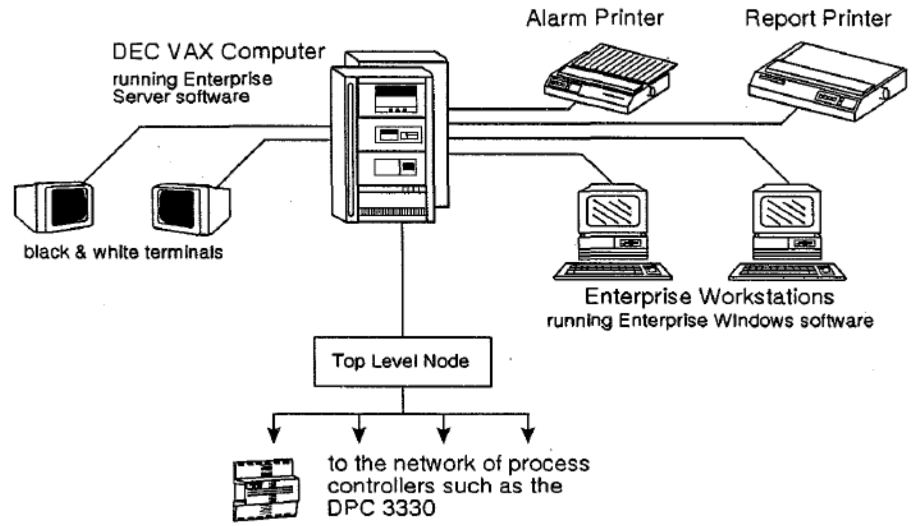
	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
38. The system defined in claim 32, wherein the WAN is a dedicated Intranet.	The above contentions for claim 25 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 9. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 10. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway

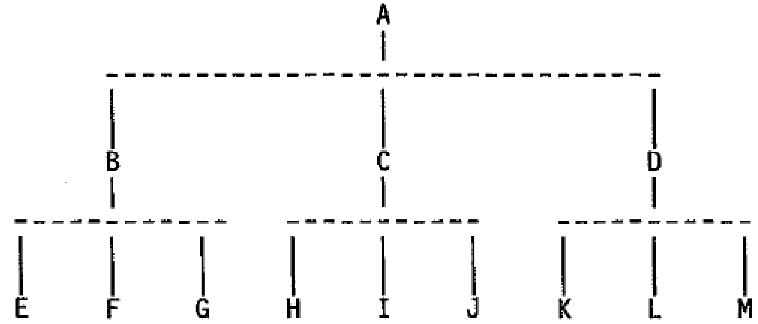
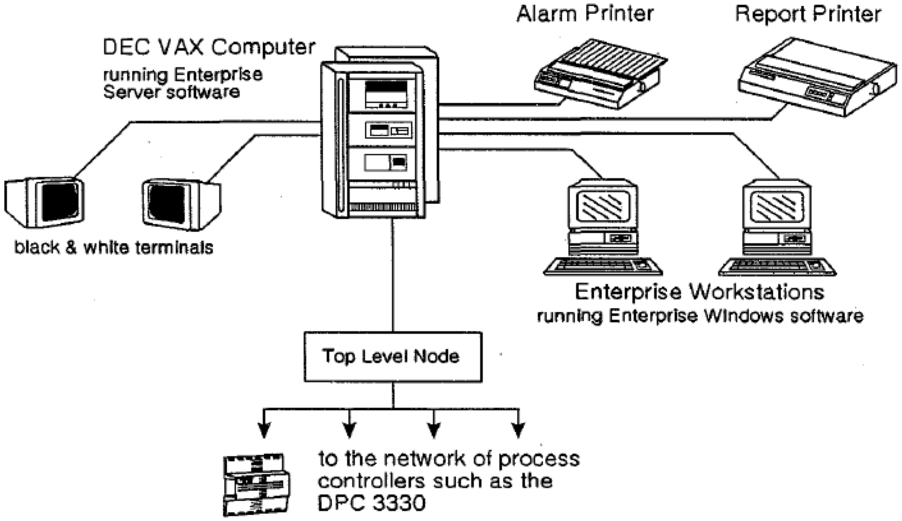
	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
42. A system for controlling remote devices comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link

	(such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one gateway connected to the WAN configured to receive and translate the at least one control signal; said gateway further configured to transmit a radio-frequency (RF) signal containing the control signal and destination information;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

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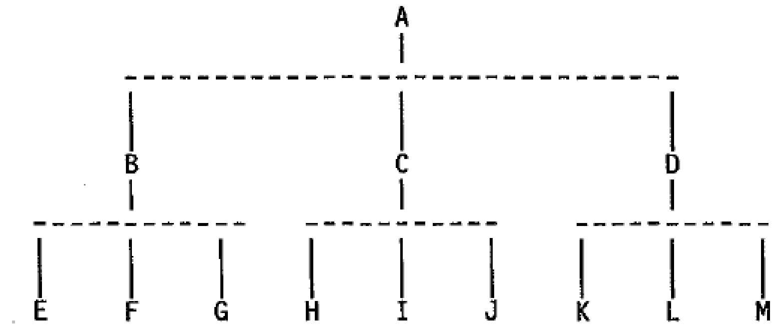
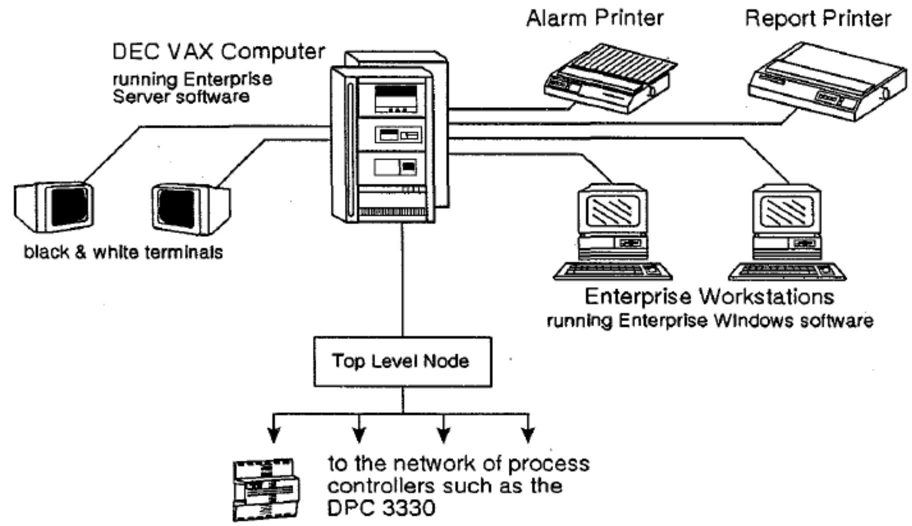
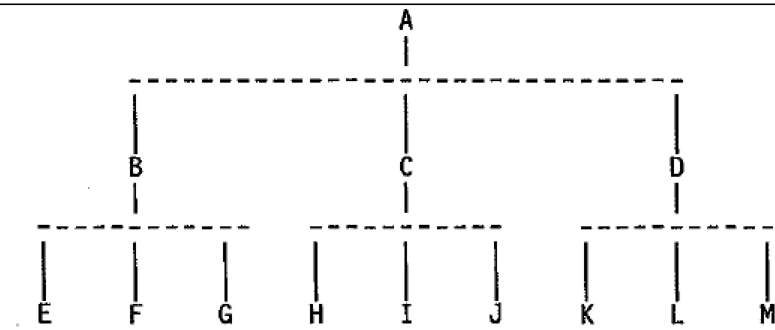
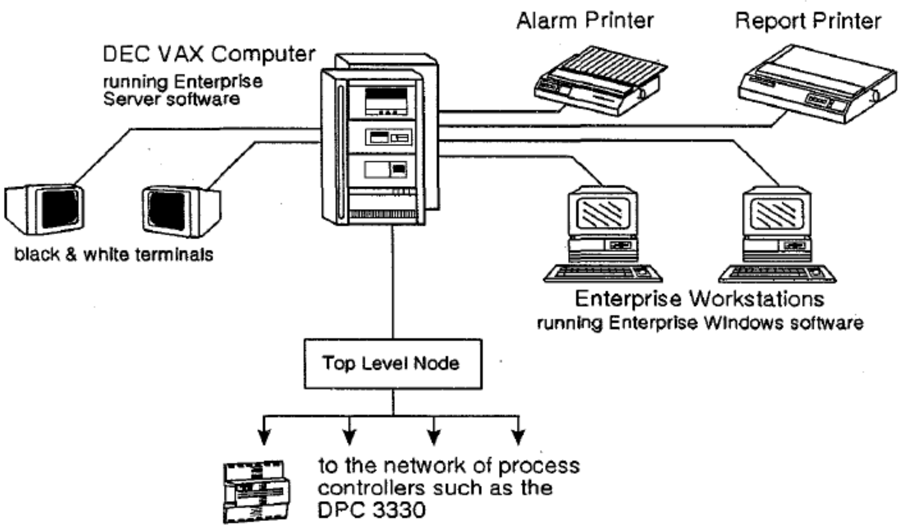
	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one wireless low-power RF transceiver configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator; and	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

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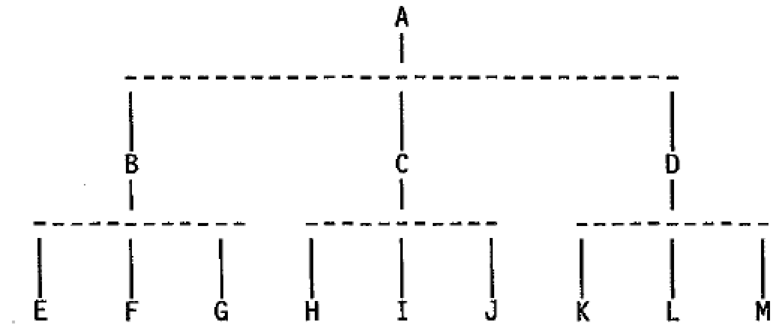
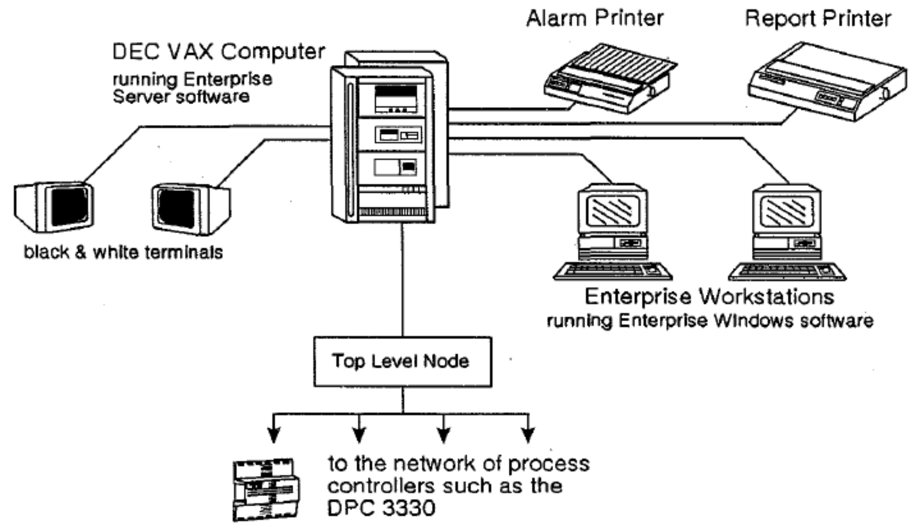
	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

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	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
43. The system defined in claim 42, the system input signal comprising:	The above contentions for claim 42 are hereby incorporated by reference.
a concatenation of information including data from a sensor, transceiver identification information from the originating transceiver, and transceiver identification information for each transceiver that receives and repeats the RF signal.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

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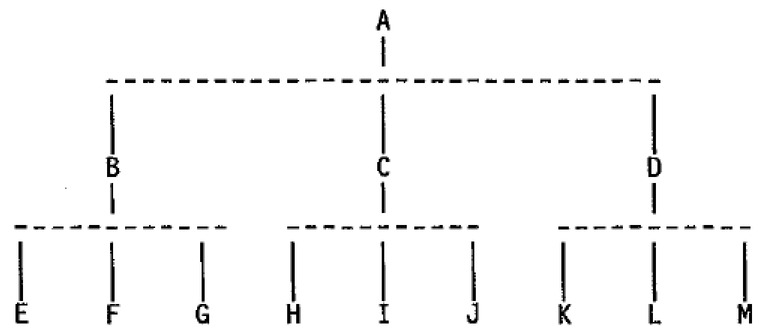
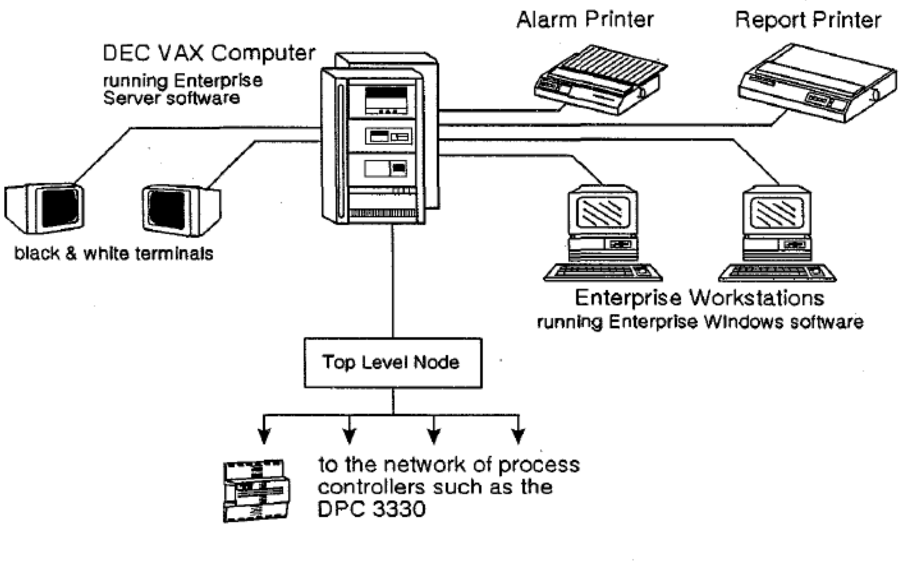
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5.
46. The system defined in claim 42, wherein the gateway translates the RF signal and the RF control signal into TC/IP for communication over the WAN.	The above contentions for claim 42 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this

	limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 11. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 12. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249.

	Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26.

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	"Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
47. The system defined in claim 42, wherein the WAN is the Internet.	The above contentions for claim 42 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with

	the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 13. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 14. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249.

	Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to

	implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
48. The system defined in claim 42, wherein the WAN is a dedicated Intranet.	The above contentions for claim 42 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a

	person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 15. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 16. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249.

	Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a

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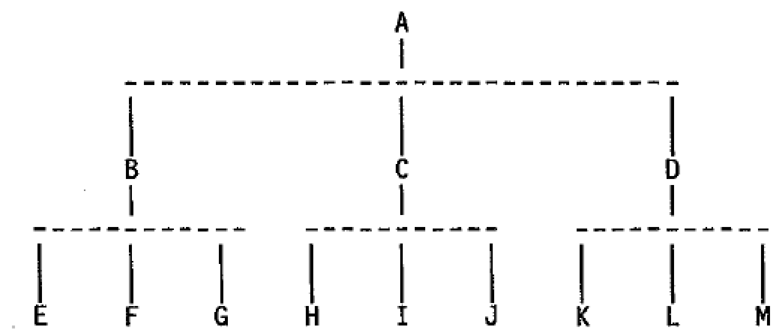
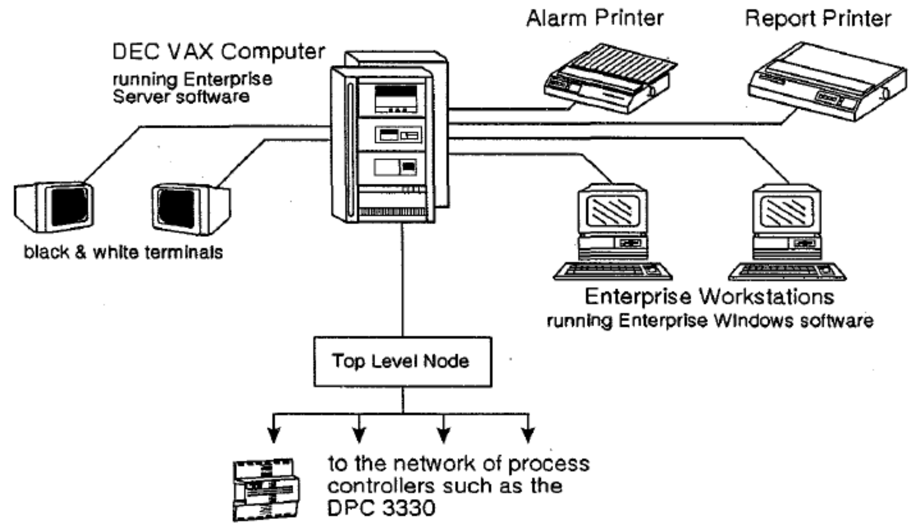
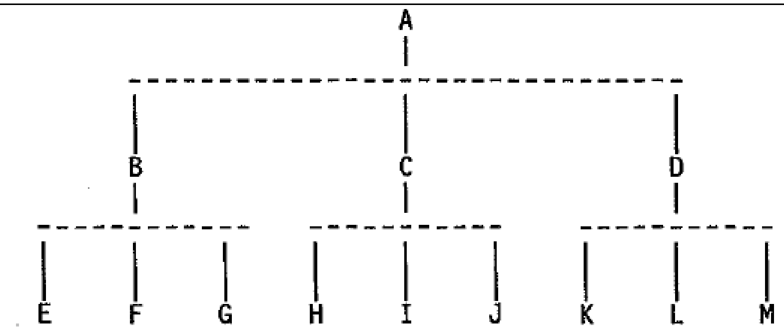
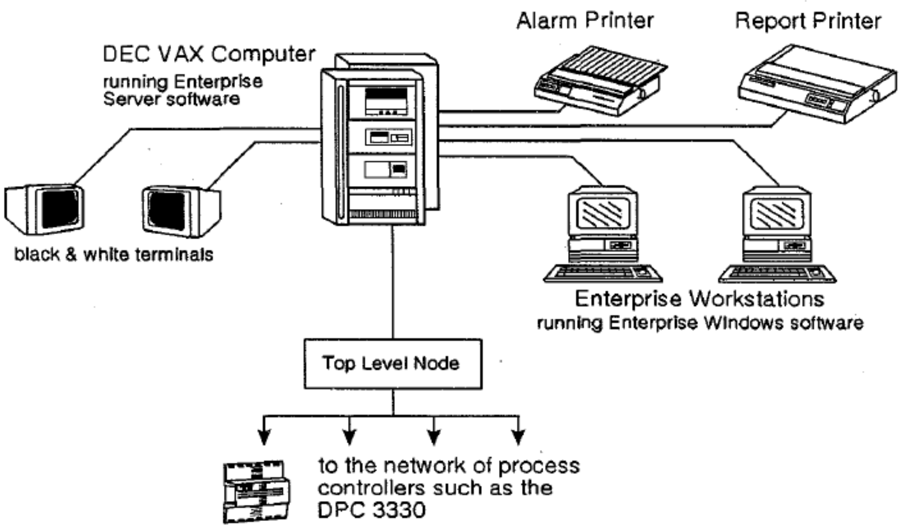
	form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
49. A system for managing an arrangement of application specific remote devices comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which

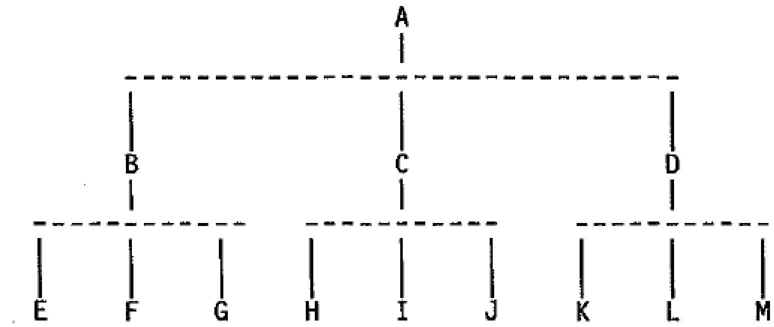
	may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

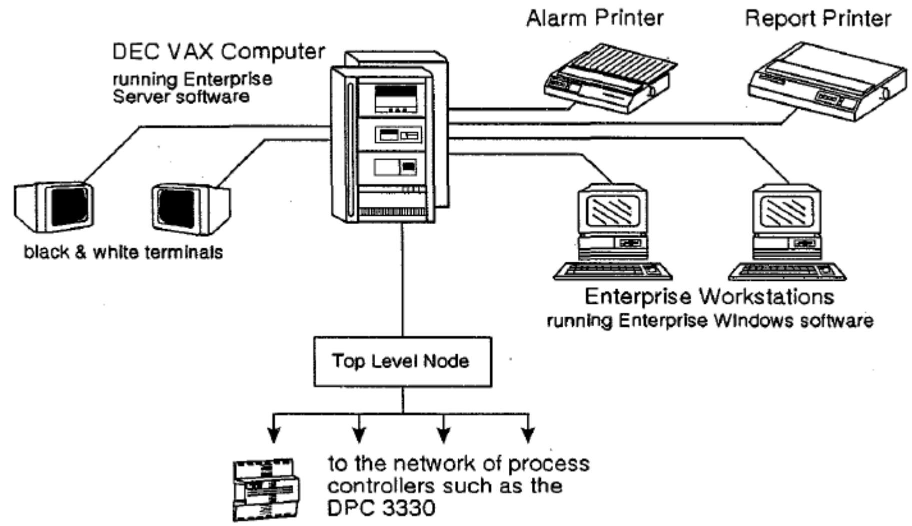
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a computer configured to execute a multiplicity of computer programs, each computer program executed to generate at least one control signal in response to at least one application system input, said computer integrated with a wide area network (WAN);	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one gateway connected to the WAN configured as a two-way communication device to receive and translate the at least one control signal and the at least one application system input; said gateway further configured to translate and transmit a radio-frequency (RF) signal containing the control signal and destination information, said gateway further configured to receive and translate the at least one application system input and source information;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one wireless relatively low-power RF transceiver per computer program configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator and a sensor;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

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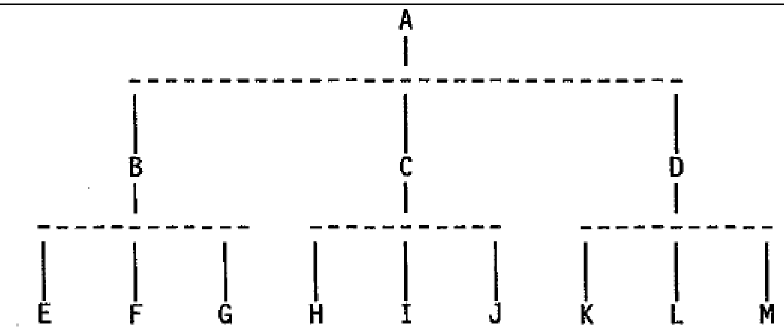
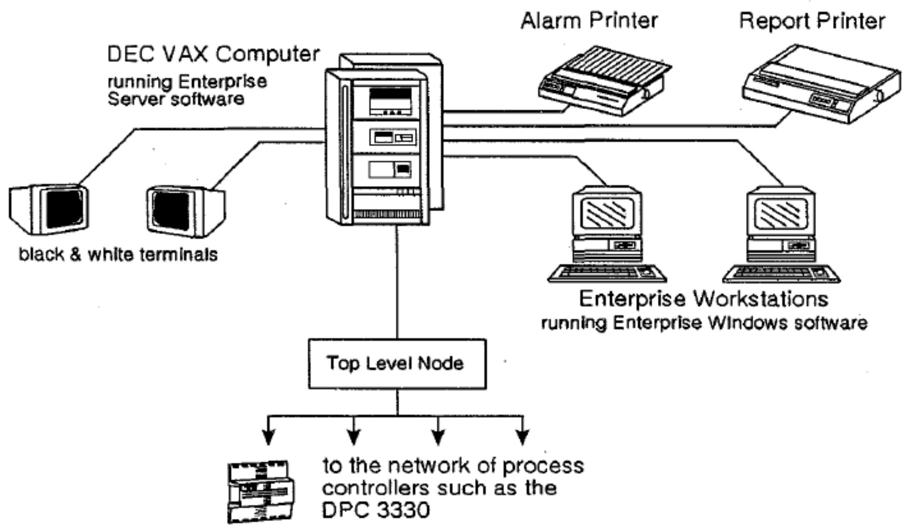
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response; and	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

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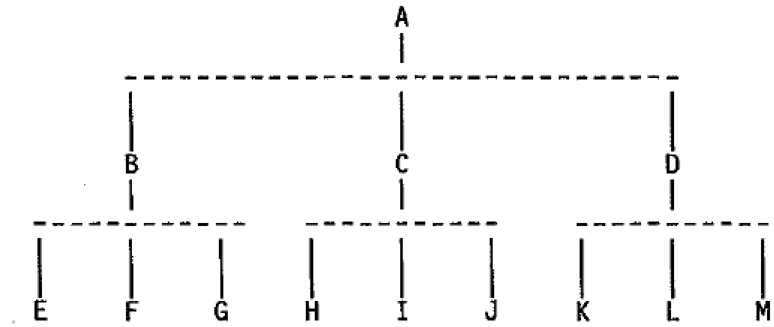
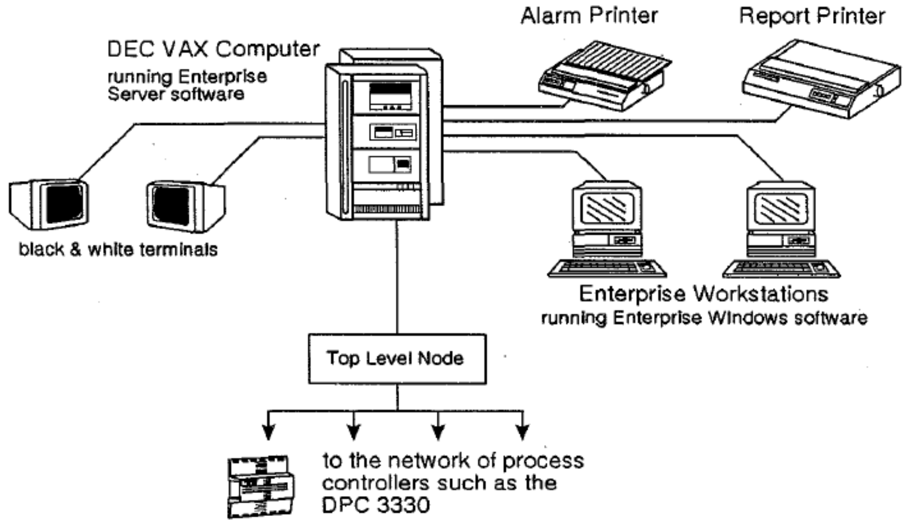
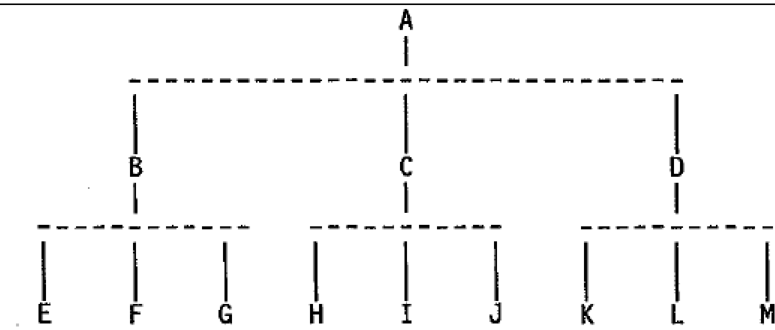
	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a sensor configured to translate a physical condition into an analog version of the application system input.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000



Network 3000 CUG, p. 6.

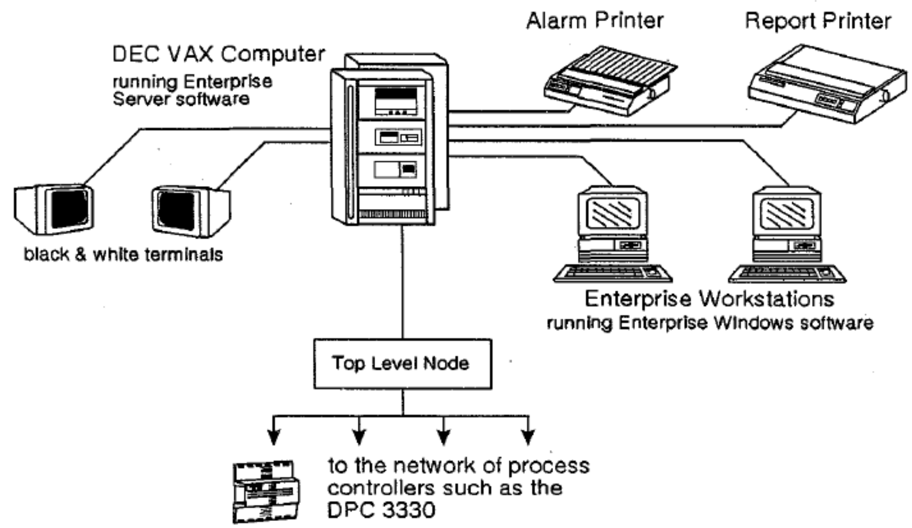


Figure 1-1
Typical System Configuration

Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
51. The system as defined in claim 49, wherein the at least one gateway translates the RF signal and the RF control signal into TCP/IP for communication over the WAN.	The above contentions for claim 49 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet

	gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 17. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 18. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical

	to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located

	anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
52. The system as defined in claim 49, wherein the WAN in the Internet.	The above contentions for claim 49 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 19. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 20. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol

	and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
53. The system as defined in claim 49, wherein the WAN is a dedicated Intranet.	The above contentions for claim 49 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses:

	"The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 21. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 22. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway

	function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44.

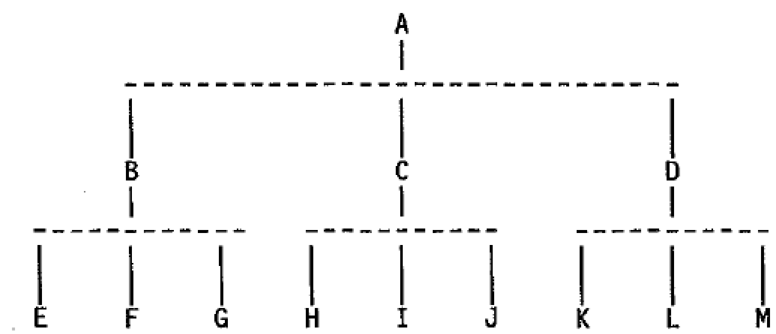
Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000

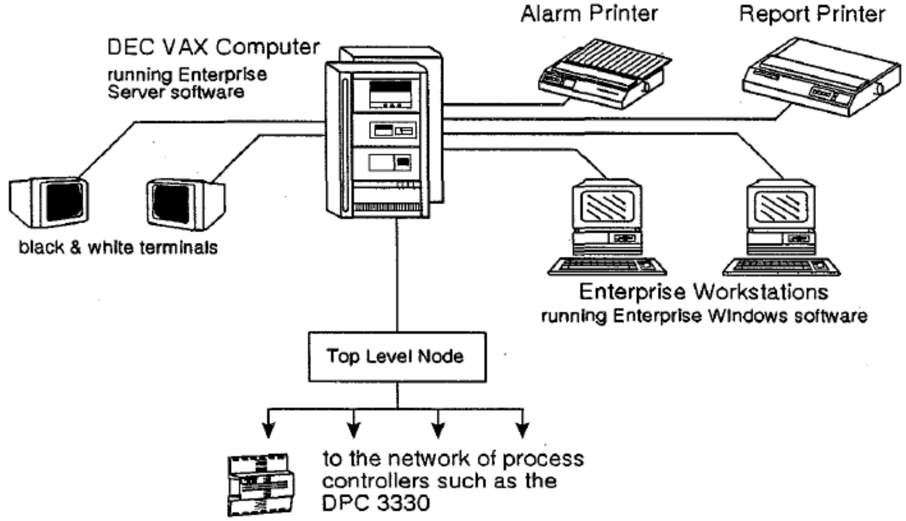
	"For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
54. The system as defined in claim 49, wherein the at least one gateway is connected to the WAN by a network selected from the group consisting of a telecommunications network, private radio-frequency network, and a computer network.	The above contentions for claim 49 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example:

	Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 23. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 24. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250.

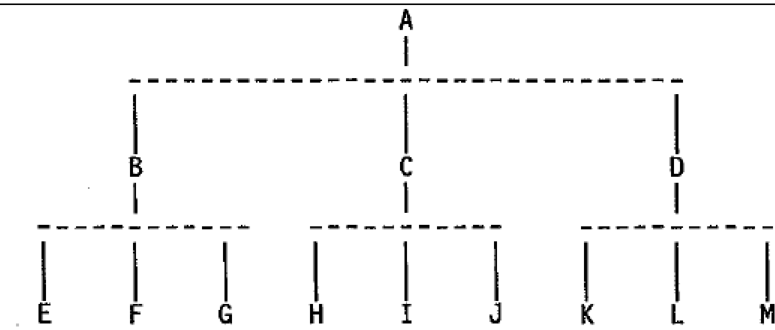
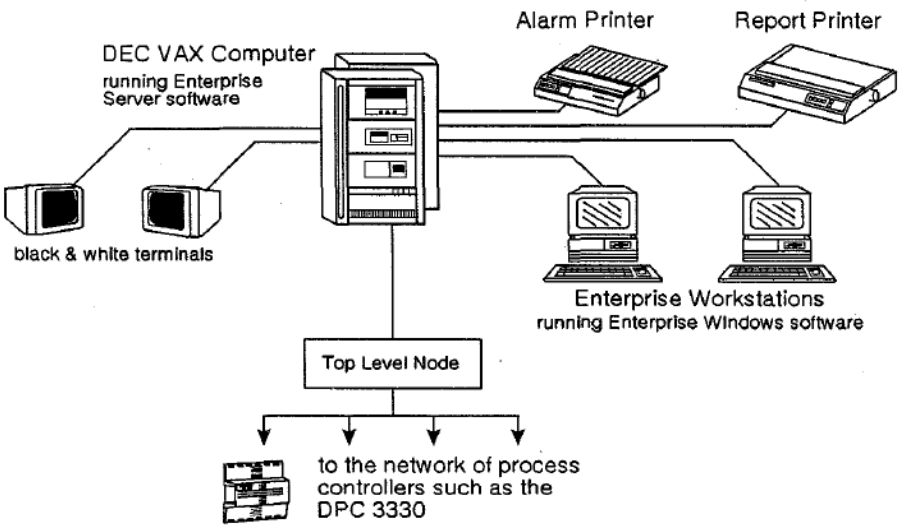
	"Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed

	over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
55. A method of collecting information and providing data services comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and

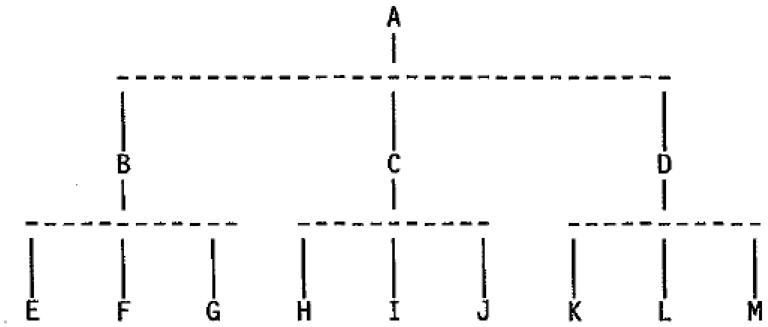
	process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

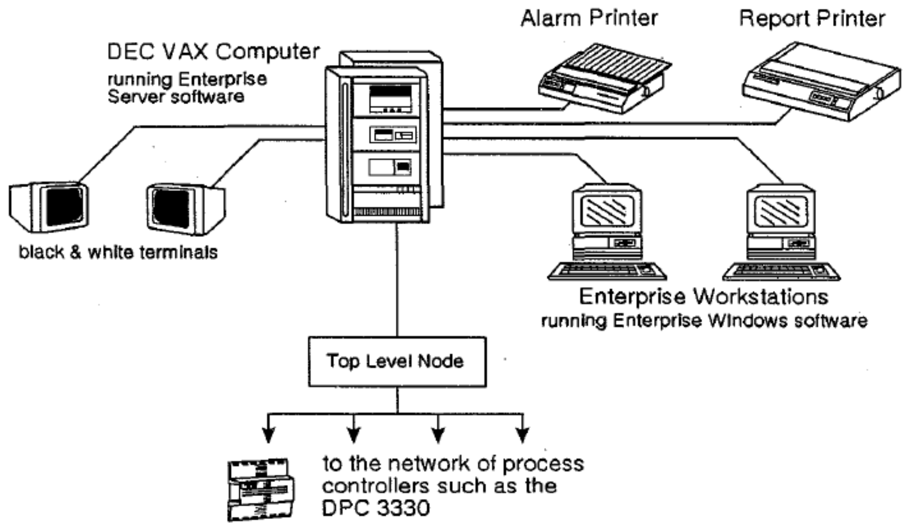
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
adaptively configuring a data translator at the output of a local controller, wherein the data translator converts the output data stream into an information signal consisting of a transmitter code and an information field;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

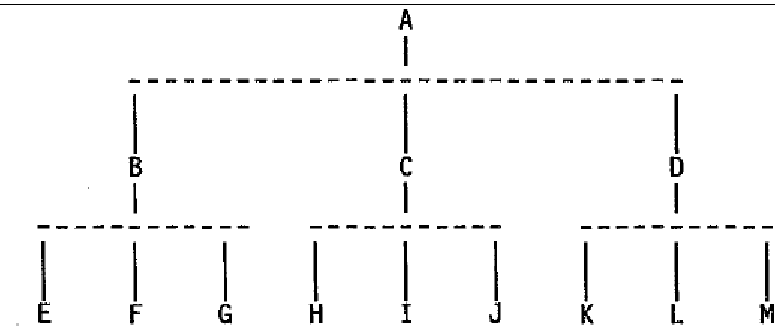
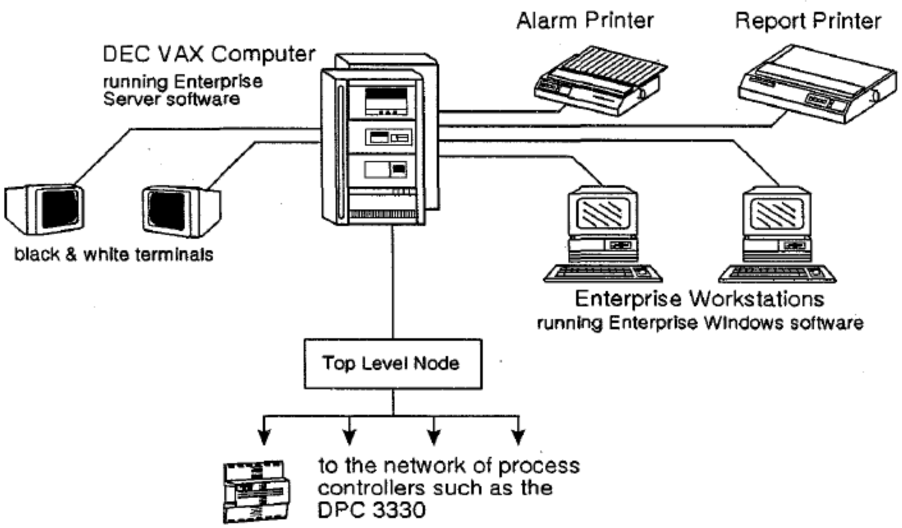
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
adaptively configuring at least one transmitter with the data translator, wherein the transmitter converts the information signal into a low-power RF signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
placing a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically wherein the low power RF signal is received and repeated as required to communicate the information signal to a gateway, the gateway providing access to a WAN;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

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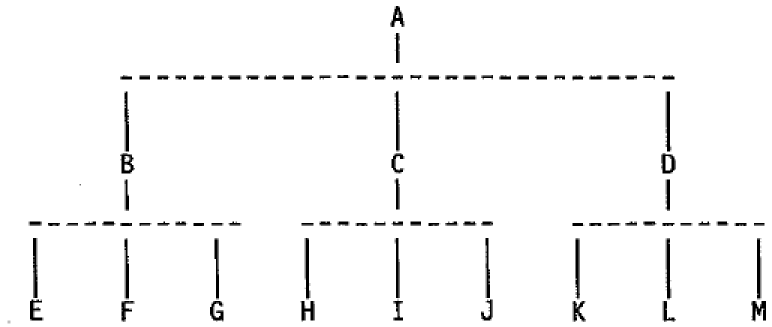
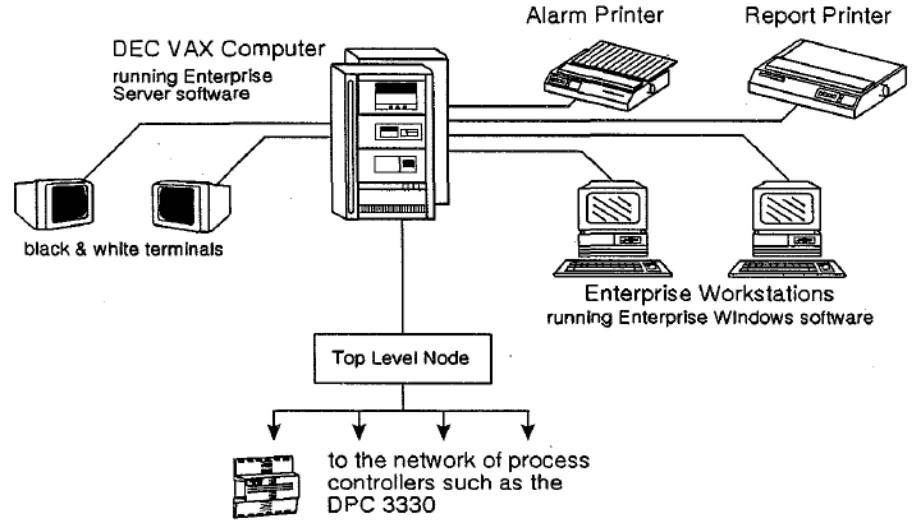
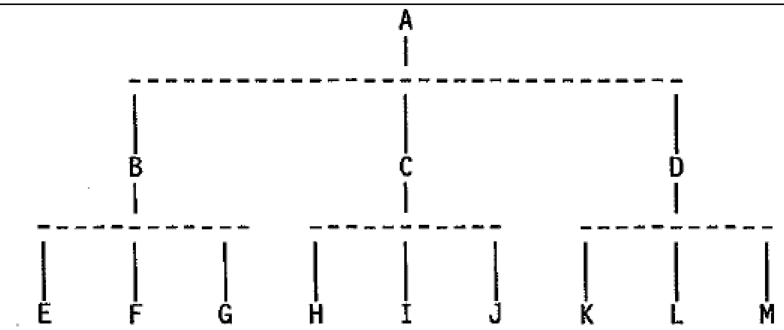
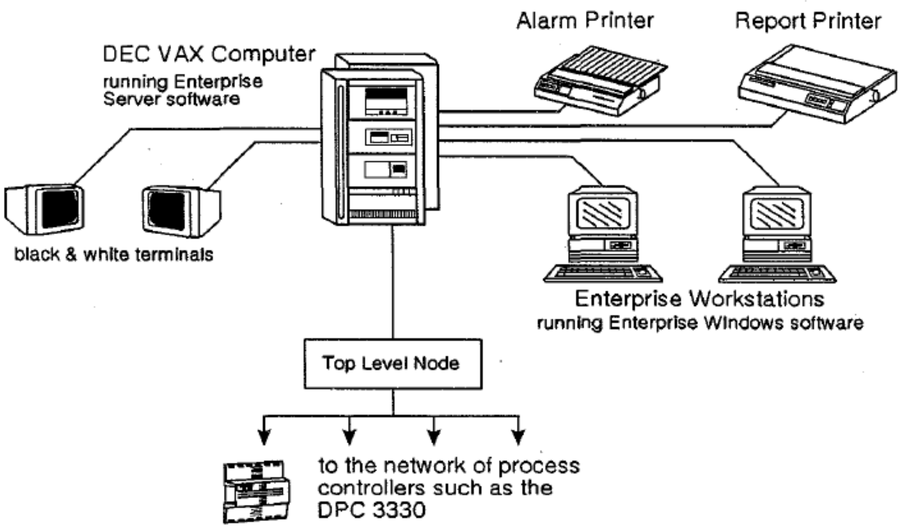
	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
translating the low-power RF signal within the gateway to a WAN compatible data transfer protocol;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

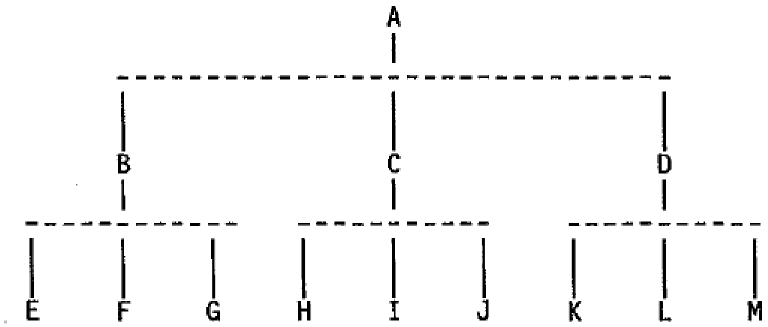
	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

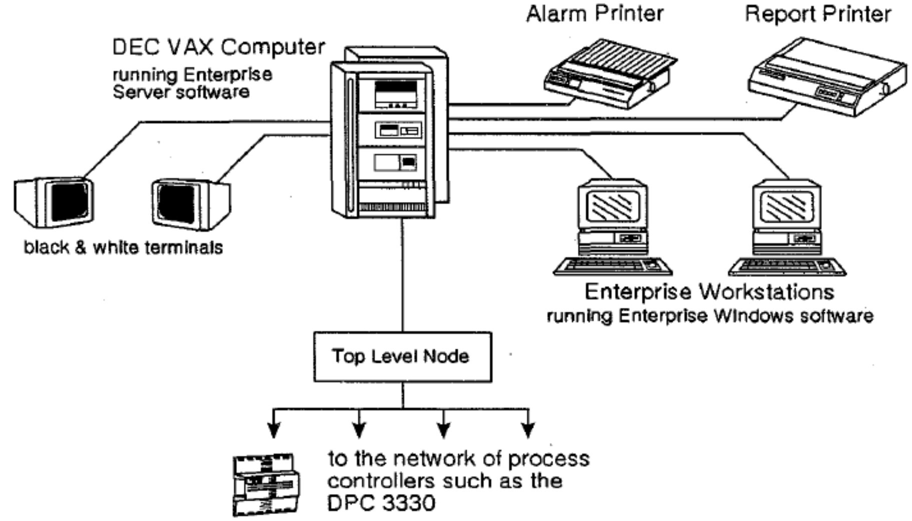
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
transferring the translated low-power RF signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in said signal; and	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
granting client access to the computer.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
56. The method of claim 55 wherein the WAN is the Internet.	The above contentions for claim 55 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22

	Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 25. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 26. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred

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	across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.

	The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
57. The method of claim 55 wherein the WAN is an Intranet.	The above contentions for claim 55 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22

	Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 27. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 28. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP)

	signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.

	The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
59. The method of claim 55 wherein the clients access the information using a web browser.	The above contentions for claim 55 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page

	22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 29. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 30. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving

	information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.

	'773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
60. A method for controlling an existing control system with a local controller comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six

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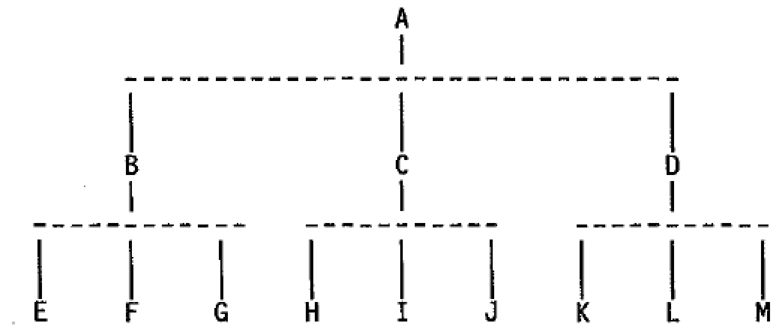
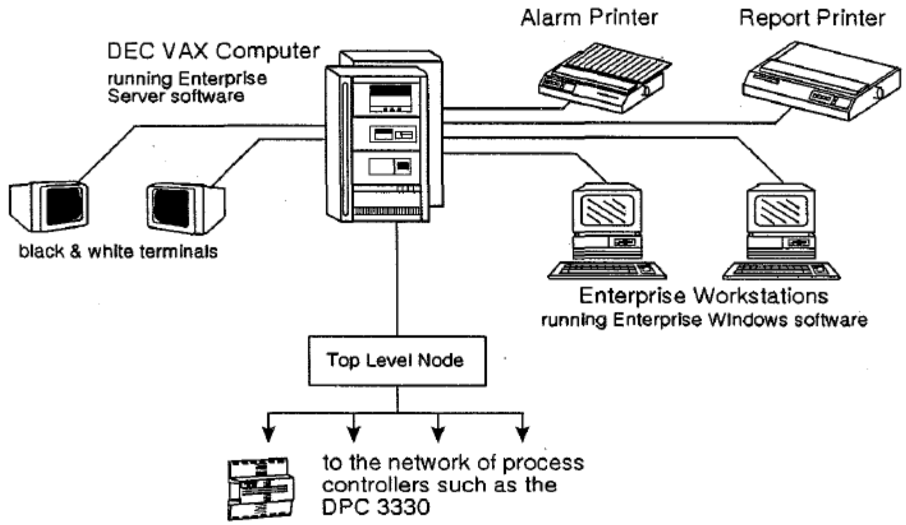
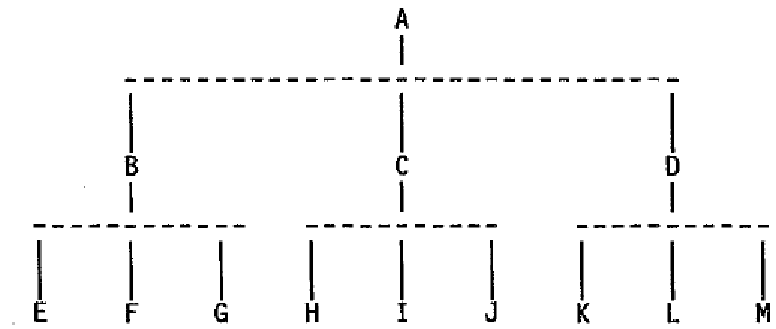
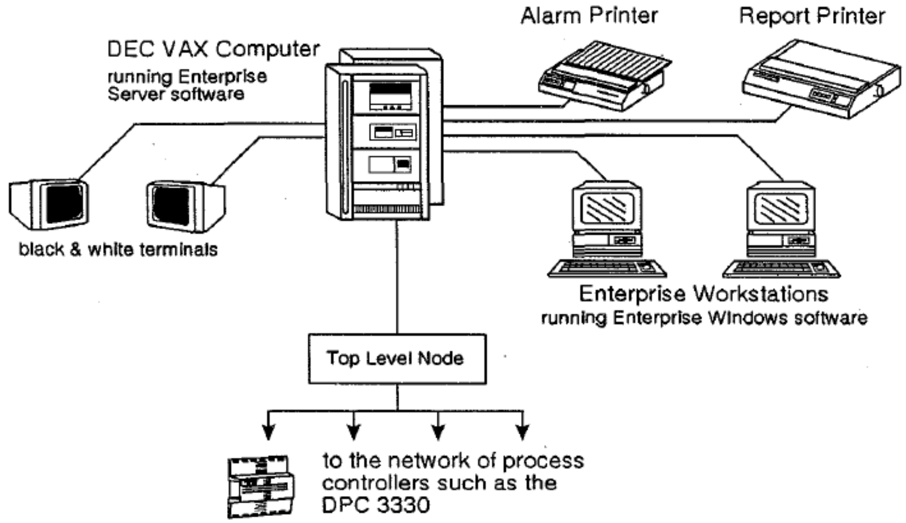
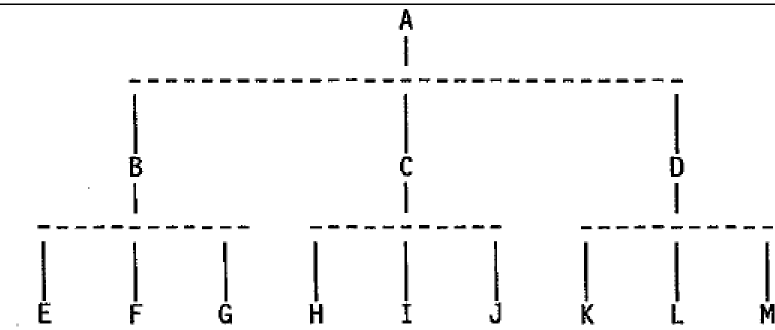
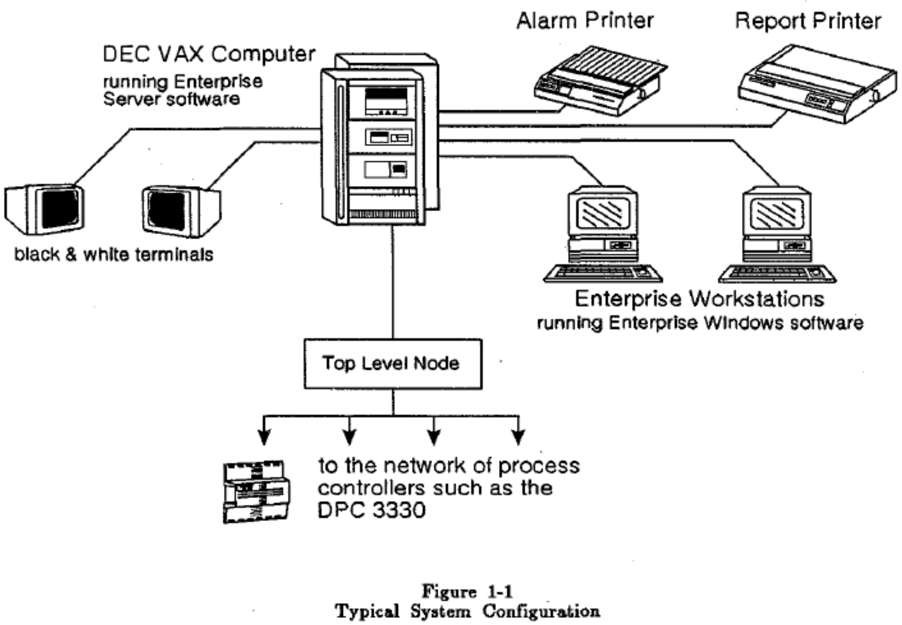
	levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.  **Figure 1-1** **Typical System Configuration**

	Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
adaptively configuring a data translator disposed between and in communication with both a local controller and a wireless transceiver, wherein the data translator is configured to translate the local controller data stream into an information signal consisting of a transceiver identification code and a concatenation of function codes, the data translator further configured to translate control signals from the wireless transceiver into local controller recognized control signals;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.

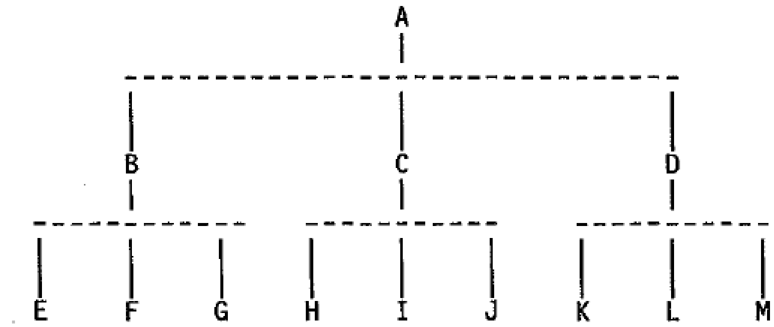
	"Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

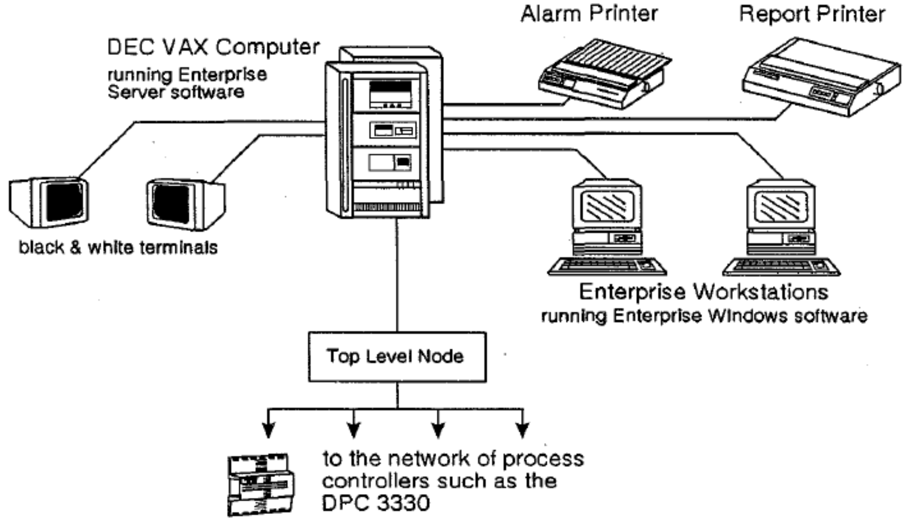
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
remotely collecting data from the at least one relatively low-powered radio-frequency (RF) transceiver integrated with the data translator;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
processing the data into an RF signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

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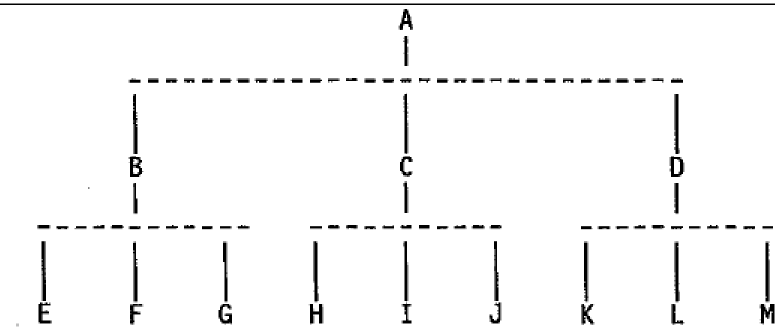
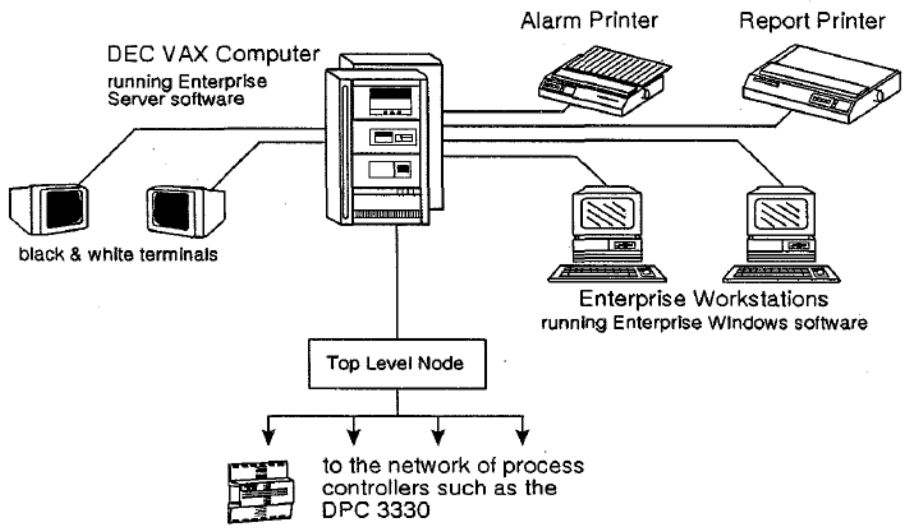
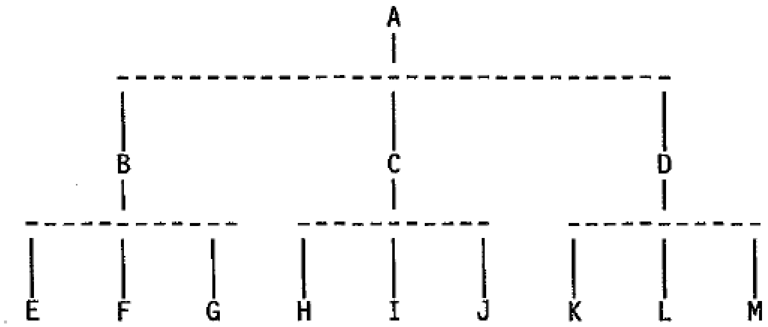
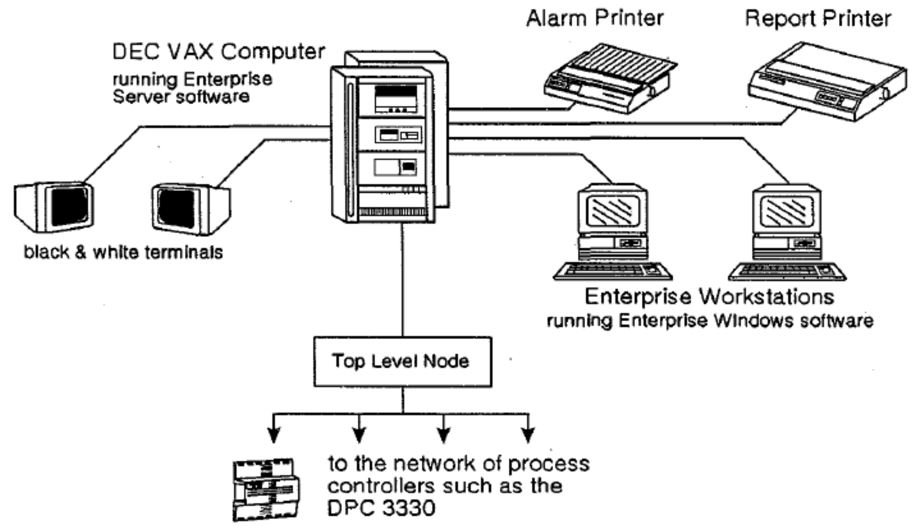
transmitting the RF signal to a gateway;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
translating the data in the RF signal into a network transfer protocol;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

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sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by at least one sensor by generating an appropriate control signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

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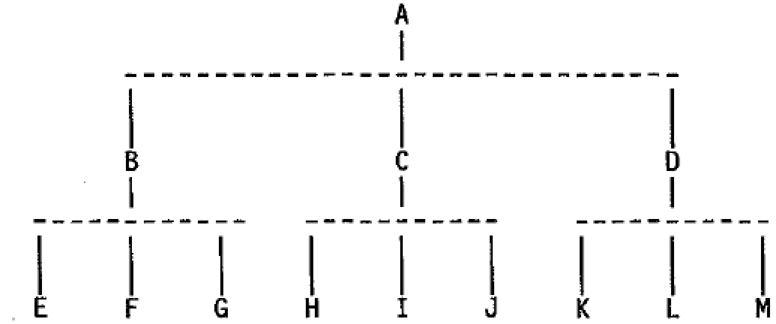
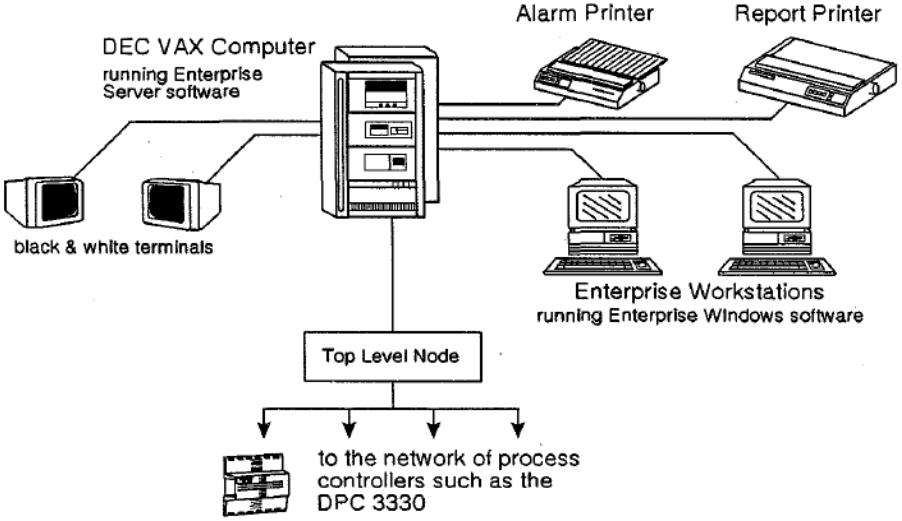
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

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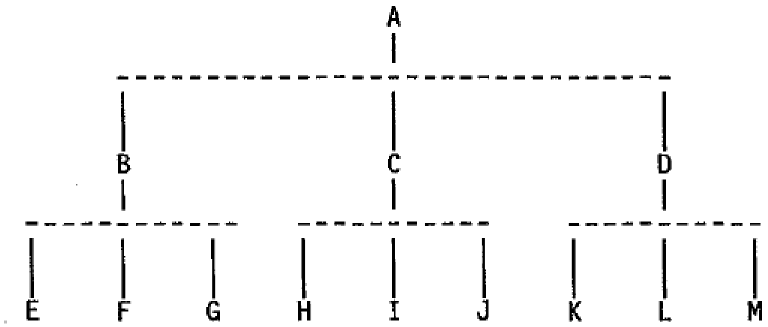
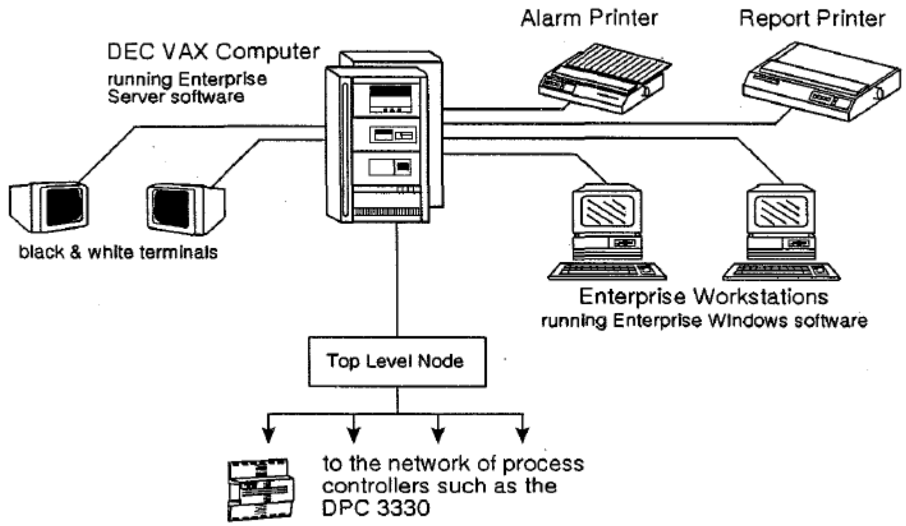
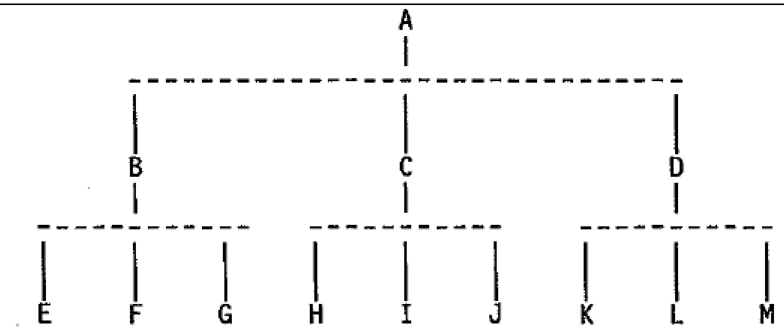
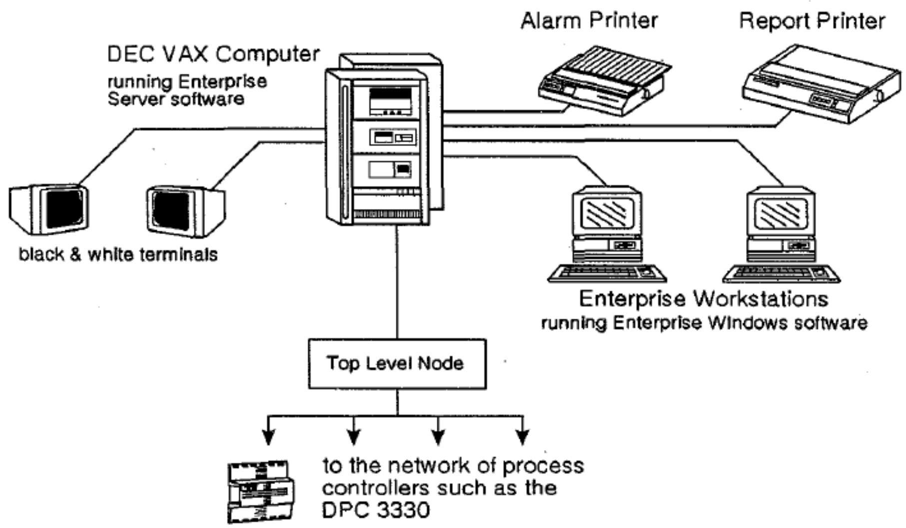
sending the control signal via the network to the gateway;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
translating the control signal from a network transfer protocol into an RF control signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

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transmitting the RF control signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

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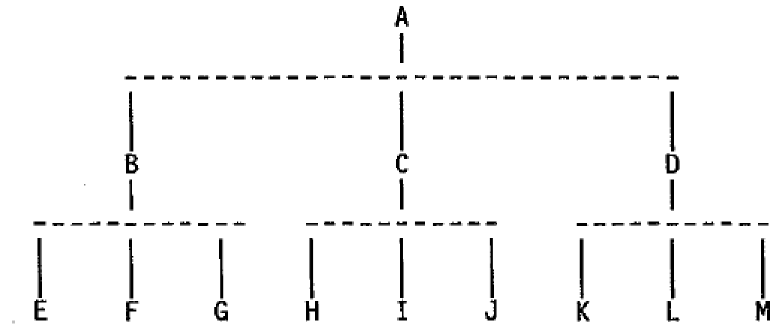
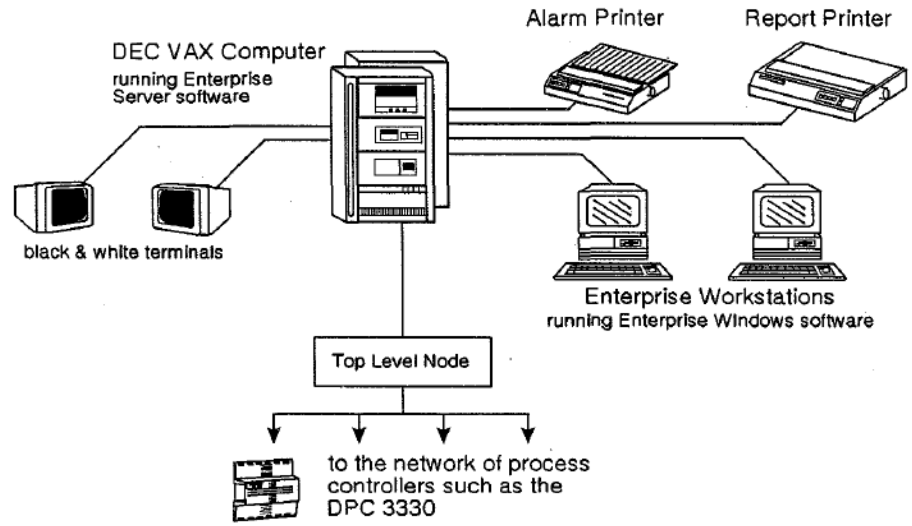
	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

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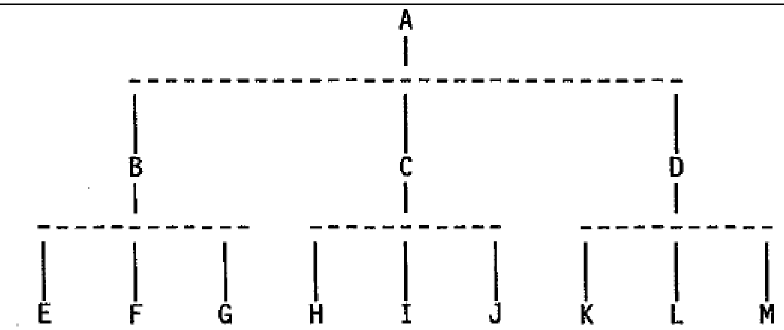
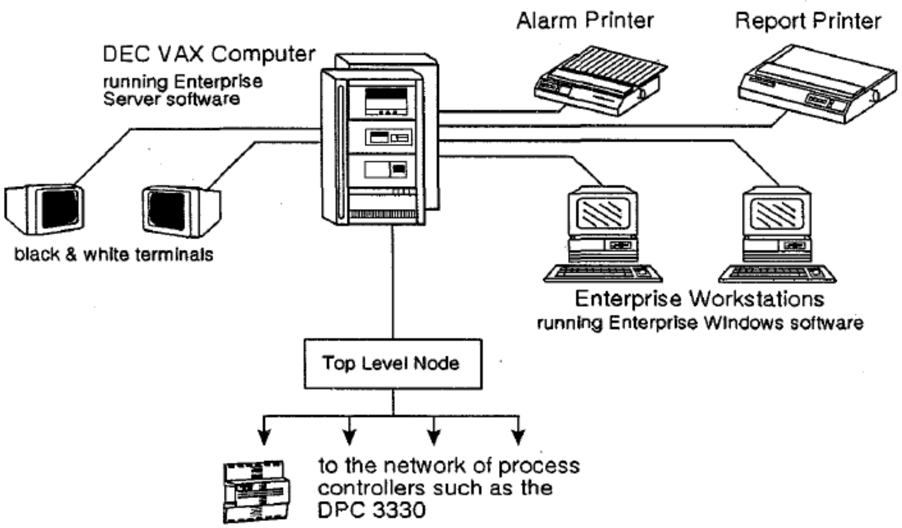
receiving the RF control signal;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

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translating the received RF control signal into a local controller recognized control signal; and	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem,

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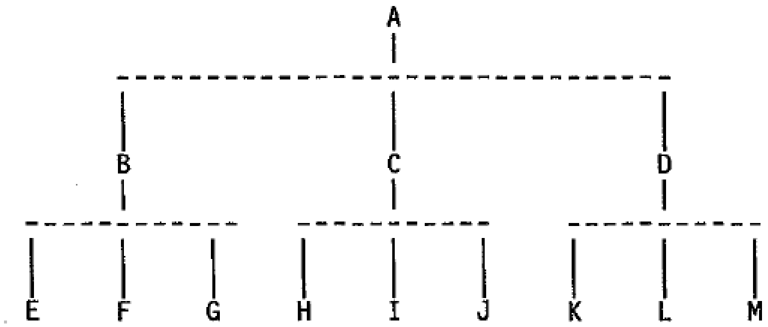
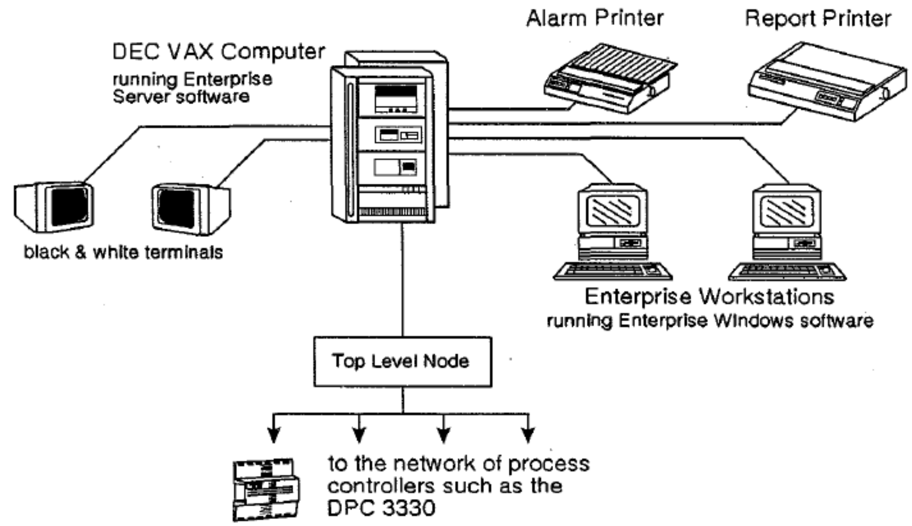
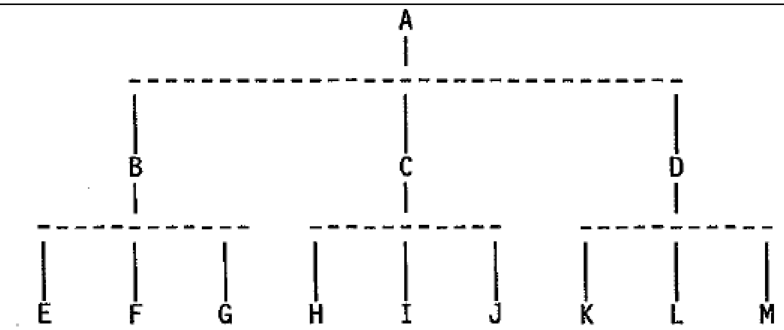
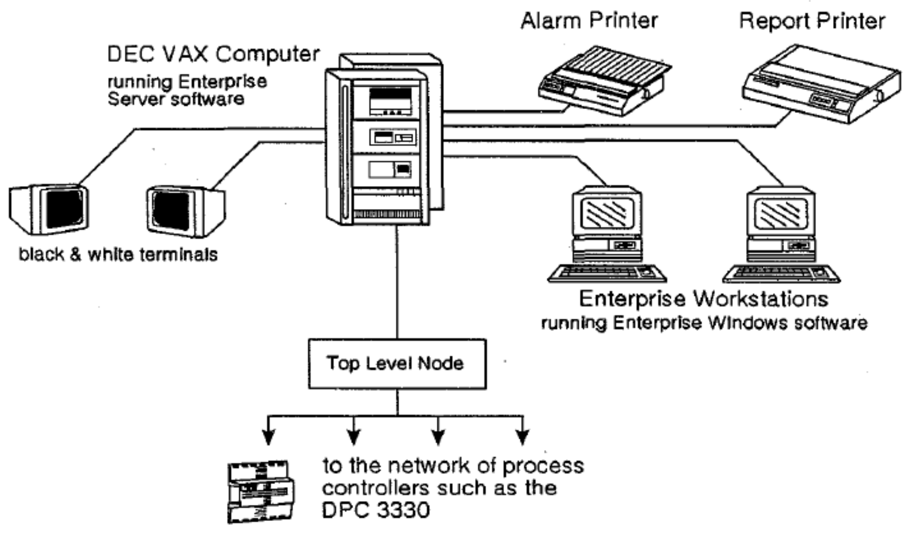
	and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

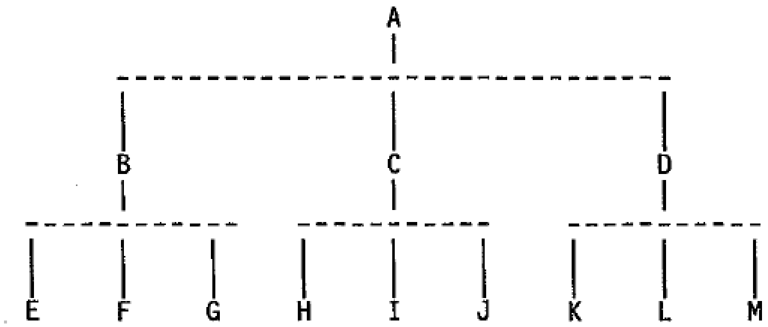
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

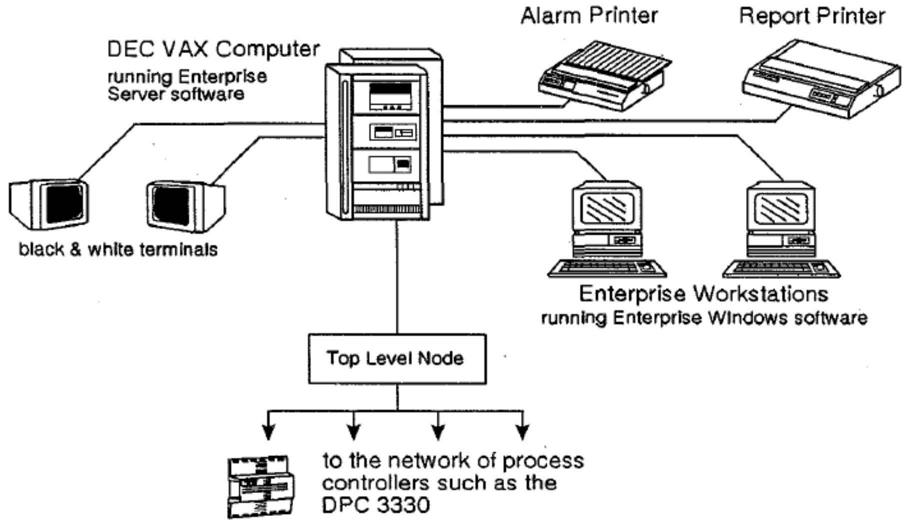
	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
applying the local controller recognized control signal via a local control to effect the desired system response.	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
61. The method of claim 60, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 60 are incorporated by reference. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000

	Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
62. The method of claim 60, wherein the network is the Internet.	The above contentions for claim 60 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22

	Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 31. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 32. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred

	across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.

	The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
63. The method of claim 60, wherein the network is an Intranet.	The above contentions for claim 60 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22

	Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 33. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 34. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP)

	signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,437,692 based on Network 3000

	The ‘817 patent discloses: “FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1.” ‘817 patent, 6:1-8.
64. The method of claim 60, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 60 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: “The PRNET can also be accessed from other networks via an Internet gateway.” Jubin page 23. “Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet.” Jubin, page

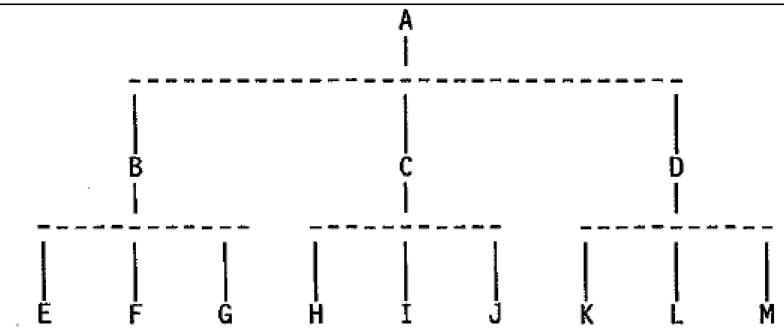
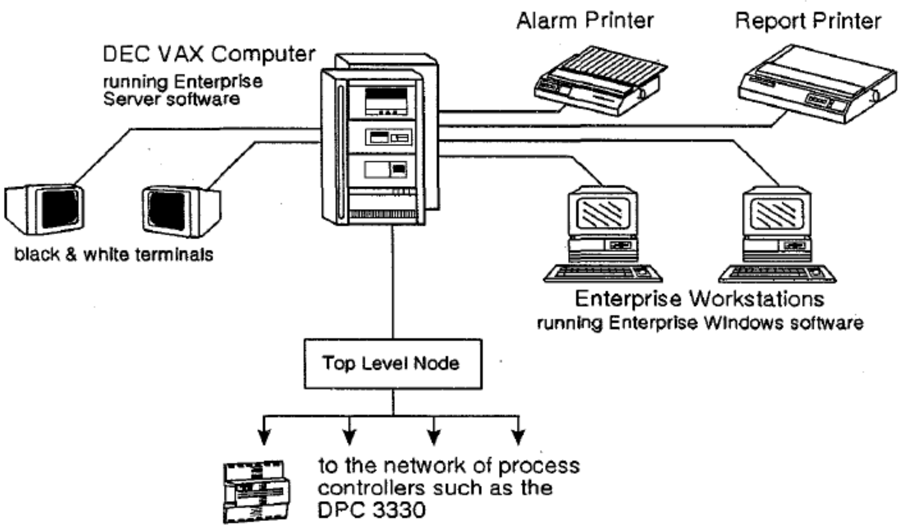
	22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 35. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 36. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving

	information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43.

	'773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.

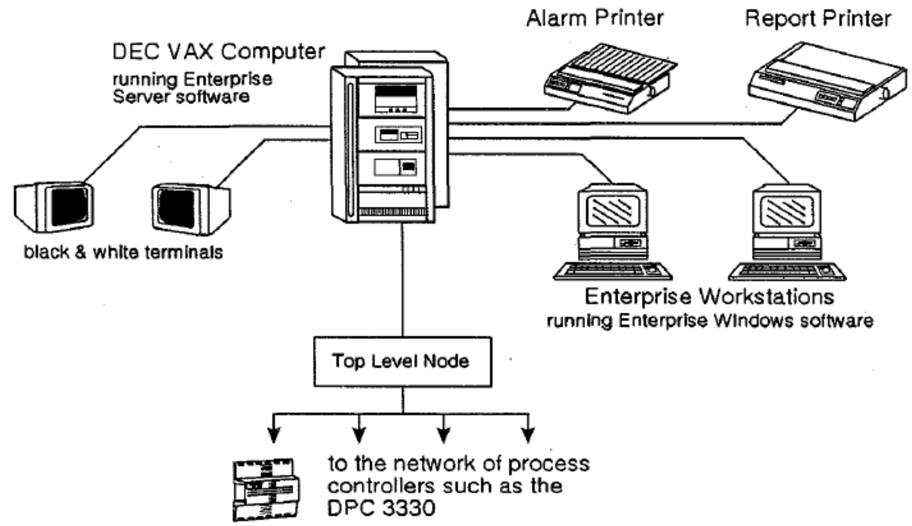
Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,013,732 based on Network 3000

The '732 Patent – Claim	Network 3000 Communications Users Guide
1. A system for remote data collection, assembly, storage, event detection and reporting and control, comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,013,732 based on Network 3000

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23.

	"Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249. Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250.

	'217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,013,732 based on Network 3000

	'773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically inter- faced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected

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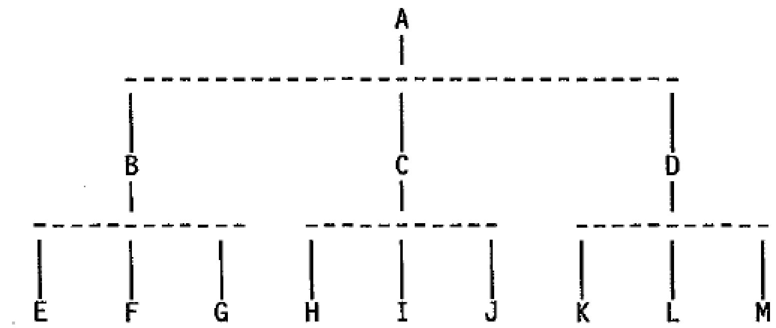
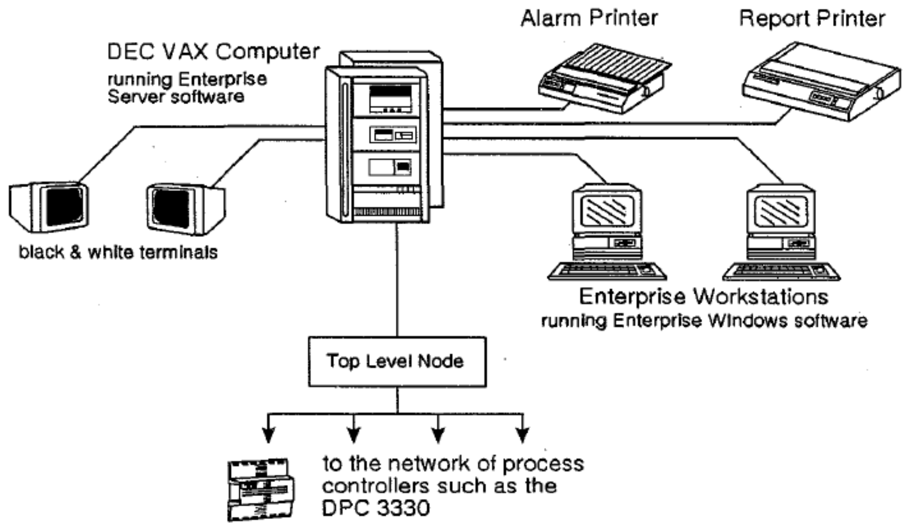
retransmission;	to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. 3.2 Data Message (Global And Local) Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is: DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA,DLE,ETX,CRC where: DLE = ASCII character 10H STX = ASCII character 02H LADD = Local address + 80H SER = Message serial number DADD = Destination global address SADD = Source global address CTL = Control byte DFUN = Destination function code SEQ = Application sequence number SFUN = Source function code NSB = Node Status Byte DATA = Application-dependent data (up to 241 bytes) DLE = ASCII character 10H ETX = ASCII character 03H CRC = Cyclic Redundancy Check Network 3000 CUG, p. 13.

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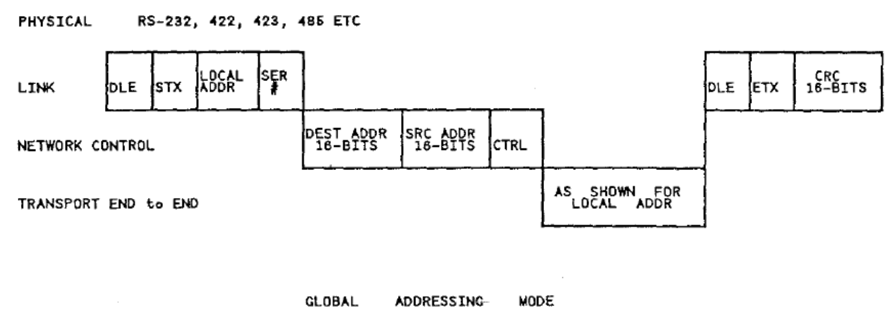
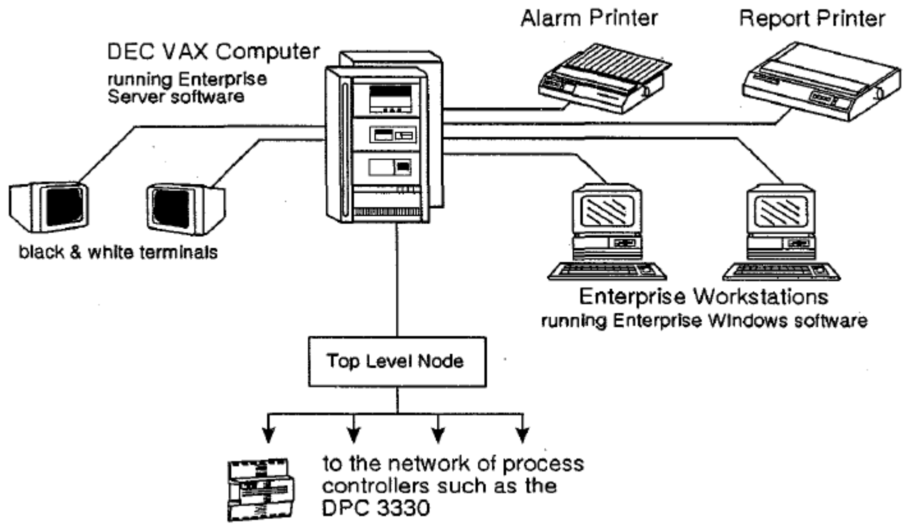
	"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.  Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the data base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said	

gateway further configured to further transmit the translated information to the computer over the WAN and wherein at least one of said plurality of transceivers is also electrically interfaced with an actuator to control an actuated device.	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses:

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	"PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm

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	message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
13. In a system comprising a plurality of wireless devices configured for remote wireless communication and comprising a device for monitoring and controlling remote devices, the device comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a

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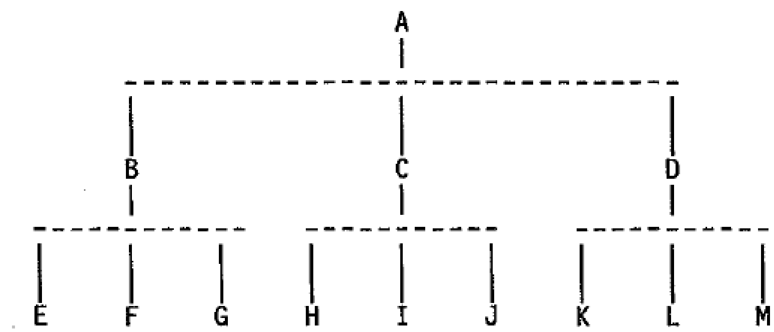
second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.



Network 3000 CUG, p. 6.

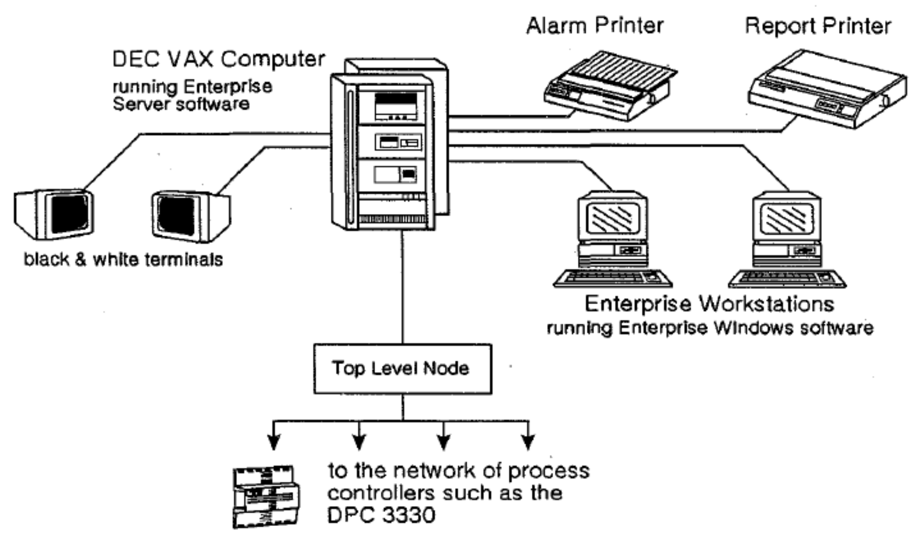


Figure 1-1
Typical System Configuration

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	Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000

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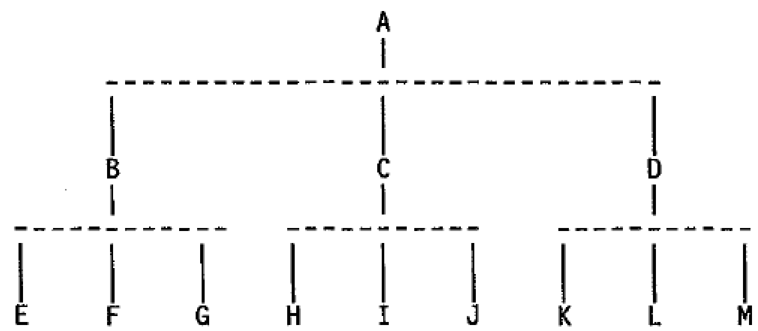
	Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

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	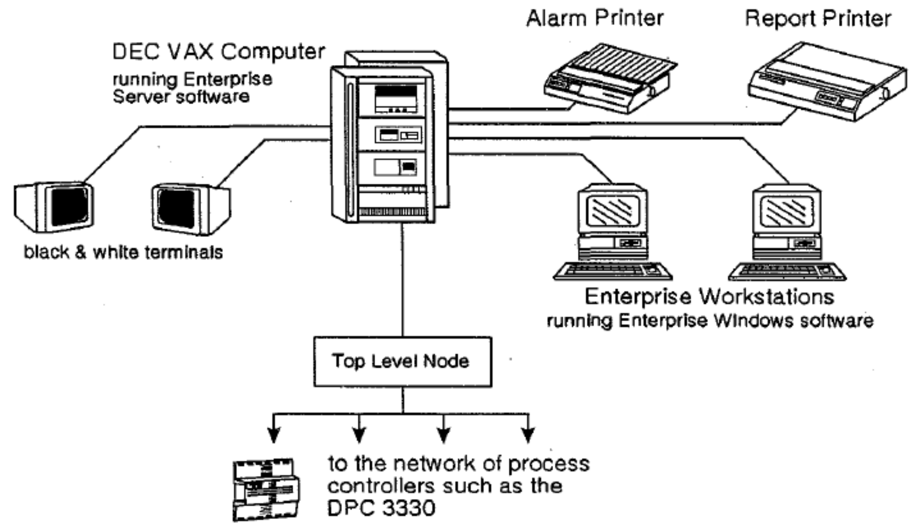 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global

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	address." Network 3000 CUG, p. 5. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. 3.2 Data Message (Global And Local) Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is: DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA, DLE,ETX,CRC where: DLE = ASCII character 10H STX = ASCII character 02H LADD = Local address + 80H SER = Message serial number DADD = Destination global address SADD = Source global address CTL = Control byte DFUN = Destination function code SEQ = Application sequence number SFUN = Source function code NSB = Node Status Byte DATA = Application-dependent data (up to 241 bytes) DLE = ASCII character 10H ETX = ASCII character 03H CRC = Cyclic Redundancy Check Network 3000 CUG, p. 13.

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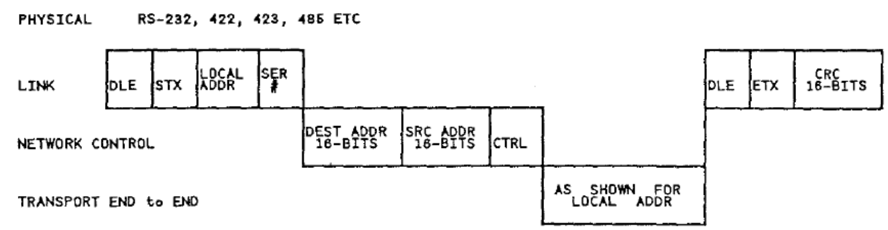
	"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.  GLOBAL ADDRESSING MODE Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the data base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification	"The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12.

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information associated with the transceiver making retransmission; and	
a data controller operatively coupled to the transceiver and the sensor, the data controller configured to control the transceiver and receive data from the sensor, the data controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.
14. The device of claim 13, wherein the data controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The above contentions for claim 13 are hereby incorporated by reference. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
16. The device of claim 13**,** wherein the data controller is configured to receive data packets	The above contentions for claim 13 are hereby incorporated by reference.

comprising a function code, and in response to the function code, implement a function.	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure,

	etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity."

	U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently

	preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
17. The device of claim 13**,** wherein the data controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code	The above contentions for claim 13 are hereby incorporated by reference. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in

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	memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control."

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	'817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
18. The device of claim 13, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the data controller can implement.	The above contentions for claim 13 are hereby incorporated by reference. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a

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	person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses:

	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control

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	Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
19. The device of claim 13, further comprising an actuator configured to receive command data from the controller and in response implement the command.	The above contentions for claim 13 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"),

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	U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60.

	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses:

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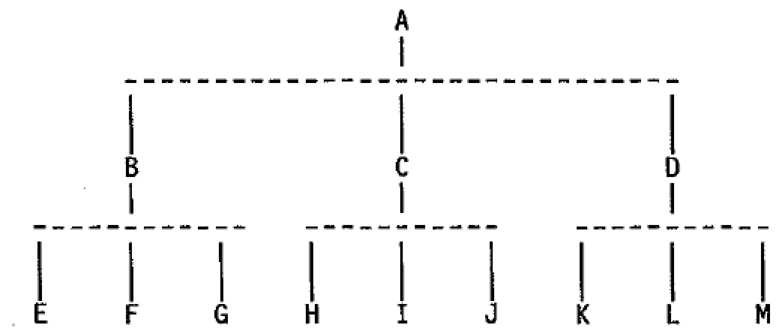
	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
31. A wireless communication system including wireless communication devices capable of wireless communication, the wireless communication system comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44.

	"BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

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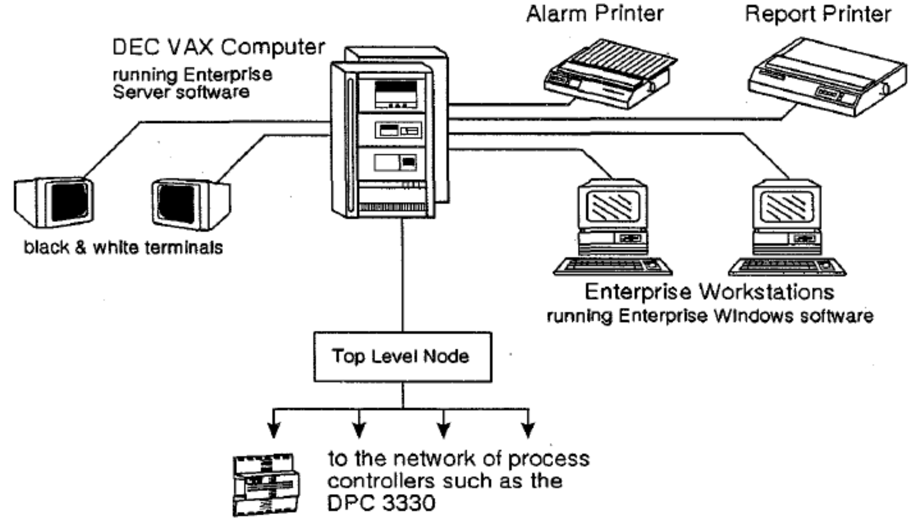
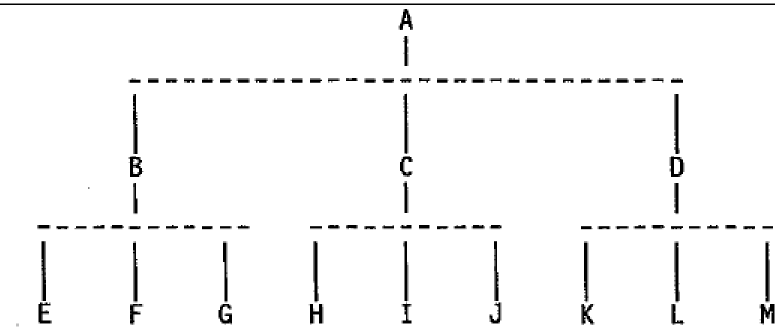
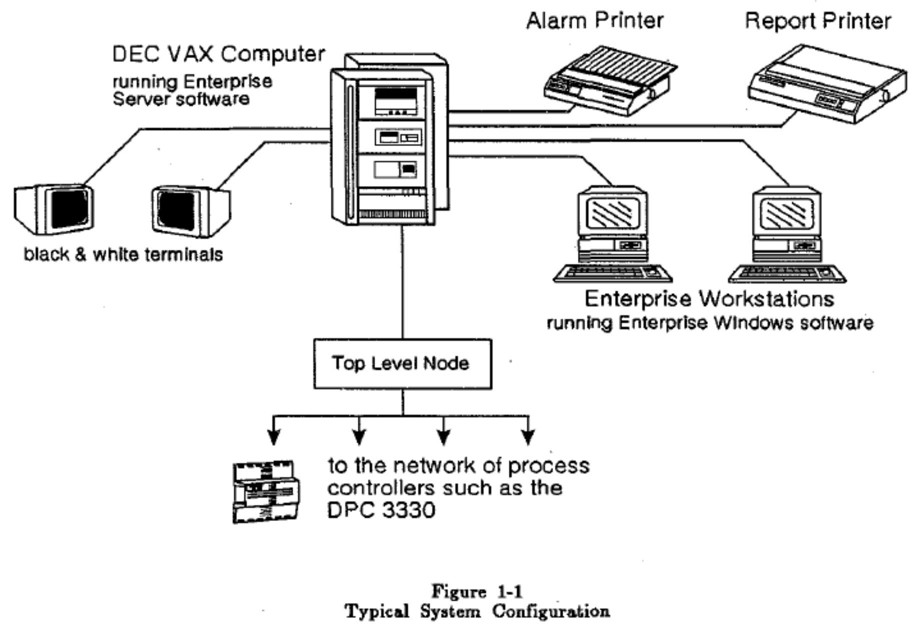
	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000

	SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
at least one wireless communication device comprising a transceiver, the transceiver having a unique identification code and being interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.

3.2 Data Message (Global And Local)

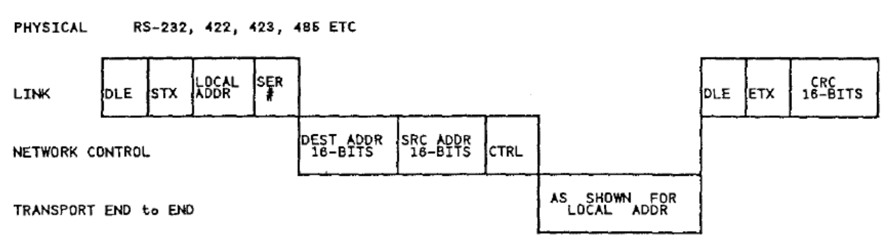
Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is:

DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA,
DLE,ETX,CRC

where: DLE = ASCII character 10H
STX = ASCII character 02H
LADD = Local address + 80H
SER = Message serial number
DADD = Destination global address
SADD = Source global address
CTL = Control byte
DFUN = Destination function code
SEQ = Application sequence number
SFUN = Source function code
NSB = Node Status Byte
DATA = Application-dependent data (up to 241 bytes)
DLE = ASCII character 10H
ETX = ASCII character 03H
CRC = Cyclic Redundancy Check

Network 3000 CUG, p. 13.

"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.



GLOBAL ADDRESSING MODE

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	Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the data base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control transceiver operations and receive data from the sensor, the controller configured to format data packets for transmission via the transceiver with at least some data packets comprising data representative of data sensed with the sensor; and	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
wherein the controller is configured to receive control signals from a data packet and based on the control signals send instructions to an actuator to	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form

implement a command.	of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses:

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	"The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses:

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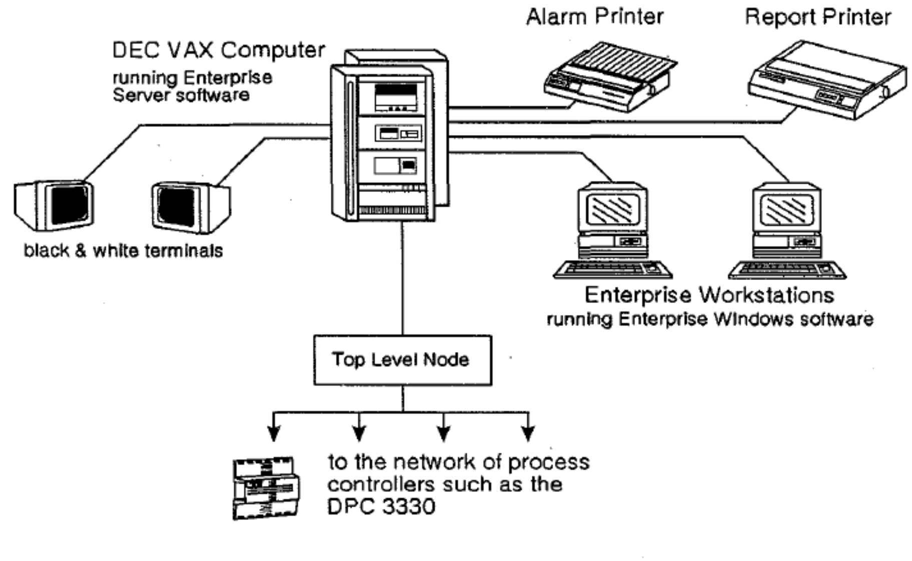
	"Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements."

	'903, 4:23-31.
32. The wireless communication system of claim 31, further comprising at least one gateway connected to a WAN configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to a computing device over the WAN.	The above contentions for claim 31 are hereby incorporated by reference. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with

	the teachings of one or more of the additional references teaching this limitation, for example: Jubin discloses: "The PRNET can also be accessed from other networks via an Internet gateway." Jubin page 23. "Since the DARPA PRNET is a part of the DARPA Experimental Internet System [7], the devices are responsible for running the DoD-standard internetwork-, transport-, and application-level protocols (IP, TCP, and TELNET). These protocols ensure that the end-to-end communication between hosts is reliable and robust, and allow hosts on the PRNET to communicate with computers on various other packet-switched satellite, terrestrial, radio, and local area networks that also participate in the DARPA Internet." Jubin, page 22 Burchfiel discloses: "When some other network is present, it is important to provide connections between the terminals and hosts of the PRN and the terminals and hosts of the other network. This is being done for the ARPANET in two ways: 1. For communications with ARPANET hosts which support a protocol congruent with the PRN connection protocol (the Cerf-Kahn protocol mentioned previously qualifies here), the station functions as an extremely simple gateway: arriving packets are simply forwarded into the other network after their header format is converted to that of the destination network. … 2. The second approach will be conversion between the host-host protocols of the two networks…." Burchfiel page 249. Figure 4, Burchfiel page 249.

	Figure 5, Burchfiel page 250. "Finally, the PRN TELENT process performs the second type of gateway function described above: conversion between the PRN connection protocol and the ARPANET host-host protocol. Terminals on the PRN appear identical to the terminals attached to the PDP-11, and are able to access remote ARPANET service hosts in the same way." Burchfiel page 250. '217 patent discloses: "The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module. The data collection module will send and receiving information to and from the host module as an Internet protocol (TCP/IP) signal. The information signal will be sent out on the Internet, transferred across the Internet, and received by the other module." '217 patent, 46:11-16. '650 patent discloses "In the preferred embodiment, APPs 112 can access any appropriate DA 102. The purpose and timing of each access can vary from APP 112 to APP 112. However, some of the data used by each APP 112 may be the same. Therefore, by caching the data, the DA 102 does not have to regenerate it for each APP 112. This figure also illustrates that APPs 112 can reside within the processor 104 or at a remote location which accesses DAs 102 through the DCS. As shown, remote APPs 112 are connected to processor 104 by client connectors 110 (hereinafter CC 110) via RF links 114 or conventional telephone links 116. Those skilled in the art will recognize that the CCs 110 can be any suitable hardware and software needed to convert received data and commands to a form suitable for the software in the processor 104. The techniques required to

	implement a CC 110 are well known in the art." '650 patent, 6:11-26. "Likewise, the APPS 112 may reside on a single DCS 100, or be distributed over a hierarchical network of computers." '650 patent, 8:42-44. "For example, the Internet allows weather data from DAs 102 located anywhere to be provided to a single APP 112." '650 patent, 10:54-57. '773 patent discloses: "Providing Gateway Services to the individual Minion devices means that all Minion devices effectively become part of the Internet as shown in FIG. 2. Status enquiries and data messages can originate at any Internet workstation in the world and can be directed to any Minion device." '773 patent, 7:39-43. '773 patent, Figure 2. The '817 patent discloses: "FIG. 3 schematically illustrates a communication protocol in accordance with the present invention. This protocol is explained in greater detail below. However, it may be briefly summarized as entailing use of the TCP and IP protocols for communications among the server 20 (FIG. 1) and the node/collector units 18 (only one of which is shown in FIG. 1." '817 patent, 6:1-8.
33. The wireless communication system of claim 31, further comprising a computing device configured to receive user input and based on user input, the computing device formatting control	The above contentions for claim 31 are hereby incorporated by reference. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote

signals, and wherein the controller is configured to receive the control signals via wireless transmission and take action based on the control signals.	process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23

	Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses:

	"Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions,

	commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
34. The wireless communication system of claim 31, wherein the controller is configured to provide one or more function codes in the data packet in response to data sensed by the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses:

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	"PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command

	the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
35. The wireless communication system of claim 31, wherein the controller comprises a memory containing a plurality of function codes specific to the sensor.	The above contentions for claim 31 are hereby incorporated by reference. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217

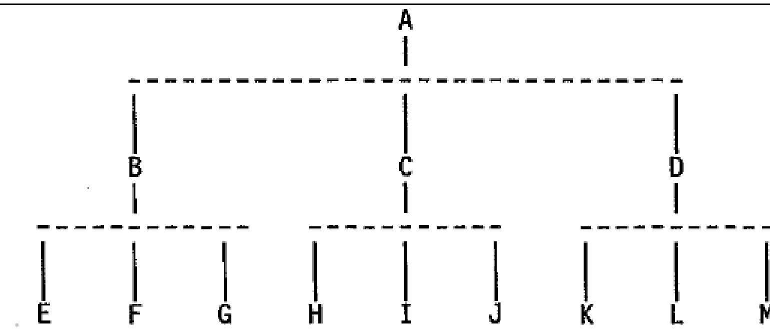
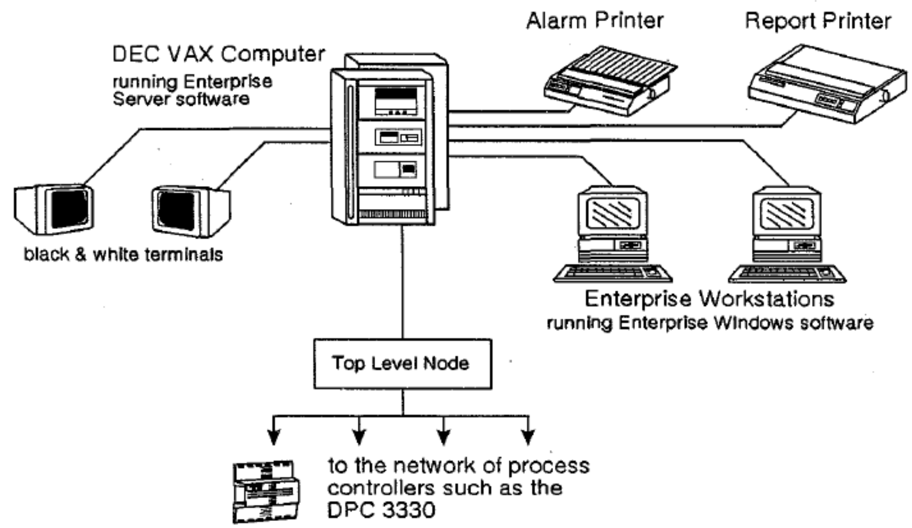
	patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more

	monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.

	U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,754,780 based on Network 3000

The '780 Patent – Claim	Network 3000 Communications Users Guide
1. In a system comprising a plurality of wireless devices, a device comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from a second wireless transceiver in a predetermined signal type;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging

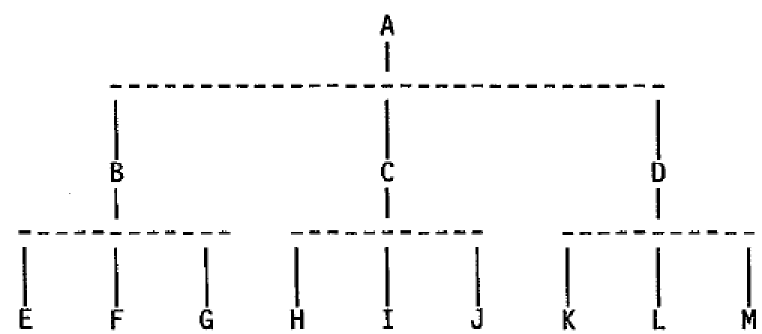
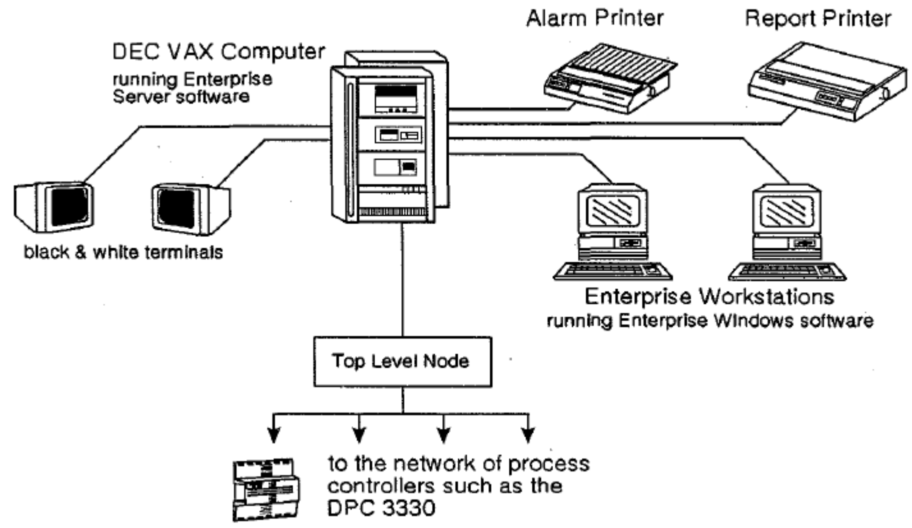
	data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,754,780 based on Network 3000

	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. 3.2 Data Message (Global And Local) Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is: DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA, DLE,ETX,CRC where: DLE = ASCII character 10H STX = ASCII character 02H LADD = Local address + 80H SER = Message serial number DADD = Destination global address SADD = Source global address CTL = Control byte DFUN = Destination function code SEQ = Application sequence number SFUN = Source function code NSB = Node Status Byte DATA = Application-dependent data (up to 241 bytes) DLE = ASCII character 10H ETX = ASCII character 03H CRC = Cyclic Redundancy Check Network 3000 CUG, p. 13.

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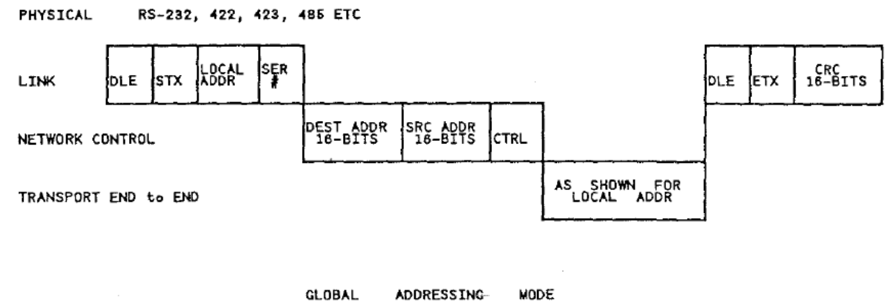
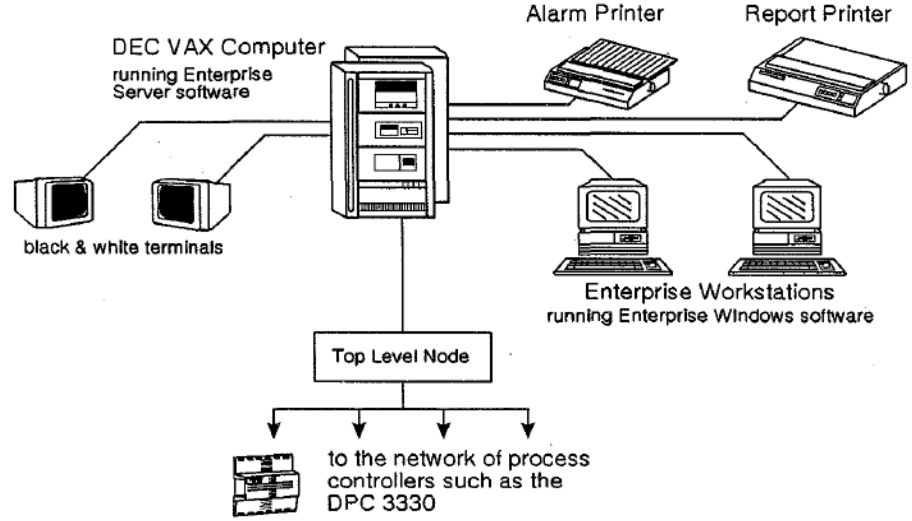
	"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.  Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the data base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the second wireless transceiver, and transceiver	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the

identification information associated with the transceiver making retransmission; and	controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control the transceiver and receive data from the sensor, the controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13.
2. The device of claim 1, wherein the controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The above contentions for claim 1 are hereby incorporated by reference.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,754,780 based on Network 3000

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass

	their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports

	debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition

	device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

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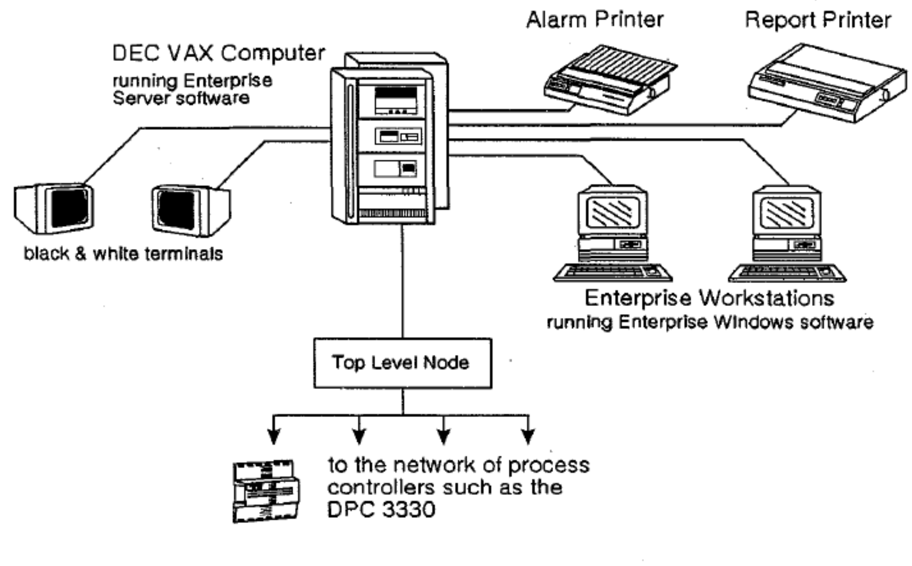
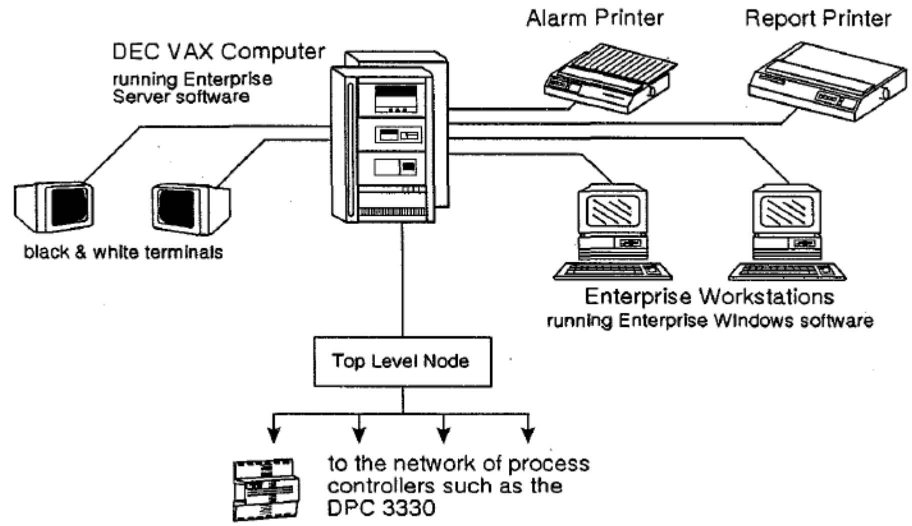
4. The device of claim 1, wherein the controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The above contentions for claim 1 are hereby incorporated by reference.  **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to

	higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process."

	Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses:

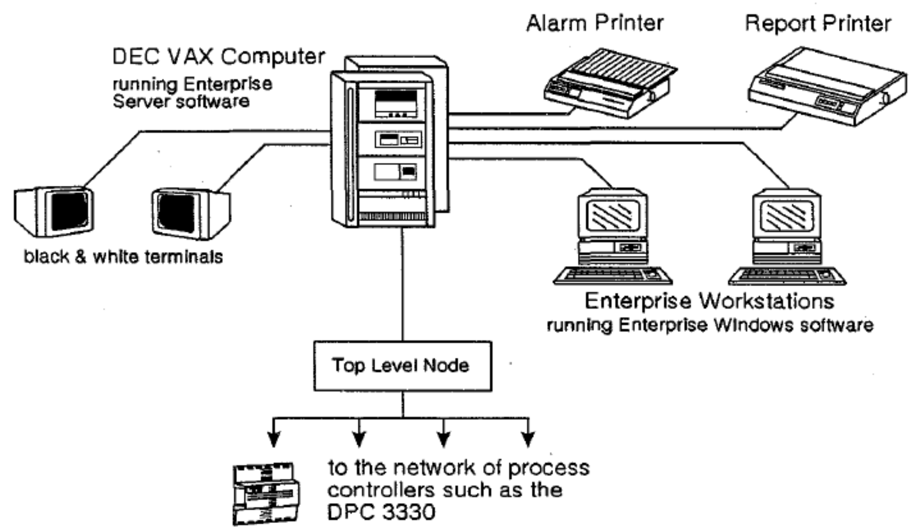
	"Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed

	to the different system elements." '903, 4:23-31.
5. The device of claim 1, wherein the controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code that identifies the transceiver.	The above contentions for claim 1 are hereby incorporated by reference.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store

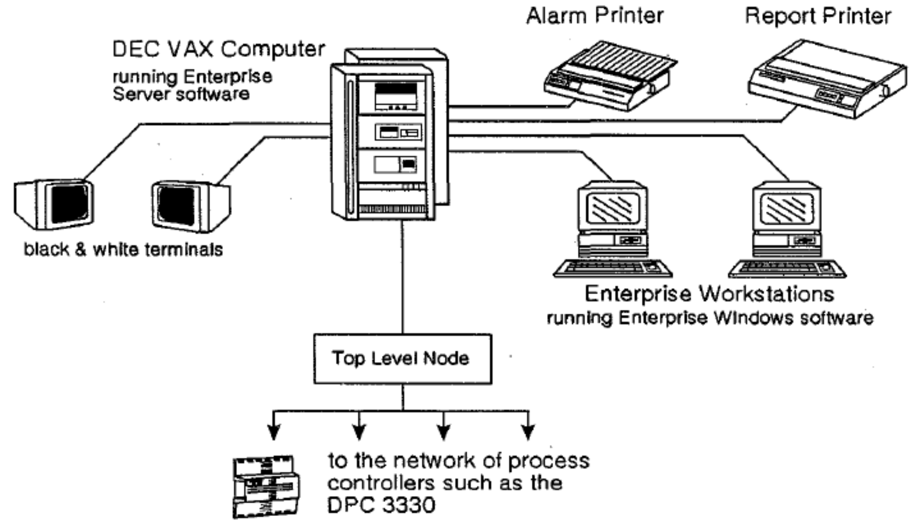
	the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23

	Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each

	vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The

	data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
6. The device of claim 1, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the controller can implement.	The above contentions for claim 1 are hereby incorporated by reference.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
7. The device of claim 1, further comprising an actuator configured to receive command data from the controller and in response implement a command.	The above contentions for claim 1 are hereby incorporated by reference.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass

	their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports

	debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition

	device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,754,780 based on Network 3000

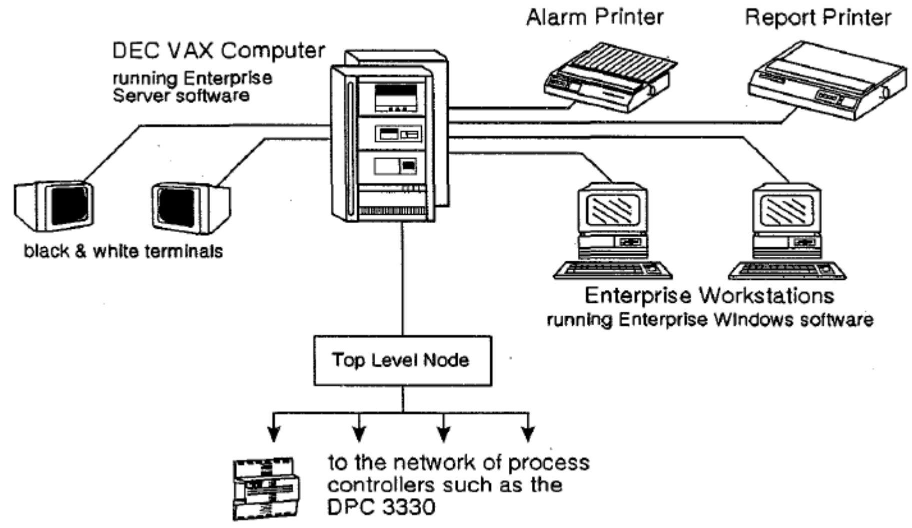
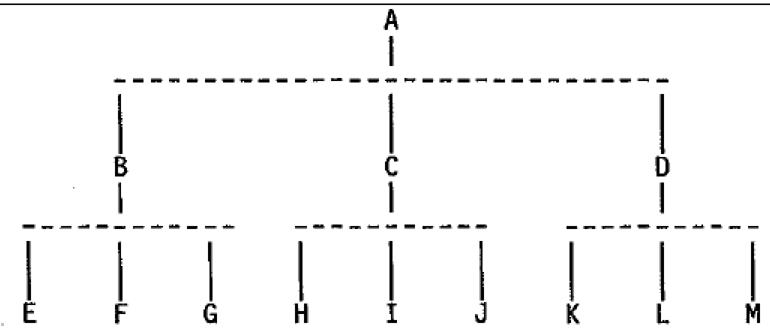
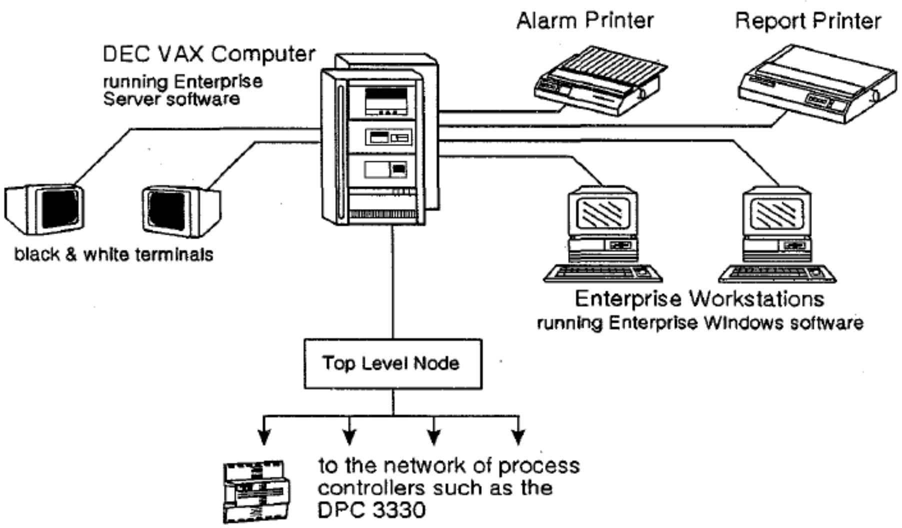
8. The device of claim 1, wherein the second transceiver is nearby to the transceiver.	The above contentions for claim 1 are hereby incorporated by reference.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

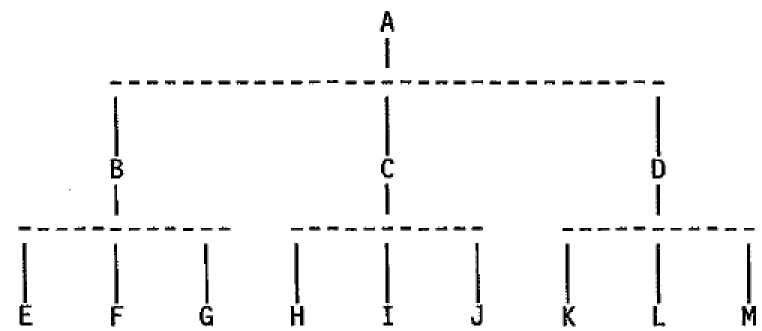
Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,908,842 based on Network 3000

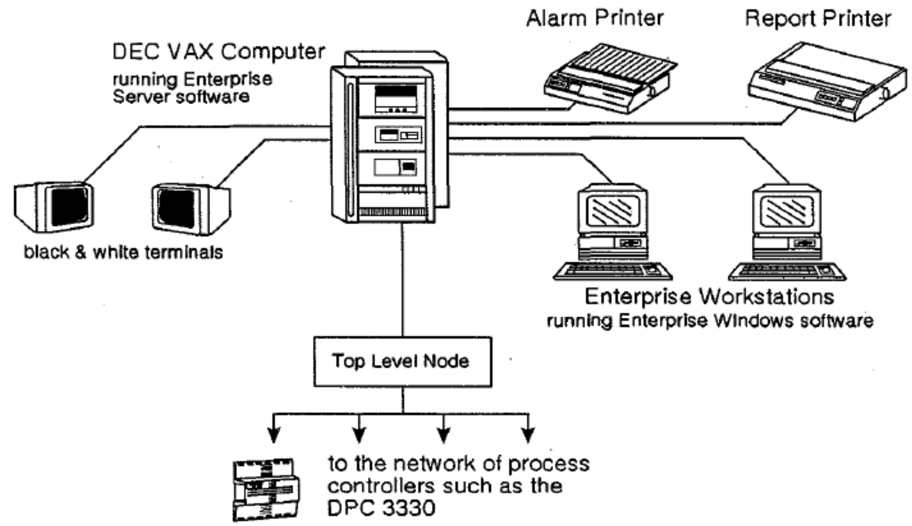
The '842 Patent – Claim	Network 3000
1. A device for communicating information, the device comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,908,842 based on Network 3000

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a low-power transceiver configured to wirelessly transmit a signal comprising instruction data for delivery to a network of addressable devices;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging

	data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as

	the global address." Network 3000 CUG, p. 5. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. 3.2 Data Message (Global And Local) Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is: DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA, DLE,ETX,CRC where: DLE = ASCII character 10H STX = ASCII character 02H LADD = Local address + 80H SER = Message serial number DADD = Destination global address SADD = Source global address CTL = Control byte DFUN = Destination function code SEQ = Application sequence number SFUN = Source function code NSB = Node Status Byte DATA = Application-dependent data (up to 241 bytes) DLE = ASCII character 10H ETX = ASCII character 03H CRC = Cyclic Redundancy Check

Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,908,842 based on Network 3000

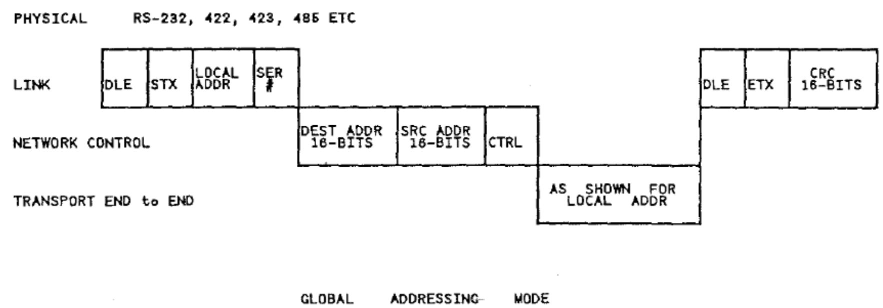
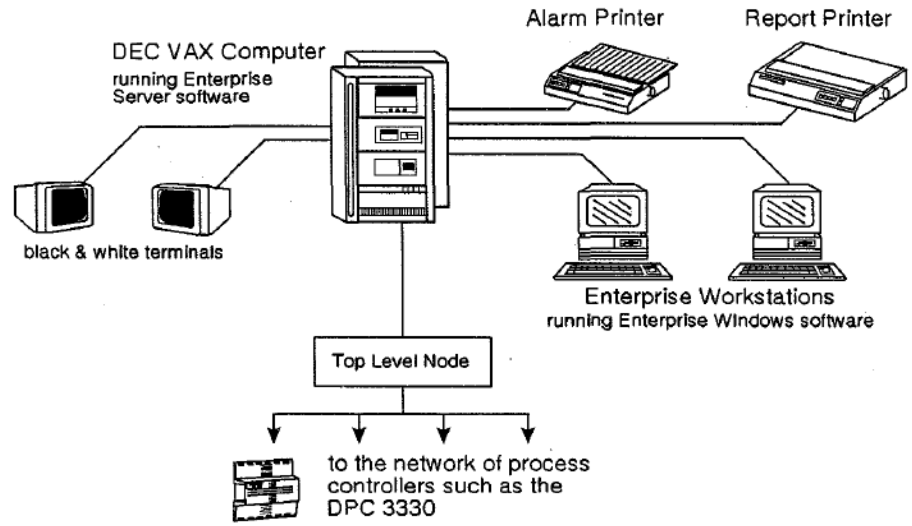
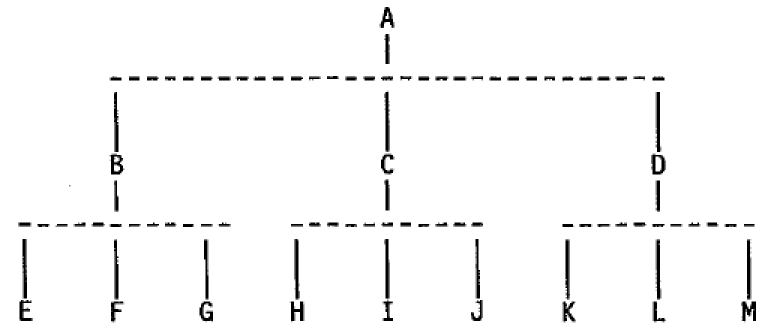
	Network 3000 CUG, p. 13. "The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.  Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the dat base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.

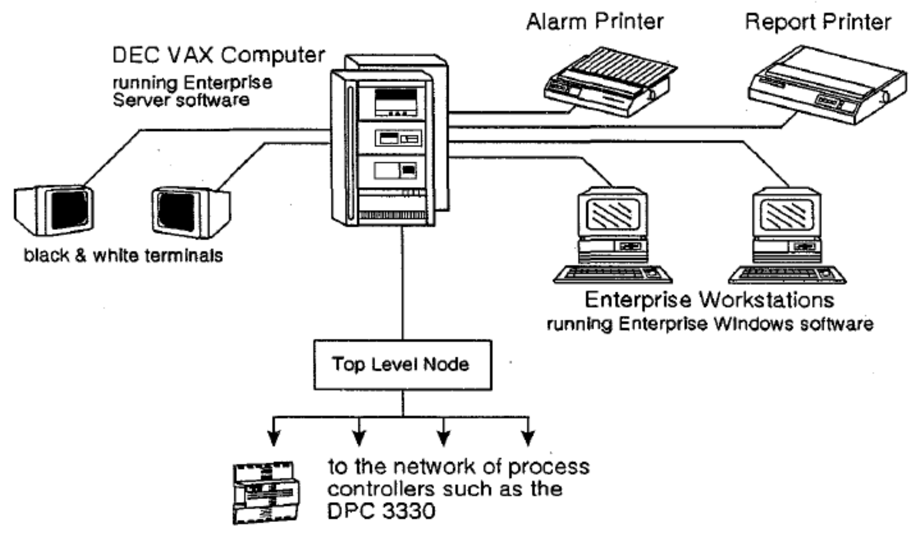
Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,908,842 based on Network 3000

an interface circuit for communicating with a central location; and	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices.

	At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
a controller coupled to the interface circuit and to the low-power transceiver, the controller configured to establish a communication link between at least one device in the network of addressable devices and the central location using an address included in the signal, the communication link comprising one or more devices in the network of addressable, the controller further configured to receive one or more signals via the low-power transceiver and communicate information contained within the signals to the central location.	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
7. The device of claim 1, wherein the controller is further configured to communicate a transceiver identification code to the central location via the interface circuit.	The above contentions for claim 1 are hereby incorporated by reference. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes

	which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5.
9. The device of claim 1, wherein transmitted and received signals further comprise a field configured to indicate a destination device for a subsequent transmission path to follow.	The above contentions for claim 1 are hereby incorporated by reference. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5. "3.2 Data Message (Global and Local) … DADD = Destination global address" Network 3000 CUG p. 13.
16. A device for communicating information, the device comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree

	structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication

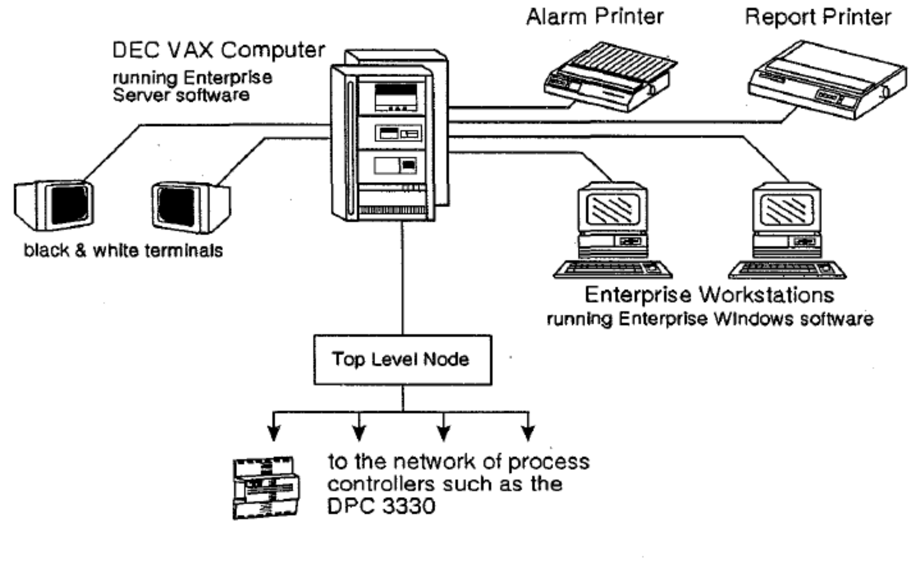
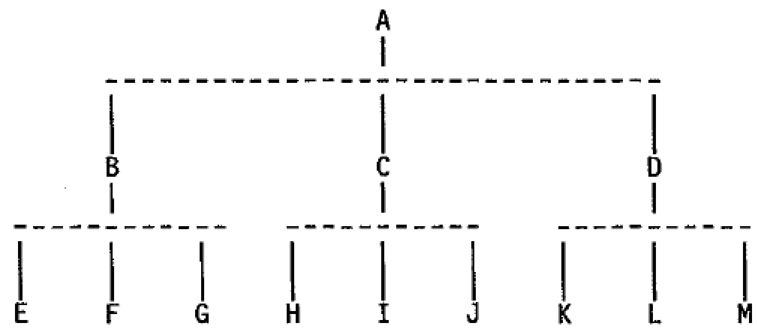
	management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a processor; and	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1.

Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,908,842 based on Network 3000

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
a memory, the memory comprising logical instructions that when executed by the processor are configured to cause the device to:	At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
wirelessly transmit a signal comprising instruction data for delivery to a network of addressable low-power transceivers;	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices.

establish a communication link between at least one low-power transceiver in the network of addressable low-power transceivers and a central location based on an address included in the signal, the communication link comprising one or more low-power transceivers in the network of addressable low-power transceivers; and	At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
receive one or more low-power RF signals and communicate information contained within the signals to the central location along with a unique transceiver identification number over the communication link.	At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
17. A device for communicating information, the device comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44.

	"BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

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	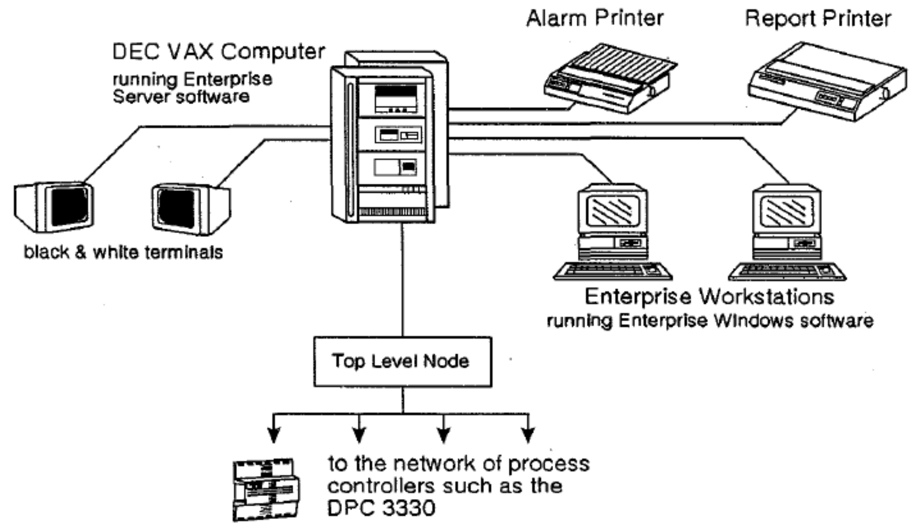 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass

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	their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a low-power transceiver that is configured to wirelessly receive a signal including an instruction data from a remote device;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

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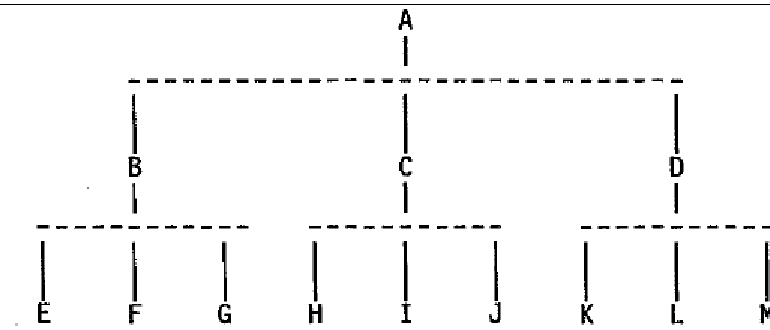
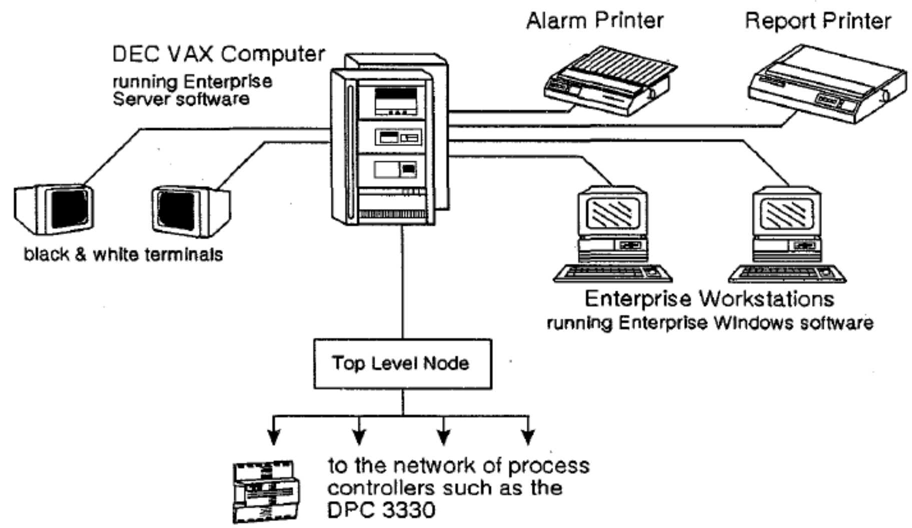
	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.

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3.2 Data Message (Global And Local)

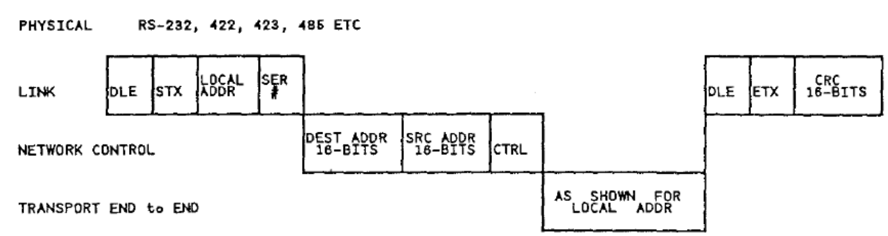
Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is:

DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA,
DLE,ETX,CRC

where:
DLE = ASCII character 10H
STX = ASCII character 02H
LADD = Local address + 80H
SER = Message serial number
DADD = Destination global address
SADD = Source global address
CTL = Control byte
DFUN = Destination function code
SEQ = Application sequence number
SFUN = Source function code
NSB = Node Status Byte
DATA = Application-dependent data (up to 241 bytes)
DLE = ASCII character 10H
ETX = ASCII character 03H
CRC = Cyclic Redundancy Check

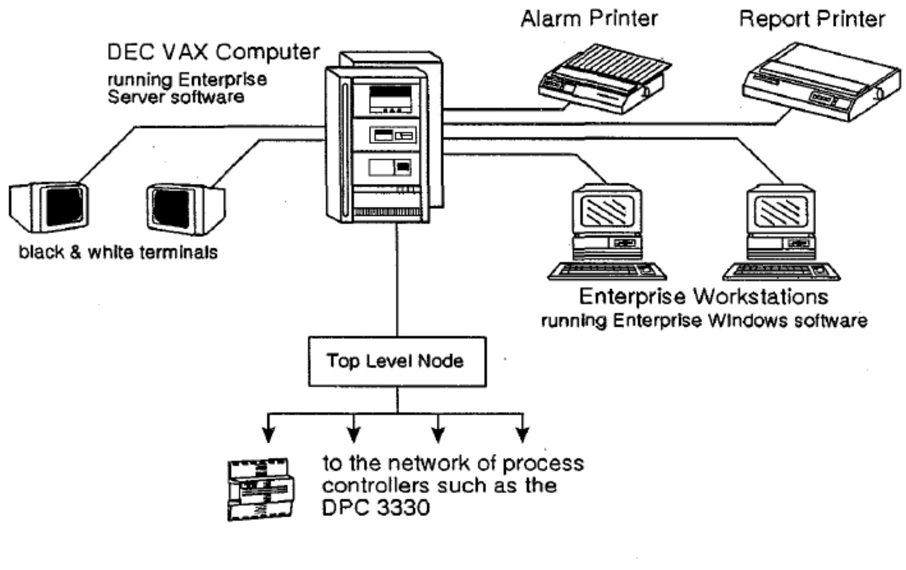
Network 3000 CUG, p. 13.

"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.



GLOBAL ADDRESSING MODE

Exhibit P11 – Invalidity Chart for U.S. Patent No. 8,908,842 based on Network 3000

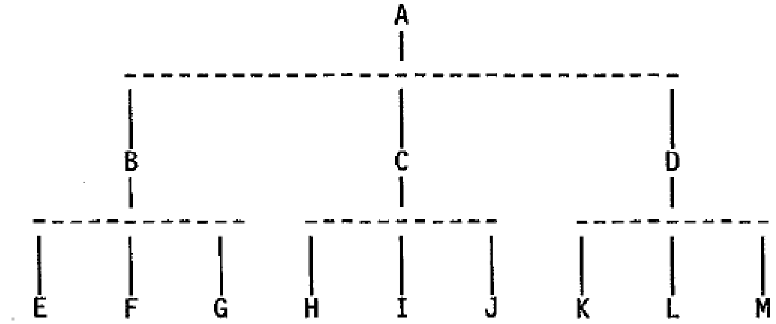
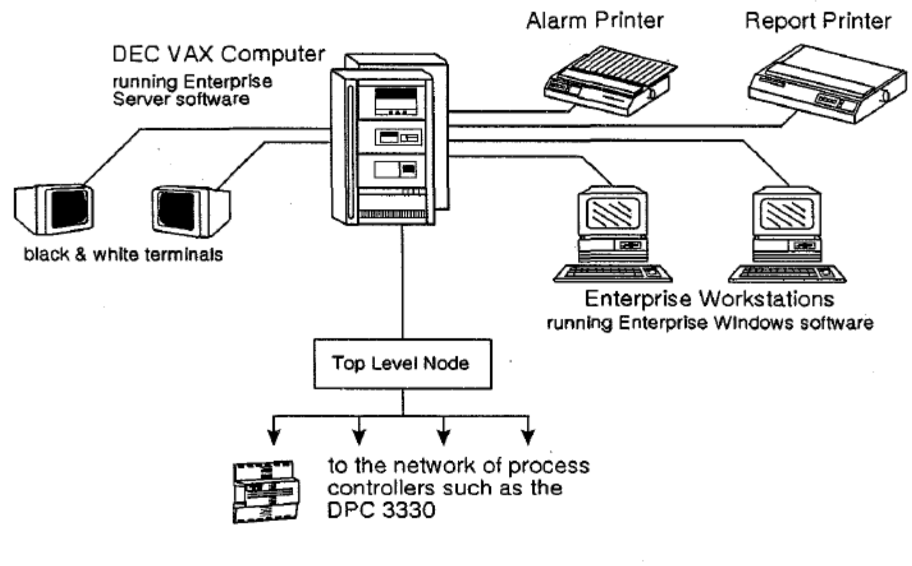
	Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the dat base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.
an interface circuit for communicating with a central location;	 **Figure 1-1** **Typical System Configuration** Network 3000 SCM, p. 1-1. "The global address is the complete address required to route a message to

	the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
a controller coupled to the interface circuit and to the low-power transceiver, the controller being configured to establish a communication link between the remote device and the central location using address-indicative data included in the signal;	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.

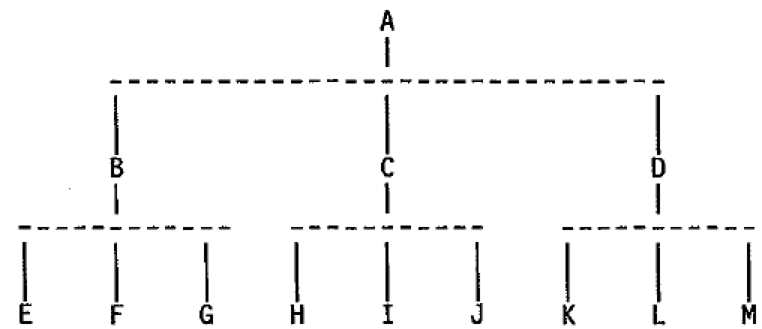
the controller further configured to receive one or more data signals from the central location via the interface circuit and communicate information contained within the signals to the remote device.	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.

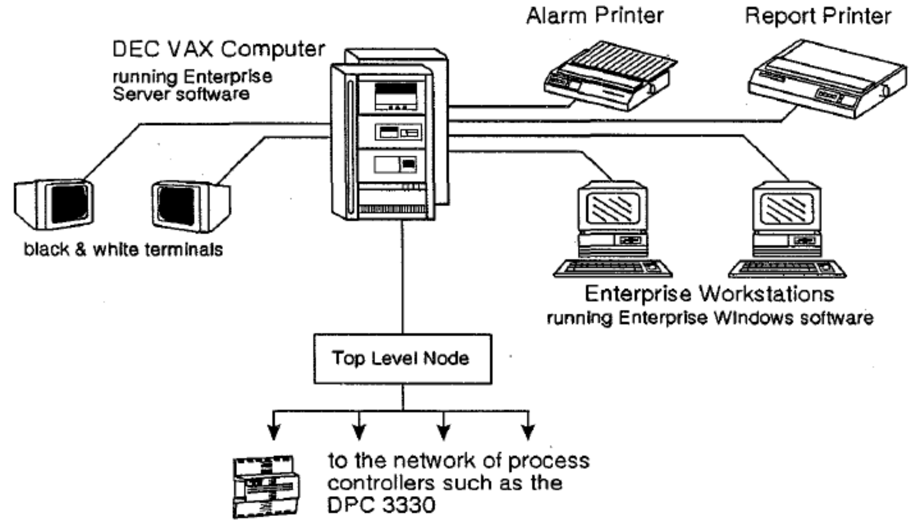
Exhibit P11 – Invalidity Chart for U.S. Patent No. 6,914,893 based on Network 3000

The '893 Patent – Claim	Network 3000
1. A system for communicating commands and sensed data between remote devices, the system comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging

	data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. 3.2 Data Message (Global And Local) Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is: DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA, DLE,ETX,CRC where: DLE = ASCII character 10H STX = ASCII character 02H LADD = Local address + 80H SER = Message serial number DADD = Destination global address SADD = Source global address CTL = Control byte DFUN = Destination function code SEQ = Application sequence number SFUN = Source function code NSB = Node Status Byte DATA = Application-dependent data (up to 241 bytes) DLE = ASCII character 10H ETX = ASCII character 03H CRC = Cyclic Redundancy Check Network 3000 CUG, p. 13.

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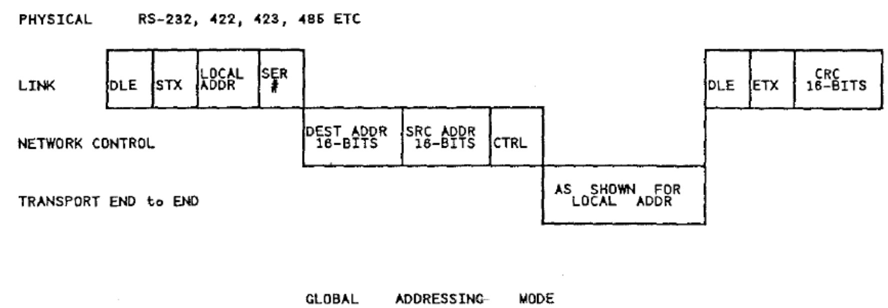
	"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.  Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the data base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network

preformatted messages;	3000 SCM"), p. G-13.
wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end

	(ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25.

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	"The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R.

	Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
sender address comprising the unique address of the sending transceiver;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). …

	Routing Header: The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields).
a command indicator comprising a command code;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247.

	"A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred

	embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

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at least one data value comprising a scalable message; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26.

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	In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31.

	"For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse

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	poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector comprising a redundancy check error detector; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional

	references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields).
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, the '650 patent discloses: "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by

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	the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
2. The system of claim 1, wherein the plurality of transceivers further comprise at least one integrated transceiver, wherein the integrated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference.
one of the plurality of transceivers; and	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
a sensor detecting a condition and outputting a sensed data signal to the transceiver.	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices.

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	At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
3. The system of claim 2, wherein the at least one integrated transceiver receives the preformatted command message requesting sensed data, confirms the receiver address as its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet, wherein the packets are equal to the number of segments.	The above contentions for claim 2 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR,

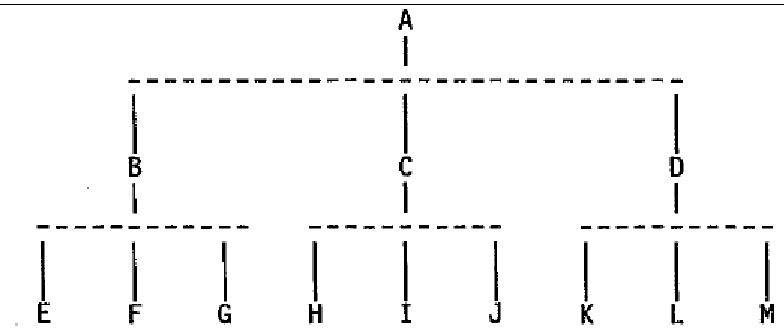
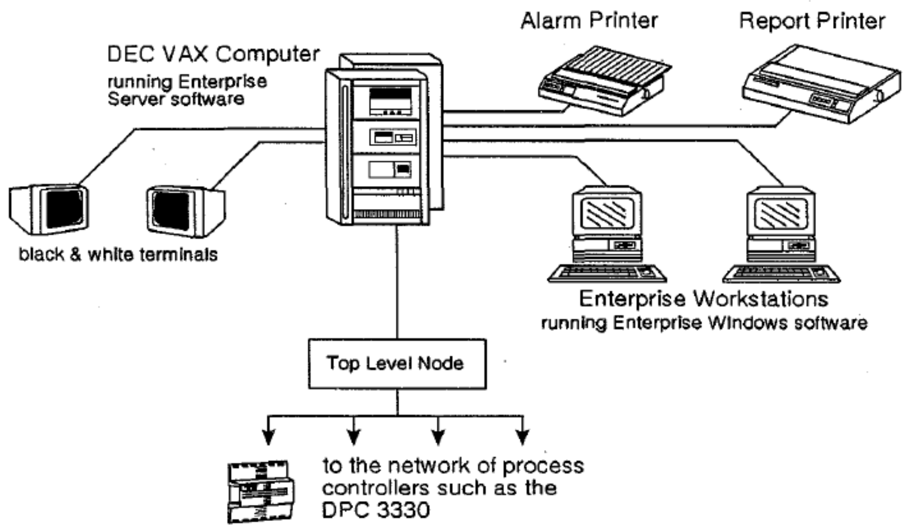
	encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second,

	broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8

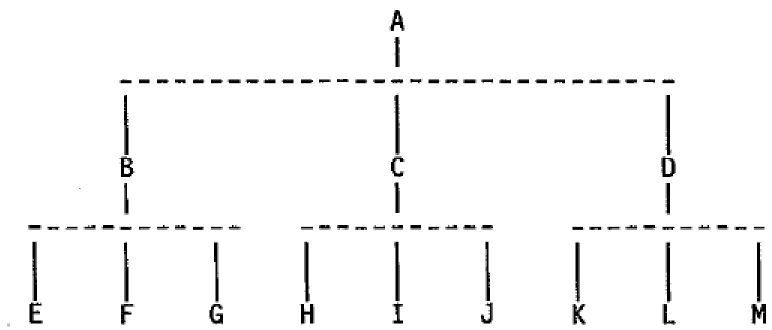
	bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.

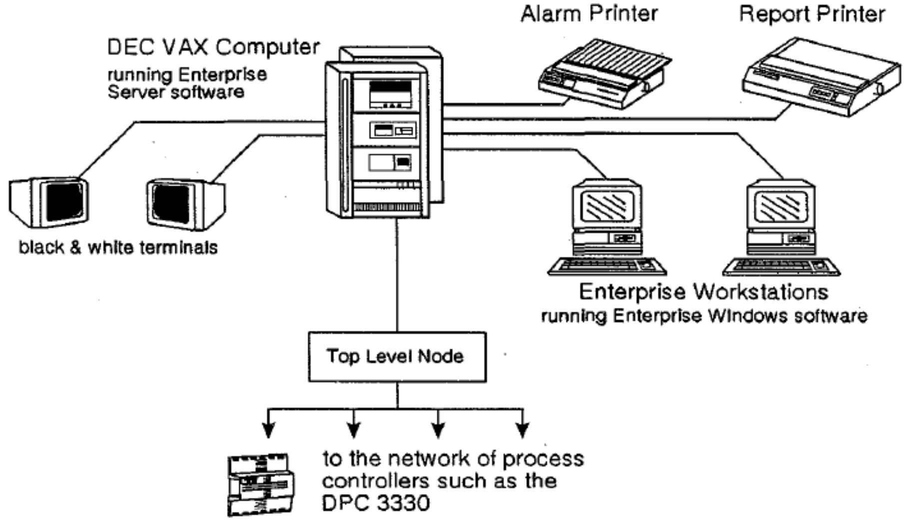
	Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
10. The system of claim 1, wherein the plurality of transceivers further comprise at least one actuated transceiver, wherein the actuated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference.
one of the plurality of transceivers;	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices.
a sensor detecting a second condition and outputting a sensed data signal to the transceiver; and	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices.
an actuator controlling a third condition and receiving control signals from the transceiver.	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices.

	At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1.
17. A system for communicating commands and sensed data between remote devices, the system comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.

	 Network 3000 CUG, p. 6.  Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1.

	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging

	data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44. "BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Each node has a unique address which is based on the node's sequential position within its level and its level number within the network." Network 3000 CUG, p. 4. "The global address is the complete address required to route a message to the node from anywhere in the network. It consists of a list of the nodes which a message would pass through in moving from the network master to the target node." Network 3000 CUG, p. A-12. "Levels of local addresses are concatenated to yield a unique address for each node within the network. This network-unique address is known as the global address." Network 3000 CUG, p. 5.

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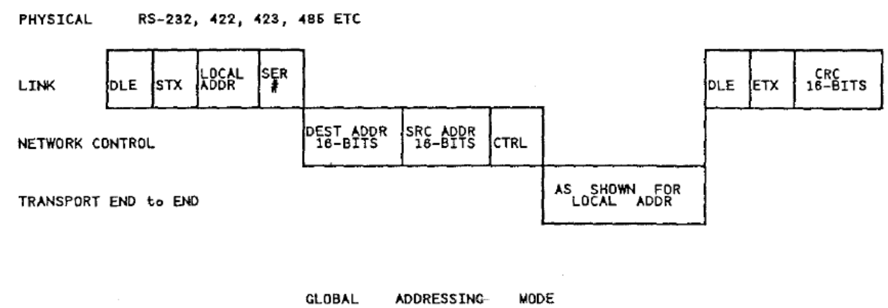
	"Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. 3.2 Data Message (Global And Local) Global data messages are those which must pass through at least one master before reaching their destination. The general format for a global message is: DLE,STX,LADD,SER,DADD,SADD,CTL,DFUN,SEQ,SFUN,NSB,DATA, DLE,ETX,CRC where: DLE = ASCII character 10H STX = ASCII character 02H LADD = Local address + 80H SER = Message serial number DADD = Destination global address SADD = Source global address CTL = Control byte DFUN = Destination function code SEQ = Application sequence number SFUN = Source function code NSB = Node Status Byte DATA = Application-dependent data (up to 241 bytes) DLE = ASCII character 10H ETX = ASCII character 03H CRC = Cyclic Redundancy Check Network 3000 CUG, p. 13.

	"The Remote Data Base Access (RDB) feature provides a convenient and flexible way of reading the data elements of a Network 3000 node. This mechanism is extended to read all memory mapped locations including the Input ports, and may write to all memory mapped location, excluding Output ports. …" Network 3000 CUG, p. 32.  Network 3000 CUG, p. A-15. "The basic function of RDB is to provide a method to read/write data from/to the data base of an 33xx. …" Network 3000 CUG, p. B-4. "The data associated with signals created with the AIC or ABC resides in the Master Signal Directory (MSD) in a 33xx. Signals may be requested by signal name, MSCD address or signal list. …" Network 3000 CUG, p. B-4.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via	"Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network

preformatted messages, wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	3000 SCM"), p. G-13.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every

	intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43.

	'252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for

	broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
sender address comprising the unique address of the sending transceiver;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been

	obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets:

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	U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some

	information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59.

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	'252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a command indicator comprising a command code;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent

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	No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or

	more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the

	MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
at least one data value comprising a scalable message; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a

	protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send

	and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted

	packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable

	length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector comprising a redundancy check error detector;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed

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	to the different system elements." '903, 4:23-31.
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, the '650 patent discloses: "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
wherein at least one of the plurality of transceivers further sends preformatted emergency messages.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the

	use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
18. The system of claim 17, wherein the controller maintains periods of silence by not sending the preformatted command messages during predetermined time periods; and	The above contentions for claim 17 are hereby incorporated by reference. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the

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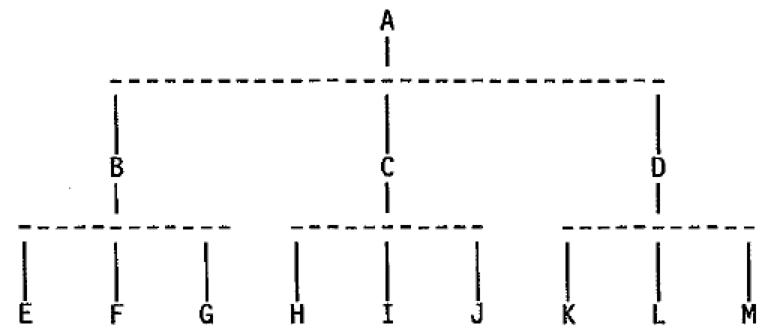
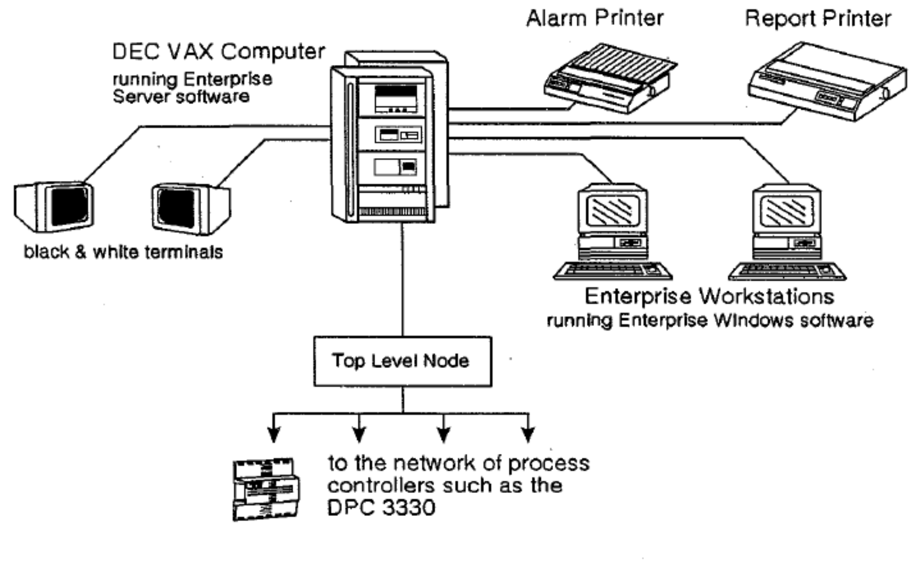
	use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
wherein the at least one of the plurality of transceivers detects a period of silence and sends the preformatted emergency message during the period of silence.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more

	sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
37. A method of communicating between geographically remote devices, the method comprising:	"The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4. "Network In the context of Network 3000, the network includes computers and process controllers which are connected by some kind of communication link (such as cable or radio) for the purpose of exchanging data." Network 3000 Server Configuration Manual, June 1992 ("Network 3000 SCM"), p. G-13. "Bristol Babcock provides two types of Modems: a Dedicated Line Modem, and a Switched Network Modem (radio compatible) which may be connected to the public telephone system." Network 3000 CUG, p. 44.

	"BSAP supports a simple tree topology. As a matter of terminology, the network master computer is defined as the root of the tree. Emanating from the root is the first level of node(s) or branch. From the first level there may be a second level; and from the second a third; and so forth up to a maximum of six levels." Network 3000 CUG, p. 4.  Network 3000 CUG, p. 6.

	 Figure 1-1 Typical System Configuration Network 3000 SCM, p. 1-1. "Real time data from a plant or process is connected by process instruments and measuring devices, and sent to a network of Bristol Babcock remote process controllers. The remote process controllers store the data in the form of software signals. ACCOL modules in the controllers perform calculations on the signal values and send data back to the actuating devices. At the same time, signal data from the remote controllers is passed up to higher levels of the network until it reaches a special controller called a top-level node. Top-level nodes perform special communication management functions for the remote controller network, and then pass

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	their data on to a centrally-located Digital Equipment Corporation (DEC) VAX computer." Network 3000 SCM, p. 1-1. "The Bristol Babcock Synchronous/Asynchronous Communication Protocol (BSAP) is the foundation for a proprietary network that has a tree structured topology. This open-ended topology supports a variety of configurations which may include one or more nodes at each of up to six levels." Network 3000 Communications Users Guide, Feb. 5, 1993 ("Network 3000 CUG"), p. 4.
sending a message;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, the '650 patent discloses: "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
receiving the message at one or more of the remote devices;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation.

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	For example, the '650 patent discloses: "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
processing the message;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, the '650 patent discloses: "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
preparing a response message;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional

	references teaching this limitation. For example, the '650 patent discloses: "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
receiving the response message;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, the '650 patent discloses: "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
processing the response message	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify

	Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, the '650 patent discloses: "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
wherein all messages comprise at least one packet, the packet having a predetermined format;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, the '650 patent discloses: "Those skilled in the art will recognize that minor changes can be made to the foregoing method. For example, a meter reading may be initiated by the first APP 112 to request data for a billing period. When the APP 112 request meter data, the DCS 100 sends a command to the DA 102 which in turn commands the I/O device to transfer the meter data from all of the meters to its primary cache 202." '650 patent, 10:7-12.
wherein the predetermined format comprises:	
a receiver address comprising a scalable address of the at	To the extent that Plaintiffs contend that this claim limitation is not

least one of the intended receiving remote devices;	disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets:

	U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several

	different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59.

	'252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a sender address comprising an unique address of the sender;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

	For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start

	and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required;

	alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing:

	Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a command indicator comprising a command code;	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, Burchfiel, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

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	For example, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 Similarly, Burchfiel, which is also directed to the PRNET, discloses: "The "function fields" provides an address: within a PRU, it selects the control process, the debugging process, or the measurement process." Burchfiel page 247. "A level-3 debugging protocol has been defined which supports debugging of remote PRU's from terminals attached to a central station. The debugging functions include examining and depositing words into the PRU memory, and setting "mousetraps" which send an error code to the controlling station when some anomalous condition occurs, e.g., hardware failure." Burchfiel page 248. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60.

	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses:

	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a scalable data value comprising a scalable message; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end

	(ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25.

	"The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

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	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R.

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	Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
an error detector that is a redundancy check error detector; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

wherein the steps of sending and receiving are repeated until the message is received by the intended receiver.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Network 3000, it would have been obvious to a person ordinary skill in the art to combine and/or modify Network 3000 with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. .

Exhibit P12 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent No. 6,044,062

The '492 Patent – Claim	U.S. Patent No. 6,044,062
1. In a communication system to communicate command and sensed data between remote devices, the system comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a receiver address comprising a scalable address of at least one remote device;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more

	of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets:

	U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43.

	'252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the

Exhibit P12 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent No. 6,044,062

	nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.

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	Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
a command indicator comprising command code;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in

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	the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the

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	ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-

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	3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a data value comprising a scalable message; and	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below.

	For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson:

	"FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in

	several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual

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	address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more

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	commercialized and proposing extensions for IP addressing.
a controller associated with a remote device comprising a transceiver configured to send and receive wireless signals, the remote device configured to send a preformatted message comprising the receiver address, a command indicator, and the data value via the transceiver to at least one other remote device.	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses:

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	"From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its

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	most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters

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	and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
2. The system of claim 1, further comprising:	The above contentions for claim 1 are hereby incorporated by reference.
a plurality of transceivers each having a unique address, the transceiver being one of the plurality of transceivers;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing

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	housekeeping functions." '062: 5:25-32.
a plurality of controllers associated with each the controller associated with at least one of the transceivers, the controller being in communication with at least one other transceiver with a preformatted message, the preformatted message having at least one scalable field;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in Kahn, it would have been obvious to a person ordinary skill in the art to combine and/or

	modify Kahn with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable

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	fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: “FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers.” ‘252 patent, 38:34-43. ‘252 patent, Figure 25. “The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll.” ‘252 patent, 39:28-43.

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	'252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is

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	identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.

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	Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
at least one sensor associated with at least one of the transceivers to detect a condition and output a data signal to the transceiver; and	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
at least one actuator associated with at least one of the transceivers to activate a device.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No.

	5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by

	monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be

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	used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
3. The system of claim 1, wherein the controller sends the preformatted message via an associated transceiver, and at least one transceiver sends the preformatted response message.	The above contentions for claim 1 are hereby incorporated by reference. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of

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	clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses:

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	"From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be

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	programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater

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	functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
4. The system of claim 1, wherein at least one transceiver receives the preformatted message requesting sensed data, confirms the receiver address as its own unique address, receives a sensed data signal, formats the sensed data signal into scalable byte segments, determines the number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 1 are hereby incorporated by reference. "In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5.

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	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin

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	page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module,

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	but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type.

	Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365,

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	September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
6. The system of claim 1, wherein each remote device is adapted to transmit and receive radio frequency transmissions to and from at least one other transceiver.	The above contentions for claim 1 are hereby incorporated by reference. "In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5.
8. A method of communicating command and sensed data between remote wireless devices, the method comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062

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	patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
providing a receiver to receive at least one message;	"In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5.
wherein the message has a packet comprising a command indicator comprising a command code, a scalable data value comprising a scalable message, and an error detector that is a redundancy check error detector; and	"In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client

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	transmit buffer." '062, 13:27-43. '620 patent, Figure 5. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. "The devices 272 and 276 are used for error correction and noise cancellation, as will be appreciated by those skilled in the art." '062 patent, 18:33-34. "The HDLC performs a checksum on the received packets…." '062 patent, 18:41-42. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses:

	"From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-

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	B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data

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	for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses:

	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are

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	supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network

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	service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that

	uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
providing a controller to determine if at least one received message is a duplicate message and determining a location from which the duplicate message originated.	"In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5. "In FIG. 5a, a "data packet" 112 in accordance with the present

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	invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
9. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices comprise geographically remote transceivers adapted to transmit and receive at least one message using radio frequency transmissions.	The contentions for claim 8 are incorporated by reference. "The Internet is a WAN that has, of late, become extremely popular. … To accomplish this goal, robust protocols and systems were developed which allowed a geographically distributed collection of computer systems to be connected by means of a network that would remain operational even if large portions of the network were destroyed." '062 patent, 1:22-32.
10. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices has a unique address and the packet further comprises at least one scalable address field to contain the unique address for at least one device.	The above contentions for claim 8 are hereby incorporated by reference. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.

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	subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields.

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	Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
11. The method of claim 8, further comprising providing an actuator associated with at least one of the remote devices, the actuator configured to actuate in response to the command code.	The above contention for claim 8 is hereby incorporated by reference. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the

	'773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60.

	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet

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	network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
13. The method of claim 8, further comprising determining if an error exists in a packet of the at least one message.	The above contention for claim 8 is hereby incorporated by reference. "The devices 272 and 276 are used for error correction and noise cancellation, as will be appreciated by those skilled in the art." '062 patent, 18:33-34. "The HDLC performs a checksum on the received packets." '062 patent, 18:41-42.

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14. A wireless communication device for use in a communication system to communicate command and sensed data between remote wireless communication devices, the wireless communication device comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a transceiver configured to send and receive wireless communications; and	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to format a message comprising a receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code, a data value comprising a scalable message.	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes

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	the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are

	available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26.

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	U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51.

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	U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable

	fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43.

	'252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is

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	identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.

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	Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
15. The wireless communication device of claim 14, further comprising at least one sensor configured to detect a condition and output a signal to the controller.	The above contentions for claim 14 are hereby incorporated by reference. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
16. The wireless communication device of claim 14, wherein the controller is further configured to determine if at least one received message is a duplicate message and determine a location from which the duplicate message originated.	The above contentions for claim 14 are hereby incorporated by reference. "In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client

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	transmit buffer." '062, 13:27-43. '620 patent, Figure 5. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
17. The wireless communication device of claim 14, further comprising at least one actuator configured to implement an action corresponding to the command code.	The above contention for claim 14 is hereby incorporated by reference. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more

	of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data

	transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information

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	originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
18. The device of claim 14, wherein the transceiver comprises a unique transceiver address to distinguish the transceiver from other transceivers.	The above contentions for claim 14 are hereby incorporated by reference. "In FIG. 5a, a "data packet" 112 in accordance with the present

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	invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
19. In a system for communicating commands and sensed data between remote devices comprising a communications device for communicating commands and sensed data, the communications device comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a transceiver operably configured to be in communication with at least one other of a plurality of transceivers, wherein the transceiver has a unique address, wherein the unique address identities the individual transceiver, wherein the transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with each of the other transceivers via preformatted messages;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in

	accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5.
a controller configured to be in communication with the transceiver, the controller configured to provide preformatted messages for communication;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
wherein the preformatted message comprises at least one packet, wherein the packet comprises: a receiver address comprising a scalable address of the at least one of the intended receiving transceivers; sender address comprising the unique address of the sending transceiver; a command indicator comprising a command	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the

code; at least one data value comprising a scalable message; and an error detector comprising a redundancy check error detector; and wherein the controller is configured to interact with the transceiver to send preformatted command messages.	"link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23.

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	"A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26.

	U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses:

	"The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets:

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	U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43.

	'252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the

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	nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.

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	Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.
20. The communication device of claim 19, further comprising a sensor operatively configured to detect a condition and output a sensed data signal that corresponds to the condition to the transceiver.	The above contentions for claim 19 are hereby incorporated by reference. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
21. The communication device of claim 20, wherein the transceiver is configured to receive a preformatted command message requesting sensed data, confirms the receiver address is its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 20 are hereby incorporated by reference. "In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43.

	‘620 patent, Figure 5. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 (“the ‘217 patent”), U.S. Patent No. 5,963,650 (“the ‘650 patent”), U.S. Patent No. 5,907,491 (“the ‘491 patent”), U.S. Patent No. 7,027,773 (“the ‘773 patent”), U.S. Patent No. 6,100,817 (“the ‘817 patent”), U.S. Patent No. 5,874,903 (“the ‘903 patent”) or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: “From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated.” Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: “PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator.” Jubin page 23. “A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute

	jobs, execute procedure, etc.—are available for local debugging." Jubin page 23. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data

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	transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information

	originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson:

	"FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in

	several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual

	address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields. Network Working Group Request for Comments No. 1375, October 1992, P. Robinson, recognizing need for additional Internet address space as the Internet becomes more

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	commercialized and proposing extensions for IP addressing.
25. A wireless communication device for use in a communication system to communicate a number of commands and sensed data between remote wireless communication devices, the wireless communication device comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
a transceiver configured to send and receive wireless communications; and	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to reformat a message comprising receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code; a data value comprising a scalable message.	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13.

	'062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter

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	with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson:

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	"For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller.

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	Internet address space as the Internet becomes more commercialized and proposing extensions for IP addressing.

Exhibit P12 – Invalidity Chart for U.S. Patent No. 7,468,661 based on U.S. Patent No. 6,044,062

The '661 Patent – Claim	U.S. Patent No. 6,044,062
1. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "The server of the present invention provides a gateway between two networks, where at least one of the networks is a wireless network." '062 patent, 5:39-41. "In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52.

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	'062 patent, Figure 1. '062 patent, Figure 3.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. '062 patent, Figure 1
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
5. A system for monitoring remote devices, comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio

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	modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. '062 patent, Figure 1
at least one wireless transmitter electrically interfaced with the sensor and configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a radio-frequency (RF) signal;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
one or more additional wireless transmitters each	"A wireless network system in accordance with the present invention includes

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electrically interfaced with a sensor and configured to receive the RF signal and retransmit the RF signal;	at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. '062 patent, Figure 1
at least one gateway connected a wide area network (WAN) configured to receive and translate the retransmitted RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. '062 patent, Figure 1.

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	"In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52. '062 patent, Fig. 3.
6. The system of claim 5, wherein the at least one gateway is permanently connected to the WAN.	The above contentions for claim 5 are incorporated by reference. "The server includes a radio modem capable of communicating with a first, wireless network of the present invention, a network interface capable of communicating with a second network (which may or may not be wireless and, in face, is preferably a wired TCP/IP protocol network.), and a digital controller coupled to the radio modem and to the network interface." '062 5:43-50.
8. The system of claim 5, wherein the gateway translates the encoded electrical signal, the transmitter identification and the transceiver identification information into TCP/IP for communication over the WAN.	The above contentions for claim 5 are incorporated by reference. "The server includes a radio modem capable of communicating with a first, wireless network of the present invention, a network interface capable of communicating with a second network (which may or may not be wireless and, in face, is preferably a wired TCP/IP protocol network.), and a digital controller coupled to the radio modem and to the network interface." '062 5:43-50.
9. A system for controlling a remote device comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with

	the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a target remote device having an actuator to be controlled;	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn,

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	page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses:

	"Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions,

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	commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. '062 patent, Figure 1. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495.

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	Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred

	embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

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a gateway connected to the WAN configured to receive and translate the at least one control signal	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a wireless transmitter coupled with the gateway for transmitting a wireless signal that contains the control signal;	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a first wireless transceiver electrically interfaced with an actuator for receiving the wireless signal and further retransmitting the wireless signal to the target remote device; and	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
logic coupled to the target remote device for extracting the control signal from the retransmitted wireless signal and imparting an action on the actuator in response to the extracted control signal.	"The wireless network system 10 further includes a number of clients 18, each including a client machine 20 and a radio modem 22. The client machine can be any form of digital processor…." '062 patent, 8:8-12.

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	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data

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	storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.

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	U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31. '062 patent, Figure 1.
10. The system of claim 9, further comprising:	The above reasons for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio

	modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. '062 patent, Figure 1. "In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5.
11. The system of claim 9, further comprising:	The above reasons for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator or a sensor and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
12. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio

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	modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "The server of the present invention provides a gateway between two networks, where at least one of the networks is a wireless network." '062 patent, 5:39-41. "In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52. '062 patent, Figure 1. '062 patent, Figure 3.
a plurality of non-earth orbiting transceivers	"A wireless network system in accordance with the present invention includes

dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. '062 patent, Figure 1. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

WAN.	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
14. The system as defined claim 12, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communication over the WAN.	The contentions for claim 12 are incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.

Exhibit P12 – Invalidity Chart for U.S. Patent No. 6,437,692 based on U.S. Patent No. 6,044,062

The '692 Patent – Claim	U.S. Patent No. 6,044,062
1. A system for remote data collection, assembly, and storage comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "The server of the present invention provides a gateway between two networks, where at least one of the networks is a wireless network." '062 patent, 5:39-41. "In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52.

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	‘062 patent, Figure 1. ‘062 patent, Figure 3.
at least one wireless transmitter configured to transmit select information and transmitter identification information;	“A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem.” ‘062 patent, 5:8-11. “A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a “gateway” function to another network, and performing housekeeping functions.” ‘062: 5:25-32. ‘062 patent, Figure 1
a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically at defined locations configured to receive select information transmitted from at least one nearby wireless transmitter and further configured to transmit the select information, the transmitter identification information and transceiver identification information; and	“A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem.” ‘062 patent, 5:8-11. “A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a “gateway” function to another network, and performing housekeeping functions.” ‘062: 5:25-32.

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	'062 patent, Figure 1
at least one gateway connected to the wide area network configured to receive and translate the select information, the transmitter identification information, and transceiver identification information, said gateway further configured to farther transmit the translated information to the computer over the WAN.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
3. The system as defined in claim 1, wherein each wireless transmitter is configured to transmit a relatively low-power, radio-frequency (RF) signal.	The above contentions for claim 1 are hereby incorporated by reference. "A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
4. The system as defined in claim 1, wherein each wireless transmitter is integrated with a sensor.	The above contentions for claim 1 are hereby incorporated by reference. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
5. The system as defined in claim 1, wherein the RF signal transmitted by the transceiver contains a	The above contentions for claim 1 are hereby incorporated by reference.

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concatenation of information comprising select information and transmitter identification information from the originating transmitter and transceiver identification information for each transceiver that receives and repeats the RF signal.	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
6. The system as defined in claim 5, wherein the at least one transmitter is replaced by a transceiver, the transceiver further integrated with an actuator.	The above contentions for claim 5 are hereby incorporated by reference. "A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio

	modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
7. The system as defined in claim 6, wherein the transceivers are configured to communicate with the gateway via a RF signal.	The above contentions for claim 6 are hereby incorporated by reference. "A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
8. The system as defined in claim 7, wherein the computer is further configured to respond to received select information by communicating a control signal to at least one transceiver, wherein the actuator integrated with the transceiver is responsive to the control signal.	The above contentions for claim 7 are hereby incorporated by reference. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

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11. The system as defined in claim 1, wherein the gateway includes one selected from the group consisting of:	The above contentions for claim 1 are hereby incorporated by reference.
a modem for establishing a dial-up connection with a remote computer; a network card for communicating across a local area network; a network card for communicating across the WAN, a DSL modem; and an ISDN card to permit backup access to the computer.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
12. The system as defined in claim 1, wherein the gateway translates the select information, the transmitter identification, and the transceiver identification information to TCP/IP for communication over the WAN.	The above contentions for claim 1 are hereby incorporated by reference. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
13. The system as defined in claim 1, wherein the WAN is the Internet.	The above contentions for claim 1 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.

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14. The system as defined in claim 1, wherein the WAN is a dedicated Intranet.	The above contentions for claim 1 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
24. A method for controlling a system comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
remotely collecting data from at least one sensor;	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
processing the data into a radio-frequency (RF)	"A method of providing wireless network communication in accordance with

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signal;	the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
transmitting the RF signal, via a relatively low-power transceiver, to a gateway;	"The server controller implements a server process that includes the controlling the server radio modem for the receipt and transmission of data packets from clients of the network." '062 patent 5:12-15.
translating the data in the RF signal into a network transfer protocol;	"The server controller implements a server process that includes the controlling the server radio modem for the receipt and transmission of data packets from clients of the network." '062 patent 5:12-15. "The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by the at least one sensor by generating an appropriate control signal;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
sending the control signal via the network to the gateway,	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after

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	performing any necessary translations to the data packets." '620 patent 5:50-55.
translating the control signal from a network transfer protocol into an RF control signal;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
transmitting the RF control signal;	"The server controller implements a server process that includes the controlling the server radio modem for the receipt and transmission of data packets from clients of the network." '062 patent 5:12-15.
receiving the RF control signal;	"The server controller implements a server process that includes the controlling the server radio modem for the receipt and transmission of data packets from clients of the network." '062 patent 5:12-15.
translating the received RF control signal into an analog signal; and	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
applying the analog signal to an actuator to effect the desired system response.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a

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	"gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
25. The method of claim 24, wherein the RF signal contains a concatenation of information comprising encoded data information and transmitter identification information from an originating transmitter.	The above contentions for claim 24 are hereby incorporated by reference. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
26. The method of claim 25, wherein the step of transmitting the RF signal is further performed by at least one transceiver, wherein the transceiver is configured to concatenate a transceiver identification code to the RF signal.	The above contentions for claim 25 are hereby incorporated by reference. "A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio

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	modem." '062 patent, 5:8-11.
27. The method of claim 25, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 25 are hereby incorporated by reference. "A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
28. The method of claim 25, wherein the steps of translating and applying the received RF control signal are performed only by an identified transceiver electrically integrated with an actuator.	The above contentions for claim 25 are hereby incorporated by reference. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
29. The method of claim 25, wherein the network is the Internet.	The above contentions for claim 25 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.

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30. The method of claim 25, wherein the network is an Intranet.	The above contentions for claim 25 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
31. The method of claim 25, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 25 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
32. A system for monitoring remote devices comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client

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	process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
at least one wireless transmitter configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a low-power radio-frequency (RF) signal;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
at least one gateway connected a wide area network (WAN) configured to receive and translate the RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "The server of the present invention provides a gateway between two networks,

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	where at least one of the networks is a wireless network." '062 patent, 5:39-41. "In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52. '062 patent, Figure 3.
34. The system defined in claim 32, wherein each wireless transmitter is configured to transmit a relatively low-power radio-frequency (RF) signal.	The above contentions for claim 32 are hereby incorporated by reference. "A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
36. The system defined in claim 32, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communicating over the WAN.	The above contentions for claim 32 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
37. The system defined in claim 32, wherein the WAN is the Internet.	The above contentions for claim 32 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.

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38. The system defined in claim 32, wherein the WAN is a dedicated Intranet.	The above contentions for claim 32 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
42. A system for controlling remote devices comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "The server of the present invention provides a gateway between two networks, where at least one of the networks is a wireless network." '062 patent, 5:39-41.

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	"In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52. '062 patent, Figure 3.
at least one gateway connected to the WAN configured to receive and translate the at least one control signal; said gateway further configured to transmit a radio-frequency (RF) signal containing the control signal and destination information;	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "Furthermore a router 14 or bridge can be used to couple the I/O bus 46 to the Internet 12. '062 12:64-65.
at least one wireless low-power RF transceiver configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator; and	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server

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further configured to translate the analog output signal into a response.	process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
43. The system defined in claim 42, the system input signal comprising:	The above contentions for claim 42 are hereby incorporated by reference.
a concatenation of information including data from a sensor, transceiver identification information from the originating transceiver, and transceiver identification information for each transceiver that receives and repeats the RF signal.	"In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
46. The system defined in claim 42, wherein the gateway translates the RF signal and the RF control	The above contentions for claim 42 are hereby incorporated by reference.

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signal into TC/IP for communication over the WAN.	"In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
47. The system defined in claim 42, wherein the WAN is the Internet.	The above contentions for claim 42 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
48. The system defined in claim 42, wherein the WAN is a dedicated Intranet.	The above contentions for claim 42 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
49. A system for managing an arrangement of application specific remote devices comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

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a computer configured to execute a multiplicity of computer programs, each computer program executed to generate at least one control signal in response to at least one application system input, said computer integrated with a wide area network (WAN);	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "The server of the present invention provides a gateway between two networks, where at least one of the networks is a wireless network." '062 patent, 5:39-41. "In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52. '062 patent, Figure 3.
at least one gateway connected to the WAN configured as a two-way communication device to receive and translate the at least one control signal and the at least one application system input; said gateway further configured to translate and transmit a radio-frequency (RF) signal containing the control signal and destination information, said gateway further configured to receive and translate the at least one application system input and source information;	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "Furthermore a router 14 or bridge can be used to couple the I/O bus 46 to the Internet 12. '062 12:64-65.

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at least one wireless relatively low-power RF transceiver per computer program configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator and a sensor;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response; and	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a sensor configured to translate a physical condition into an analog version of the application system input.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
51. The system as defined in claim 49, wherein the at least one gateway translates the RF signal and the RF control signal into TCP/IP for communication over the WAN.	The above contentions for claim 49 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.

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52. The system as defined in claim 49, wherein the WAN in the Internet.	The above contentions for claim 49 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
53. The system as defined in claim 49, wherein the WAN is a dedicated Intranet.	The above contentions for claim 49 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
54. The system as defined in claim 49, wherein the at least one gateway is connected to the WAN by a network selected from the group consisting of a telecommunications network, private radio-frequency network, and a computer network.	The above contentions for claim 49 are hereby incorporated by reference. "Furthermore a router 14 or bridge can be used to couple the I/O bus 46 to the Internet 12. '062 12:64-65.
55. A method of collecting information and providing data services comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a

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	"gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
adaptively configuring a data translator at the output of a local controller, wherein the data translator converts the output data stream into an information signal consisting of a transmitter code and an information field;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
adaptively configuring at least one transmitter with the data translator, wherein the transmitter converts the information signal into a low-power RF signal;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
placing a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically wherein the low power RF signal is received and repeated as required to communicate the information signal to a gateway, the gateway providing access to a WAN;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client

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	process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
translating the low-power RF signal within the gateway to a WAN compatible data transfer protocol;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
transferring the translated low-power RF signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in said signal; and	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
granting client access to the computer.	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.

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56. The method of claim 55 wherein the WAN is the Internet.	The above contentions for claim 55 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
57. The method of claim 55 wherein the WAN is an Intranet.	The above contentions for claim 55 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
59. The method of claim 55 wherein the clients access the information using a web browser.	The above contentions for claim 55 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
60. A method for controlling an existing control system with a local controller comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server

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	process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
adaptively configuring a data translator disposed between and in communication with both a local controller and a wireless transceiver, wherein the data translator is configured to translate the local controller data stream into an information signal consisting of a transceiver identification code and a concatenation of function codes, the data translator further configured to translate control signals from the wireless transceiver into local controller recognized control signals;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, U.S. Patent No. 6,100,817, which discloses "[i]f a message does not fit into the 32 byte Information field, the message is segmented into multiple packets. A segmented message requires a 3 byte NPDU header. Messages fitting into the 32 byte Information field only require a 1 byte NPDU header." '817 patent, 7:61-66.
remotely collecting data from the at least one relatively low-powered radio-frequency (RF) transceiver integrated with the data translator;	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

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processing the data into an RF signal;	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "The server controller implements a server process that includes the controlling the server radio modem for the receipt and transmission of data packets from clients of the network." '062 patent 5:12-15.
transmitting the RF signal to a gateway;	"The server controller implements a server process that includes the controlling the server radio modem for the receipt and transmission of data packets from clients of the network." '062 patent 5:12-15. "The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
translating the data in the RF signal into a network transfer protocol;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
sending the translated data to a computer, wherein the computer is configured to appropriately respond	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the

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to the data generated by at least one sensor by generating an appropriate control signal;	second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
sending the control signal via the network to the gateway;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
translating the control signal from a network transfer protocol into an RF control signal;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
transmitting the RF control signal;	"The server controller implements a server process that includes the controlling the server radio modem for the receipt and transmission of data packets from clients of the network." '062 patent 5:12-15.
receiving the RF control signal;	"The server controller implements a server process that includes the controlling the server radio modem for the receipt and transmission of data packets from clients of the network." '062 patent 5:12-15.
translating the received RF control signal into a local controller recognized control signal; and	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a

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	"gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
applying the local controller recognized control signal via a local control to effect the desired system response.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
61. The method of claim 60, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 60 are hereby incorporated by reference. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
62. The method of claim 60, wherein the network is the Internet.	The above contentions for claim 60 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.

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63. The method of claim 60, wherein the network is an Intranet.	The above contentions for claim 60 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.
64. The method of claim 60, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 60 are hereby incorporated by reference. "In the present invention, it is preferred that the second network operates on the aforementioned TCP/IP protocols, i.e., the second network is the Internet or is a private Intranet." '062 patent, 7:34-37.

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The '732 Patent – Claim	U.S. Patent No. 6,044,062
1. A system for remote data collection, assembly, storage, event detection and reporting and control, comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "The server of the present invention provides a gateway between two networks, where at least one of the networks is a wireless network." '062 patent, 5:39-41. "In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52.

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	'062 patent, Figure 1. '062 patent, Figure 3.
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. '062 patent, Figure 1
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN and wherein at least one of said plurality of transceivers is also electrically interfaced with an actuator to control an actuated device.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

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13. In a system comprising a plurality of wireless devices configured for remote wireless communication and comprising a device for monitoring and controlling remote devices, the device comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way

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	(i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
a data controller operatively coupled to the transceiver and the sensor, the data controller configured to control the transceiver and receive data from the sensor, the data controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
14. The device of claim 13, wherein the data controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

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	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses:

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	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the

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	MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
16. The device of claim 13**,** wherein the data controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a

	person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions

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	provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses:

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	"In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
17. The device of claim 13**,** wherein the data controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No.

	5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in

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	memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control."

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18. The device of claim 13, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the data controller can implement.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below.

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	during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses:

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	"Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
19. The device of claim 13, further comprising an actuator configured to receive command data from the controller and in response implement the command.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses:

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	installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity.” U.S. Patent No. 5,963,650 discloses: “Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices.” ‘650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: “The Data portion of a MinionNet network Standard Message with a Type Code meaning “Command” will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network.” ‘773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: “In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control.” ‘817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: “Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits

	of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
31. A wireless communication system including wireless communication devices capable of wireless communication, the wireless communication system comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
at least one wireless communication device comprising a transceiver, the transceiver having a unique identification code and being interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping

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	functions." '062: 5:25-32. "In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control transceiver operations and receive data from the sensor, the controller configured to format data packets for transmission via the transceiver with at least some data packets comprising data representative of data sensed with the sensor; and	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
wherein the controller is configured to receive control signals from a data packet and based on the control signals send instructions to an actuator to implement a command.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses:

	"Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the

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	MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
32. The wireless communication system of claim 31, further comprising at least one gateway connected to a WAN configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to a computing device over	The above contentions for claim 31 are incorporated by reference. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

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the WAN.	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13.
33. The wireless communication system of claim 31, further comprising a computing device configured to receive user input and based on user input, the computing device formatting control signals, and wherein the controller is configured to receive the control signals via wireless transmission and take action based on the control signals.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic

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	sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity."

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	system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
34. The wireless communication system of claim 31, wherein the controller is configured to provide one or more function codes in the data packet in response to data sensed by the sensor.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses:

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	application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

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35. The wireless communication system of claim 31, wherein the controller comprises a memory containing a plurality of function codes specific to the sensor.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23.

	"A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51.

Exhibit P12 – Invalidity Chart for U.S. Patent No. 8,013,732 based on U.S. Patent No. 6,044,062

	U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

Exhibit P12 – Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 6,044,062

The '780 Patent – Claim	U.S. Patent No. 6,044,062
1. In a system comprising a plurality of wireless devices, a device comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from a second wireless transceiver in a predetermined signal type;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing

Exhibit P12 – Invalidity Chart for U.S. Patent No. 8,754,780 based on U.S. Patent No. 6,044,062

	housekeeping functions." '062: 5:25-32. "In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the second wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
a controller operatively coupled to the transceiver and the sensor, the controller configured to control the transceiver and receive data from the sensor, the controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	"The wireless network system 10 further includes a number of clients 18, each including a client machine 20 and a radio modem 22. The client machine can be any form of digital processor…." '062 patent, 8:8-12. "The digital controller passes data packets received from the first network that are destined for the second network, and passes data

	packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
2. The device of claim 1, wherein the controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are

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	available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the

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	preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred

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	embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
4. The device of claim 1, wherein the controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are

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	available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the

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	preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred

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	embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
5. The device of claim 1, wherein the controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code that identifies the transceiver.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
6. The device of claim 1, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the controller can implement.	"The wireless network system 10 further includes a number of clients 18, each including a client machine 20 and a radio modem 22. The client machine can be any form of digital processor…." '062 patent, 8:8-12.
7. The device of claim 1, further comprising an actuator configured to receive command data from the controller and in response implement a command.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S.

	Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60.

	"During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19.

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	U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
8. The device of claim 1, wherein the second transceiver is nearby to the transceiver.	'062 patent, Figure 1.

Exhibit P12 – Invalidity Chart for U.S. Patent No. 8.908,842 based on U.S. Patent No. 6,044,062

The '842 Patent – Claim	U.S. Patent No. 6,044,062
1. A device for communicating information, the device comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
a low-power transceiver configured to wirelessly transmit a signal comprising instruction data for delivery to a network of addressable devices;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
an interface circuit for communicating with a central location; and	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
a controller coupled to the interface circuit and to the low-power transceiver, the controller configured to establish a communication link between at least one device in the network of addressable devices and the central location using an address included in the signal, the communication link comprising one or more devices in the network of addressable, the controller further configured to receive one or more signals via the low-power transceiver and communicate information contained within the signals to the central location.	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "The wireless network system 10 further includes a number of clients 18, each including a client machine 20 and a radio modem 22. The client machine can be any form of digital processor…." '062 patent, 8:8-12.

Exhibit P12 – Invalidity Chart for U.S. Patent No. 8.908,842 based on U.S. Patent No. 6,044,062

	"In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5.
7. The device of claim 1, wherein the controller is further configured to communicate a transceiver identification code to the central location via the interface circuit.	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
9. The device of claim 1, wherein transmitted and received signals further comprise a field configured to indicate a destination device for a subsequent transmission path to follow.	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062

Exhibit P12 – Invalidity Chart for U.S. Patent No. 8.908,842 based on U.S. Patent No. 6,044,062

	patent, 14:5-13. '062 patent, Figure 5a.
16. A device for communicating information, the device comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "The server of the present invention provides a gateway between two networks, where at least one of the networks is a wireless network." '062 patent, 5:39-41. "In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52. '062 patent, Fig. 3.
a processor; and	"The server controller implements a server process that includes the controlling the server radio modem for the receipt and transmission of data packets from clients of the network." '062 patent 5:12-15. "The server includes a radio modem capable of communicating with a first, wireless network of the present invention, a network interface capable of communicating with the second network …

Exhibit P12 – Invalidity Chart for U.S. Patent No. 8.908,842 based on U.S. Patent No. 6,044,062

	and a digital controller coupled to the radio modem and to the network interface." '062 patent, 5:43-50. "In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52. '062 patent, Fig. 3
.a memory, the memory comprising logical instructions that when executed by the processor are configured to cause the device to:	"In FIG. 3, a block diagram of the server 16 of FIG. 1 is illustrated. In this instance, the server 16 includes a computer system 28 and a number of peripherals coupled to the computer system. …By way of example, the computer system 38 includes a microprocessor 44 that is coupled to a memory bus 44 and to an input/output (I/O) bus 46." '062 patent 12:43-52. '062 patent, Fig. 3.
wirelessly transmit a signal comprising instruction data for delivery to a network of addressable low-power transceivers;	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
establish a communication link between at least one low-power transceiver in the network of addressable low-power transceivers and a central location based on an address included in the signal,	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of

Exhibit P12 – Invalidity Chart for U.S. Patent No. 8.908,842 based on U.S. Patent No. 6,044,062

the communication link comprising one or more low-power transceivers in the network of addressable low-power transceivers; and	clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
receive one or more low-power RF signals and communicate information contained within the signals to the central location along with a unique transceiver identification number over the communication link.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
17. A device for communicating information, the device comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
a low-power transceiver that is configured to wirelessly receive a signal including an instruction data from a remote device;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.

an interface circuit for communicating with a central location;	"The wireless network system 10 further includes a number of clients 18, each including a client machine 20 and a radio modem 22. The client machine can be any form of digital processor…." '062 patent, 8:8-12. '062 patent, Figure 1.
a controller coupled to the interface circuit and to the low-power transceiver, the controller being configured to establish a communication link between the remote device and the central location using address-indicative data included in the signal;	"The wireless network system 10 further includes a number of clients 18, each including a client machine 20 and a radio modem 22. The client machine can be any form of digital processor…." '062 patent, 8:8-12. '062 patent, Figure 1.
the controller further configured to receive one or more data signals from the central location via the interface circuit and communicate information contained within the signals to the remote device.	"The wireless network system 10 further includes a number of clients 18, each including a client machine 20 and a radio modem 22. The client machine can be any form of digital processor…." '062 patent, 8:8-12. '062 patent, Figure 1. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing

	housekeeping functions." '062: 5:25-32.

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The '893 Patent – Claim	U.S. Patent No. 6,044,062
1. A system for communicating commands and sensed data between remote devices, the system comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

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a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages;	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-

	B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first,

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	broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a

	network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing

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	explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.
sender address comprising the unique address of the sending transceiver;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
a command indicator comprising a command code;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13.

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	‘062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the ‘062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the ‘062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 (“the ‘217 patent”), U.S. Patent No. 5,963,650 (“the ‘650 patent”), U.S. Patent No. 5,907,491 (“the ‘491 patent”), U.S. Patent No. 7,027,773 (“the ‘773 patent”), U.S. Patent No. 6,100,817 (“the ‘817 patent”), U.S. Patent No. 5,874,903 (“the ‘903 patent”) or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: “From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated.” Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: “PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator.” Jubin page 23. “A plethora of terminal commands – display memory, alter

	memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition

	device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different

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	system elements." '903, 4:23-31.
at least one data value comprising a scalable message; and	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the

	destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three

	delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting

	which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two

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	serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.
an error detector comprising a redundancy check error detector; and	"The devices 272 and 276 are used for error correction and noise cancellation, as will be appreciated by those skilled in the art." '062 patent, 18:33-34. "The HDLC performs a checksum on the received packets." '062 patent, 18:41-42.
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.

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2. The system of claim 1, wherein the plurality of transceivers further comprise at least one integrated transceiver, wherein the integrated transceiver comprises:	The above contentions for claim 1 are incorporated by reference.
one of the plurality of transceivers; and	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
a sensor detecting a condition and outputting a sensed data signal to the transceiver.	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11.
3. The system of claim 2, wherein the at least one integrated transceiver receives the preformatted command message requesting sensed data, confirms the receiver address as its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet, wherein the packets are equal to the number of segments.	The above contentions for claim 2 are incorporated by reference. "In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5.

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	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin

	page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module,

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	but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type.

	Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365,

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	September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.
10. The system of claim 1, wherein the plurality of transceivers further comprise at least one actuated transceiver, wherein the actuated transceiver comprises:	The above contentions for claim 1 are hereby incorporated by reference. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
one of the plurality of transceivers;	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a sensor detecting a second condition and outputting a sensed data signal to the transceiver; and	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem,

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	sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
an actuator controlling a third condition and receiving control signals from the transceiver.	"A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted,

	if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through

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	appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51. U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2.

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	U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
17. A system for communicating commands and sensed data between remote devices, the system comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of	"A wireless network system in accordance with the present invention includes at least one server having a server controller

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transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages, wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	"A wireless network system in accordance with the present invention includes at least one server having a server controller and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The

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	data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for

	routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service

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	module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to

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	addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.
sender address comprising the unique address of the sending transceiver;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
a command indicator comprising a command code;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.

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	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging." Jubin page 23

	U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51.

	U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.
at least one data value comprising a scalable message; and	"In FIG. 5a, a "data packet" 112 in accordance with the present

	invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: "*A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-B). … *Routing Header:* The routing header is created by the source PR,

	encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first, broadcast to class address, is used for messages which are supposed to be received by all network service modules

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	belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39.

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	"FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source

	Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.
an error detector comprising a redundancy check error detector;	"The devices 272 and 276 are used for error correction and noise cancellation, as will be appreciated by those skilled in the art." '062 patent, 18:33-34. "The HDLC performs a checksum on the received packets." '062 patent, 18:41-42.
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages; and	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
wherein at least one of the plurality of transceivers further sends preformatted emergency messages.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it

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	is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
18. The system of claim 17, wherein the controller maintains periods of silence by not sending the preformatted command messages during predetermined time periods; and	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more of the additional references teaching this limitation.

	For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
wherein the at least one of the plurality of transceivers detects a period of silence and sends the preformatted emergency message during the period of silence.	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '773 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '773 patent with the teachings of one or more

	of the additional references teaching this limitation. For example, U.S. Patent No. 5,907,491 discloses that "[w]hile it is preferable to transmit a signal from the machine monitor 4 to the command station 6 only at scheduled times, it is contemplated that the machine monitor 4 could also incorporate means of continuously sensing an extreme fault condition of the machine being monitored, such as the use of tuned reed switches for detecting an extreme vibration condition. When such an extreme fault condition occurs, the monitor computer 418 "wakes up" from standby mode, processes the signal from its one or more sensors 408, and transmits a data packet consisting of the machine monitor's identification code and the sensor data to the command station 6. To avoid interference with regularly scheduled data messages, these fault messages are transmitted only during special tie intervals which are individually assigned to each machine monitor 4 specifically for the transmission of fault messages." '491 patent, 17:13-28. U.S. Patent No. 6,366,217, discloses that "[t]he information signal contains the data collected by the sensor interface module, or the emergency code." '217 patent, 13:66-14:1. U.S. Patent No. 5,874,903 discloses that CEBus protocol "preferably also has the capacity to allow the meter to report by exception for events such as security related activities and outage reporting." '903 patent, 3:47-50.
37. A method of communicating between geographically remote devices, the method comprising:	"A wireless network system in accordance with the present invention includes at least one server having a server controller

	and a server radio modem, and a plurality of clients, each including a client controller and a client radio modem." '062 patent, 5:8-11. "A method of providing wireless network communication in accordance with the present invention includes providing a server implementing a server process, and providing a plurality of clients, each client implementing a client process. The server process includes receiving data packets via a server radio modem, sending data packets via a server radio modem, performing a "gateway" function to another network, and performing housekeeping functions." '062: 5:25-32.
sending a message;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
receiving the message at one or more of the remote devices;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
processing the message;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary

	translations to the data packets." '620 patent 5:50-55.
preparing a response message;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
receiving the response message;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
processing the response message	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.
wherein all messages comprise at least one packet, the packet having a predetermined format;	"The digital controller passes data packets received from the first network that are destined for the second network, and passes data packets received from the second network that are destined for the first network to the first network, after performing any necessary translations to the data packets." '620 patent 5:50-55.

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wherein the predetermined format comprises:	
a receiver address comprising a scalable address of the at least one of the intended receiving remote devices;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
a sender address comprising an unique address of the sender;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.
a command indicator comprising a command code;	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a.

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	To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Kahn, Jubin, U.S. Patent No. 6,366,217 ("the '217 patent"), U.S. Patent No. 5,963,650 ("the '650 patent"), U.S. Patent No. 5,907,491 ("the '491 patent"), U.S. Patent No. 7,027,773 ("the '773 patent"), U.S. Patent No. 6,100,817 ("the '817 patent"), U.S. Patent No. 5,874,903 ("the '903 patent") or other references as cited below. For example, Kahn, which is also directed to the PRNET, discloses: "From the station, parameters in each PR and terminal device in the network can be set remotely, selected elements can be halted, if appropriate, the collection of statistical data from selected devices may be enabled, traffic sources may be turned on or off, and data collection may be initiated." Kahn, page 1495. Similarly, Jubin, which is also directed to the PRNET, discloses: "PRs can also be loaded and debugged from a remote host computer. All the commands available to a local operator are available to a remote operator." Jubin page 23. "A plethora of terminal commands – display memory, alter memory, select/display trace breakpoint, display state, execute jobs, execute procedure, etc.—are available for local debugging."

	Jubin page 23 U.S Patent No. 5,907,491 discloses: "Special requests for data sensing, data analysis, data transmission, and data storage can also be transmitted by the command station 6 to one or more monitors 4. Such special requests are additional to the data and functions provided by monitors 4 during normal status polling." '491 patent, 7:56-60. "During normal communications, the monitor 4 powers up once every 60 seconds. As data is acquired by the monitors 4, it is preferably stored in memory 422 for a period of time. When the monitor transmits an alarm message to the command station 6, the command station 6 may then command the monitor to transmit its most recently stored data. For example, the monitor 4 can be programmed (either at the factory before being shipped, by the ICU 9 during installation or reconfiguration, or through appropriate wireless commands transmitted by the command station 6 before, during, or after installation) to store spectral data for each vibration measurement obtained during the most recent week of measurement activity." U.S. Patent No. 5,963,650 discloses: "Another advantage of the intelligent RF transceiver in the preferred embodiment is that it is capable of peer-to-peer operation. For example, a user application can issue a command or query to one data acquisition device and that data acquisition device can then communicate directly with other data acquisition devices." '650 patent, 5:46-51.

	U.S. Patent No. 7,027,773 discloses: "The Data portion of a MinionNet network Standard Message with a Type Code meaning "Command" will contain information originating with the MinionNet network Control Center that causes certain operations to be performed by the Minion device and results to be sent back to the Control Center. This can be used to set operating modes or data throughout the MinionNet network." '773 patent; 22:13-19. U.S. Patent No. 6,100,817 discloses: "In the preferred embodiments of the invention, the CEBUS message packets provide fields for addressing individual meters and groups of meters, for performing multi level repeater functions, authentication/password control." '817 patent, 2:65-3:2. U.S. Patent No. 5,874,903 discloses: "Meter information in a node protocol packet includes meter ID, a repeat count, data and destination address, and error detection bits. The data/destination bits of the meter protocol are passed through to the CEBus network and include source and destination addresses, data, and error detection bits. In presently preferred embodiments of the invention, the pass through protocols for the system are table based. The tables are designed to allow data, functions, commands, schedules, etc., to be passed to the different system elements." '903, 4:23-31.

a scalable data value comprising a scalable message; and	"In FIG. 5a, a "data packet" 112 in accordance with the present invention is illustrated. … The data packet 112 of the present invention includes a header 114, a type 116, and data 118. The data 188 can be standard TCP/IP data. The header 114 includes the source address, the address of all hops along the way (i.e. the "link" of the data packet), and a destination address." '062 patent, 14:5-13. '062 patent, Figure 5a. To the extent that Plaintiffs contend that this claim limitation is not disclosed explicitly or inherently in the '062 patent, it would have been obvious to a person ordinary skill in the art to combine and/or modify the '062 patent with the teachings of one or more of the additional references teaching this limitation, for example, Jubin, and other references as cited below. For example, Jubin, which is also directed to the PRNET, teaches: *"A.Packet Headers* Every packet transmitted by every PR contains several headers, which add about 10 percent to the packet length. Each header corresponds to a protocol layer. Strict layering produces a clean, structured design, but also causes the headers to be longer than they could be because of duplication of some fields and fragmentation of other among the headers. The packet headers that are of concern to this paper are the end-to-end (ETE) header and the routing header. *ETE Header*: The ETE header is created by the source device. It contains the source device ID, which is use to update the PRs' stored device-PR correspondence data (Section III-C), and the destination device ID, which is used in forwarding (Section IV-

	B). … *Routing Header:* The routing header is created by the source PR, encapsulating the ETE header." Jubin page 25 (see Table for routing header fields). "The routing header stays on the packet throughout its forwarding through the PRNET subnet. The source PR ID, sequence number, and destination PR ID created by the source PR stay fixed throughout the packet's journey to the destination PR. The rest of the fields are updated by every intermediate packet radio." Jubin page 25-26. In addition, the following references disclose the use of scalable fields in radio packets: U.S. Patent No. 5,673,252 to Johnson: "FIG. 25 depicts the structure of a well-known standard data link packet, the HDLC frame format. Using this structure, flag fields demark the start and end of the packet, and implicitly define the length of the variable length information field. The source or destination address is specified in an expanding, in byte units, address field. An 8-bit, or 16-bit, if larger sequence numbers are desired, control field identifies the type of the packet, e.g., information, supervisory or unnumbered, and contains send and receive sequence numbers." '252 patent, 38:34-43. '252 patent, Figure 25. "The wide area communications network data ink layer uses three delivery mechanisms for messages on the RND link. The first,

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	broadcast to class address, is used for messages which are supposed to be received by all network service modules belonging to a particular class, usually based on network service module type. FIG. 31 illustrates an RND broadcast to class address data link packet structure. The second, broadcast to individual address, is used for messages intended for one individual network service module; the message is periodically transmitted and the network service module is expected to eventually hear the message. The third, reverse poll, is also used for messages intended for one individual network service module, but a message is not transmitted until the network service module sends a message explicitly requesting the reverse poll." '252 patent, 39:28-43. '252 patent, Figure 31. "For network service modules, broadcast addressing arises in several different circumstances, and is handled differently for each. Some information is intended for all network service modules, and is identified only by the slot/subchannel the information occupies; no address is specified. Some information is intended for only one network service module, and network service module type and address are required; alternatively, type ay be omitted if implied by subchannel. Finally, some information is intended only for a subset, or tier, of the network service modules of a particular type. In this case, all network service modules will recognize a tiered address have, in addition to their normal ID, a 24-bit tier address assigned to them. A tiered address, on a transmitted packet, includes two parts, the first is a 24-bit pattern and the second is a 24-bit mask selecting which of the pattern bits must match corresponding bits of a

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	network service module's assigned tier address for that network service module to be addressed." '252, 42:18-39. "FIG. 42 illustrates an RND broadcast to class network message format in the context of a data link packet. A complete message includes: optional address (nsmtyp-Data Link packet field), message (cofftend) type, application specific control subfield and an application message. The address may only be omitted, and "network message" field enlarged by 8 bits, if the delivery subchannel is dedicated to a single network service module type. Each application is responsible for any message sequencing performed. … Delivery to individually addressed network service modules is identical in principle to the broadcast to class address except the nmsadr portion of the data link address field must be present, resulting in a "network message" field which is 32 bits smaller. This message structure is used both for broadcast to individual address and for reverse poll delivery mechanisms. FIG. 43 illustrates an RND broadcast to individual address and reverse poll network message format in the context of a data link packet." '252 patent, 55:40-59. '252 patent, Figures 42 and 43. In addition, a number of Network Working Group, Request for Comment publications discuss the use of scalable fields in IP addressing: Network Working Group Request for Comments No. 1385, November 1992, Z. Wang, disclosing "The Internet faces two serious scaling problems: address exhaustion and routing

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	explosion." Wang discloses and Extended Internet Protocol that uses an EIP extension of variable length that holds the Source Network field and Destination Network field as an extension to addressing space. Network Working Group Request for Comments No. 986, June 1986, R. Callon & H. Braun, disclosing variable size address fields. Network Working Group Request for Comments No. 1365, September 1992, K. Siyan, disclosing "shortage of network numbers that can be assigned" for IP addressing and proposal for extending addressing fields.
an error detector that is a redundancy check error detector; and	"The devices 272 and 276 are used for error correction and noise cancellation, as will be appreciated by those skilled in the art." '062 patent, 18:33-34. "The HDLC performs a checksum on the received packets." '062 patent, 18:41-42.
wherein the steps of sending and receiving are repeated until the message is received by the intended receiver.	"In FIG. 5, the process "Process Packets Received from Clients" 74 of FIG. 4 is illustrated in greater detail. … If so, or after the updating of the tree in step 90, a decision step 92 determines whether the packet being received by the server was intended for that server. If not, a decision step 94 determines whether that server is on the route. If that server is on the route, but it is not its packet, a decision step 96 determined whether the packet has already been repeated. If not, the packet is placed in the client transmit buffer." '062, 13:27-43. '620 patent, Figure 5.

Exhibit P13 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent 5,673,252 and U.S. Patent 6,100,817

The '492 Patent – Claim	U.S. Patent 5,673,252 and U.S. Patent 6,100,817
1. In a communication system to communicate command and sensed data between remote devices, the system comprising:	Johnson discloses a system in which a wide area communications network collects network service module (NSM) data generated by a plurality of physical devices within a geographical area. Ex. 1002 at 9:47-51. The wide area communications network, depicted in Fig. 1 (reproduced below), includes a plurality of network service modules 110, a plurality of remote cell nodes 112, a plurality of intermediate data terminals 114, and a central data terminal 120. *Id*. at 9:51-56, Fig. 1. The physical devices may be, for example, a utility meter for electricity, gas, or water. *Id*. at 9:57-58. The network supports functions including basic meter reading, time of use meter reading, service connect and disconnect operations, alarm reporting, theft of service reporting, load research, residential load control, commercial and industrial load curtailment and distributed supervisory control and data acquisition (SCADA). *Id*. at 14: 50-56. Johnson's remote cell nodes (RCN) 112 and network service modules (NSM) 110 are examples of the claimed "remote devices." NSM data generated by physical devices in the network corresponds to the claimed "sensed data" and can be sent from an NSM 110 to an RCN 112 in response to a request from the RCN 112. *Id*. at 10:62-11:10, 11:17-20, 11:46-52, 20:40-49. The request from the RCN 112 is an example of the claimed "command" data that is communicated between remote devices. In addition, an RCN 112 can send other commands to an NSM 110. For example, an RCN 112 can forward a command to cutoff the power to a specific NSM 110. *Id*. at 20:49-53. In addition, an

	RCN 112 can transmit control signals (which correspond to the claimed "command" data) for operating equipment within the premises in which a NSM 110 is located. *Id*. at 20:54-65.
a receiver address comprising a scalable address of at least one remote device;	Johnson discloses the use of a data link packet structure that includes a source or destination address that is specified in an expanding address field. Ex. 1002 at 38:38-39. When the address is a destination address, it corresponds to the claimed "receiver address comprising a scalable address." For example, a link called the RND link is used to deliver commands and operating tables from remote cell nodes to network service modules. *Id*. at 29:24-25, 39:20-21. Delivery mechanisms of varying destination address sizes can be used for messages on the RND link. One addressing scheme, broadcast to class address, is used for messages to be received by NSMs belonging to a particular class. *Id*. at 39:30-34, 42:18-26, 55:40-47. FIG. 31 shows an example of this first delivery mechanism where the destination address (NSMTYPE) is depicted as being 8 or 0 bits. *Id*. at FIG. 31; *see also* FIG. 42. A second addressing scheme, broadcast to individual address, is used for messages intended for one individual NSM. *Id*. at 39:35-40, 42:26-29, 55:49-59. FIG. 32 shows an example of a packet structure used in this second mechanism. *Id*. at FIG. 32; *see also* FIG. 43. Notably, the destination address shown for the second mechanism is depicted as 40 or 32 bits (40 bits if NSMTYPE and NSMADR are both used, 32 bits if only NSMADR is used). *Id*. at FIG. 32. In yet another addressing scheme, tiered addressing can be

	used when certain information is intended for only a particular subset/tier of the NSMs of a particular type. *Id*. at 42:29-34. In this case, in addition to their normal identification, NSMs that recognize a tiered address have a 24-bit tier address assigned to them. *Id*. These different addressing schemes demonstrate that packets in Johnson's system can include a destination (receiver) address that comprises an address that has a variable size based on the size and complexity of the system. In a very simple system, for example, if there is only one type of NSM, there is no need to use an NSMTYPE as part of the destination address. Instead, an NSM can be targeted by using only NSMADR as the destination address. If the system is larger and/or more complex and includes multiple types of NSMs, the system can use a combination of an NSMTYPE and NSMADR as the destination address, which is larger than just a NSMADR by itself. Moreover, in an even more complicated system, Johnson can utilize an additional 24-bit tier address to address only a particular tier of the NSMs of a particular type. The scalable address of Johnson is also a scalable address "of at least one remote device." As noted above, the NSMs disclosed in Johnson each qualify as a claimed "remote device." Because the scalable address of Johnson comprises one or more of information used to identify the type of the destination NSM (NSMTYPE), the individual address of the destination NSM (NSMADR), and an additional 24-bit tier address specifying a tier of NSMs of a particular type, Johnson discloses that its scalable address is a scalable address "of at least one remote device."

	The scalable addressing used by Johnson is similar to that described by the '492 patent. The '492 patent, for example, discloses that: The "to" address 700 can indicate the intended recipient of the packet. This address can be scalable from one to six bytes based upon the size and complexity of the system. By way of example, the "to" address 700 can indicate a general message to all transceivers, to only the stand-alone transceivers, or to an individual integrated transceiver. In a six byte "to" address, the first byte indicates the transceiver type to all transceivers, to some transceivers, or a specific transceiver. The second byte can be the identification base, and bytes three through six can be used for the unique transceiver address (either stand-alone or integrated). Ex. 1001 at 9:59-10:2. From this description, it is clear that Johnson's scalable addressing scheme is similar. Both the '492 patent and Johnson disclose that one byte in the scalable address can indicate the destination "type." And both the '492 patent and Johnson disclose that a number of additional bytes can be used to more specifically identify the destination. Accordingly, Johnson discloses "a receiver address comprising a scalable address of at least one remote device," as claimed. Alternatively, if Johnson does not disclose a receiver address comprising a scalable address (claims 1 and 14), a data value comprising a scalable message (claims 1, 8, and

	14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10), X.233 discloses those features. For example, X.233 discloses a protocol that may be used for communication between network entities. X.233 at 1. The protocol uses protocol data units (PDUs) that include a destination address and data field that are each variable in length. *Id*. at 21, 29. Figure 9 in X.233 (reproduced below) demonstrates the variable length destination address and data field. *Id*. at p. 29. For the destination address, a destination address length indicator field specifies the length of the destination address in octets. *Id*. at p. 21. The destination address follows and has a size dependent on the value of this length indicator field. *Id*. Similarly, the data part of the PDU disclosed in X.233 is shown to have a variable size as evidenced by the use of the variables "p+1" and "z" to identify the start and end of the data (as compared to the definite sizes assigned to several fields in the X.233 PDU, such as "Network Layer Protocol Identifier," "Segment Length," and "Checksum." *Id*. at 29. Accordingly, the destination address of the X.233 PDU corresponds to a receiver address comprising a scalable address (claims 1 and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10). And the data part of the X.233 PDU corresponds to a data value comprising a scalable message (claims 1, 8, and 14) and/or a

	preformatted message having at least one scalable field (claim 2). A POSITA would have been motivated to use the scalable fields (including receiver address and message) of X.233 in Johnson's system. The '492 patent uses scalable addresses in order to accommodate systems of different sizes and complexity. Ex. 1001 at 9:59-61. The scalable addresses of X.233 have the same effect. {CITE to expert}. Johnson also recognizes that the identification of nodes as the number of end points increases is an issue of concern. Ex. 1002 at 26:40-45. To the extent that the Board does not believe that Johnson discloses scalable addresses, using the scalable addresses of X.233 in Johnson's system would allow a POSITA to effectively address Johnson's stated issue of identifying nodes in networks with increasing sizes and complexity. Johnson's concern for this issue is underscored by Johnson's disclosure of the use of a destination address that "is specified in an expanding, in byte units, address field." *Id*. at 38: 38-39. Regarding scalable messages, the '492 patent recognizes that different commands may require different amounts of data. Ex. 1001 at 10:37-38. Further to that recognition, the '492 patent allows a message to be broken up into multiple packets. *Id*. at 10:41-46. Similarly, the use of scalable messages in X.233 shows that X.233 appreciates that different commands may require different amounts of data. And similar to the '492 patent, X.233 allows a message to be broken up into multiple packets. X.233 at 9. Johnson also takes note of the issue of breaking messages up into multiple

	packets and demonstrates the ability to use a variable length information field. Ex. 1002 at 35:56-60, 38:33-38. To the extent that the Board does not believe that Johnson discloses scalable messages, using the scalable messages of X.233 in Johnson's system would provide a POSITA a way to help implement the breaking of messages into multiple packets noted by Johnson. Moreover, a POSITA would appreciate that Johnson and X.233 both disclose connectionless protocols. Ex. 1002 at 35:45-48, 40:63-65; X.233 at 1. A POSITA would also appreciate that the protocol of X.233 could be used in a wireless network, such as disclosed by Johnson, even though X.233 is silent as to whether its protocol can be used in a wireless network. For example, Perkins (which is directed to a system and method for routing information between mobile hosts) discloses that it was known prior to the earliest priority date of the '492 patent to use the ISO 8473 protocol, known as CLNP, in a wireless system. Perkins at 4:22-35. X.233 notes that its protocol is known as CLNP (Connectionless-mode Network Protocol) and that "[t]he identical text is also published as ISO/IEC International Standard 8473-1." X.233 at 1, 4. Accordingly, bolstered by the suggestion of Perkins, a POSITA would be motivated to combine Johnson and X.233 with a reasonable expectation of success in doing so.
a command indicator comprising command code;	Johnson discloses that "[a]n RND message contains an network service module application layer command and is encapsulated in a data link packet." Ex. 1002 at 55:32-34. The "[s]ubfields of the control field exist for application message (command) type, and

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	for application specific use, such as sequence numbering, which is not used for ARQ." *Id*. at 55:34-36. This disclosure demonstrates that the message type information included in the control field is a "command indicator comprising a command code." FIG. 37 further demonstrates that the message type of Johnson corresponds to the claimed command indicator, noting that the message type is a code indicating the format and content of the rest of the message and may be considered a command opcode. *Id*. at FIG. 37.
a data value comprising a scalable message; and	Johnson discloses the use of a data link packet structure that includes a "variable length information field." Ex. 1002 at 38:35-38. This variable length information field corresponds to the claimed "data value comprising a scalable message." The specific example of an RND message provides additional details. In an RND broadcast to class network message data link packet, the size of the network message field may be enlarged by 8 bits if an optional address is omitted from the packet. *Id*. at 39:30-34, 55:44-47. In the case of an RND message to be delivered to an individually addressed NSM, the message field is 32 bits smaller due to the presence of a 32-bit NSMADR. *Id*. at 39:35-38, 55:51-55. Here, the size of the message field also varies depending on whether an 8-bit NSMTYPE field is present. FIGS. 31 and 32 are illustrative.
a controller associated with a remote device comprising a transceiver configured to send and receive wireless signals, the remote device configured to send a preformatted message comprising the receiver address, a command indicator, and the data value via the transceiver to at least one other remote device.	An RCN 112 shown in Johnson corresponds to the remote device associated with the claimed controller. Each RCN 112 includes, among other things, an RCN processor 414, an RCN transmitter 418, and an RCN receiver 416. Ex. 1002 at 18:3-13, FIG. 9. The RCN processor 414 corresponds to the claimed "controller associated with a remote device," because RCN

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	processor 414 is part of RCN 112, which is the claimed "remote device." RCN transmitter 418 and RCN receiver 416 together correspond to the claimed "transceiver," because they are configured to send and receive wireless signals. *Id*. at 18:14-46. Moreover, Johnson refers to the transmitter/receiver pairs of network nodes (of which, per FIG. 35, NSMs 110 and RCNs 112 are examples) as "transceivers." *Id*. at 31:39-41. An RCN 112 can be used to deliver RND messages to NSMs. *Id*. at 39:20-46. One of these RND messages corresponds to the claimed "preformatted message" and comprises a receiver address comprising a scalable address, a command indicator comprising a command code, and a data value comprising a scalable message. Johnson discloses that the RCN transmitter 418 in a given RCN 112 sends the preformatted RND message to an NSM 110. *Id*. at 10:36-56, 18:23-29, 39:20-43, 55:30-59. The NSM 110 that receives an RND message from an RCN transmitter 418 corresponds to the claimed "at least one other remote device." Alternatively, if Johnson does not disclose a receiver address comprising a scalable address (claims 1 and 14), a data value comprising a scalable message (claims 1, 8, and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10), X.233 discloses those features. For example, X.233 discloses a protocol that may be used for communication between network entities. X.233 at 1. The protocol uses protocol data units (PDUs) that include a

	destination address and data field that are each variable in length. *Id*. at 21, 29. Figure 9 in X.233 (reproduced below) demonstrates the variable length destination address and data field. *Id*. at p. 29. For the destination address, a destination address length indicator field specifies the length of the destination address in octets. *Id*. at p. 21. The destination address follows and has a size dependent on the value of this length indicator field. *Id*. Similarly, the data part of the PDU disclosed in X.233 is shown to have a variable size as evidenced by the use of the variables "p+1" and "z" to identify the start and end of the data (as compared to the definite sizes assigned to several fields in the X.233 PDU, such as "Network Layer Protocol Identifier," "Segment Length," and "Checksum." *Id*. at 29. Accordingly, the destination address of the X.233 PDU corresponds to a receiver address comprising a scalable address (claims 1 and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10). And the data part of the X.233 PDU corresponds to a data value comprising a scalable message (claims 1, 8, and 14) and/or a preformatted message having at least one scalable field (claim 2). A POSITA would have been motivated to use the scalable fields (including receiver address and message) of X.233 in Johnson's system. The '492 patent uses scalable addresses in order to accommodate systems of different sizes and complexity. Ex. 1001 at 9:59-61. The scalable addresses

	of X.233 have the same effect. {CITE to expert}. Johnson also recognizes that the identification of nodes as the number of end points increases is an issue of concern. Ex. 1002 at 26:40-45. To the extent that the Board does not believe that Johnson discloses scalable addresses, using the scalable addresses of X.233 in Johnson's system would allow a POSITA to effectively address Johnson's stated issue of identifying nodes in networks with increasing sizes and complexity. Johnson's concern for this issue is underscored by Johnson's disclosure of the use of a destination address that "is specified in an expanding, in byte units, address field." *Id*. at 38: 38-39. Regarding scalable messages, the '492 patent recognizes that different commands may require different amounts of data. Ex. 1001 at 10:37-38. Further to that recognition, the '492 patent allows a message to be broken up into multiple packets. *Id*. at 10:41-46. Similarly, the use of scalable messages in X.233 shows that X.233 appreciates that different commands may require different amounts of data. And similar to the '492 patent, X.233 allows a message to be broken up into multiple packets. X.233 at 9. Johnson also takes note of the issue of breaking messages up into multiple packets and demonstrates the ability to use a variable length information field. Ex. 1002 at 35:56-60, 38:33-38. To the extent that the Board does not believe that Johnson discloses scalable messages, using the scalable messages of X.233 in Johnson's system would provide a POSITA a way to help implement the breaking of messages into multiple packets noted by Johnson.

	Moreover, a POSITA would appreciate that Johnson and X.233 both disclose connectionless protocols. Ex. 1002 at 35:45-48, 40:63-65; X.233 at 1. A POSITA would also appreciate that the protocol of X.233 could be used in a wireless network, such as disclosed by Johnson, even though X.233 is silent as to whether its protocol can be used in a wireless network. For example, Perkins (which is directed to a system and method for routing information between mobile hosts) discloses that it was known prior to the earliest priority date of the '492 patent to use the ISO 8473 protocol, known as CLNP, in a wireless system. Perkins at 4:22-35. X.233 notes that its protocol is known as CLNP (Connectionless-mode Network Protocol) and that "[t]he identical text is also published as ISO/IEC International Standard 8473-1." X.233 at 1, 4. Accordingly, bolstered by the suggestion of Perkins, a POSITA would be motivated to combine Johnson and X.233 with a reasonable expectation of success in doing so.
2. The system of claim 1, further comprising:	The above contentions for claim 1 are hereby incorporated by reference.

a plurality of transceivers each having a unique address, the transceiver being one of the plurality of transceivers;	Each RCN 112 has an RCN transmitter 418 and an RCN receiver 416. Ex. 1002 at 18:3-13, FIG. 9. And each NSM 110 can have an NSM transmitter 318 and an NSM receiver 316. *Id*. at 10:24-40, 11:26-45. Each RCN transmitter/receiver pair and each NSM transmitter/receiver pair are transceivers, because each pair sends and receives wireless signals. *Id*. at 10:36-43, 11:26-30, 18:14-46. Moreover, Johnson refers to the transmitter/receiver pairs of network nodes (of which, per FIG. 35, NSMs 110 and RCNs 112 are examples) as "transceivers." *Id*. at 31:39-41. Johnson discloses that network nodes have unique network addresses. *Id*. at 41:29-33, 40-46. Johnson also discloses that RCNs 112 and NSMs 110 are examples of the network nodes that have unique network address (see FIG. 35, which is described as summarizing the address space for each node type and which includes NSMs and RCNs as node types). Johnson also teaches the claimed "the transceiver being one of the plurality of transceivers." Specifically, as explained above in the analysis for claim element [1e], the RCN transmitter/receiver combination corresponds to the claimed "the transceiver." And each RCN transmitter/receiver pair and each NSM transmitter/receiver pair is one of the "plurality of transceivers" with "a unique address." *Id*. at 10:36-43, 11:26-30, 18:14-46, 41:29-33, 41:40-46.
a plurality of controllers associated with each the controller associated with at least one of the transceivers, the controller being in communication with at least one other transceiver with a preformatted message, the preformatted message having at least one scalable field;	Johnson discloses that each RCN 112 includes an RCN processor 414. Ex. 1002 at 18:3-13. These RCN processors 414 correspond to the claimed "plurality of controllers." Each RCN processor 414 has a corresponding RCN transmitter/receiver pair and thus is "associated with at least one of the transceivers." *Id*. at 18:3-40. Moreover, each RCN processor 414 can communicate

	with a NSM transmitter/receiver pair via the RCN processor's corresponding RCN transmitter/receiver pair. *Id*. at 10:36-40, 18:14-55, 19:30-38. Accordingly, Johnson's RCN processors 414 correspond to the claimed "the controller being in communication with at least one other transceiver." RCN processor 414 uses a preformatted message to communicate with the NSM's transceiver. Johnson discloses that RCN processor 414 controls the RCN transmitter 418. Ex. 2002 at 18:50-51. Using RCN transmitter 418, an RCN 112 can send an RND message to an NSM 110. An RND message is a preformatted message that has at least one scalable field. For example, an RND message includes a scalable address and a scalable message. *Id*. at 10:36-56, 18:23-29, 39:20-43, 55:30-59. Thus, Johnson discloses that RCN processor 414, like the claimed "controller," is "in communication with at least one other transceiver with a preformatted message, the preformatted message having at least one scalable field." Alternatively, if Johnson does not disclose a receiver address comprising a scalable address (claims 1 and 14), a data value comprising a scalable message (claims 1, 8, and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10), X.233 discloses those features. For example, X.233 discloses a protocol that may be used for communication between network entities. X.233 at 1. The protocol uses protocol data units (PDUs) that include a destination address and data field that are each variable in

	length. *Id*. at 21, 29. Figure 9 in X.233 (reproduced below) demonstrates the variable length destination address and data field. *Id*. at p. 29. For the destination address, a destination address length indicator field specifies the length of the destination address in octets. *Id*. at p. 21. The destination address follows and has a size dependent on the value of this length indicator field. *Id*. Similarly, the data part of the PDU disclosed in X.233 is shown to have a variable size as evidenced by the use of the variables "p+1" and "z" to identify the start and end of the data (as compared to the definite sizes assigned to several fields in the X.233 PDU, such as "Network Layer Protocol Identifier," "Segment Length," and "Checksum." *Id*. at 29. Accordingly, the destination address of the X.233 PDU corresponds to a receiver address comprising a scalable address (claims 1 and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10). And the data part of the X.233 PDU corresponds to a data value comprising a scalable message (claims 1, 8, and 14) and/or a preformatted message having at least one scalable field (claim 2). A POSITA would have been motivated to use the scalable fields (including receiver address and message) of X.233 in Johnson's system. The '492 patent uses scalable addresses in order to accommodate systems of different sizes and complexity. Ex. 1001 at 9:59-61. The scalable addresses of X.233 have the same effect. {CITE to expert}. Johnson also

	recognizes that the identification of nodes as the number of end points increases is an issue of concern. Ex. 1002 at 26:40-45. To the extent that the Board does not believe that Johnson discloses scalable addresses, using the scalable addresses of X.233 in Johnson's system would allow a POSITA to effectively address Johnson's stated issue of identifying nodes in networks with increasing sizes and complexity. Johnson's concern for this issue is underscored by Johnson's disclosure of the use of a destination address that "is specified in an expanding, in byte units, address field." *Id*. at 38: 38-39. Regarding scalable messages, the '492 patent recognizes that different commands may require different amounts of data. Ex. 1001 at 10:37-38. Further to that recognition, the '492 patent allows a message to be broken up into multiple packets. *Id*. at 10:41-46. Similarly, the use of scalable messages in X.233 shows that X.233 appreciates that different commands may require different amounts of data. And similar to the '492 patent, X.233 allows a message to be broken up into multiple packets. X.233 at 9. Johnson also takes note of the issue of breaking messages up into multiple packets and demonstrates the ability to use a variable length information field. Ex. 1002 at 35:56-60, 38:33-38. To the extent that the Board does not believe that Johnson discloses scalable messages, using the scalable messages of X.233 in Johnson's system would provide a POSITA a way to help implement the breaking of messages into multiple packets noted by Johnson. Moreover, a POSITA would appreciate that Johnson and X.233

	both disclose connectionless protocols. Ex. 1002 at 35:45-48, 40:63-65; X.233 at 1. A POSITA would also appreciate that the protocol of X.233 could be used in a wireless network, such as disclosed by Johnson, even though X.233 is silent as to whether its protocol can be used in a wireless network. For example, Perkins (which is directed to a system and method for routing information between mobile hosts) discloses that it was known prior to the earliest priority date of the '492 patent to use the ISO 8473 protocol, known as CLNP, in a wireless system. Perkins at 4:22-35. X.233 notes that its protocol is known as CLNP (Connectionless-mode Network Protocol) and that "[t]he identical text is also published as ISO/IEC International Standard 8473-1." X.233 at 1, 4. Accordingly, bolstered by the suggestion of Perkins, a POSITA would be motivated to combine Johnson and X.233 with a reasonable expectation of success in doing so.
at least one sensor associated with at least one of the transceivers to detect a condition and output a data signal to the transceiver; and	Johnson discloses that each NSM 110 includes sensors 320 and 322. Ex. 1002 at 10:24-35, FIG. 2. These sensors are associated with the transmitter/receiver pair for the NSM 110, because they are all part of the NSM 110 and because a given transmitter/receiver pair is responsible for sending data from the sensors to an RCN 112. *Id*. at 10:24-35, 10:62-11:33, FIG. 2. The sensors can detect conditions such as meter information, time of use, and other information or status. *Id*. at 10:62-11:20, 14:37-16:21. The sensors are also operable to output NSM data to that ultimately is transmitted using the NSM transmitter 318. *Id*. at 10:62-11:33. This NSM data corresponds to the claimed "data signal" that is output to the claimed "transceiver."
at least one actuator associated with at least one of the	Johnson discloses that loads can be controlled by sending

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transceivers to activate a device.	appropriate commands to an NSM 110 from an RCN 112. Ex. 1002 at 10:53-56, 14:50-56, 20:40-65. FIG. 4 in Johnson is an illustrative listing of applications supported by the NSMs. *Id*. at 13:60-62. Several load control functions (e.g., for air conditioners, water heaters, and pool pumps/heaters) are included as part of that list. *Id*. at FIG. 4. The load control functions disclosed by Johnson evidence the existence of actuators that activate a device. Moreover, each actuator is associated with at least one the claimed transceivers. As noted above, loads are controlled by sending appropriate commands to an NSM 110 from an RCN 112. In order to do so, the RCN 112 sends commands from its RCN transmitter 418 to the NSM receiver 316 in the corresponding NSM 110. *Id*. at 10:36-56, 14:50-56, 18:14-29, 20:40-65. The actuators that implement the load control functions for a given NSM 110 are thus associated with the NSM receiver 316 for that NSM 110. Accordingly, Johnson's NMS 110 include "at least one actuator associated with at least one of the transceivers to activate a device," as claimed.
3. The system of claim 1, wherein the controller sends the preformatted message via an associated transceiver, and at least one transceiver sends the preformatted response message.	The above contentions for claim 1 are hereby incorporated by reference. As noted above, RCN processor 414 corresponds to the claimed "controller" of claim 1. In addition, RCN transmitter 418 and RCN receiver 416 together correspond to "an associated transceiver," because they are configured to send and receive wireless signals, and because RCN processor 414, RCN

	transmitter 418, and RCN receiver 416 are all part of the same RCN 112. Ex. 1002 at 18:14-46, FIG. 9. RCN processor 414 sends a preformatted message to an NSM's transceiver via the RCN's transceiver. Specifically, Johnson discloses that RCN processor 414 controls the RCN transmitter 418. Ex. 2002 at 18:50-51. Using RCN transmitter 419, an RCN 112 can send an RND message to an NSM 110. *Id*. at 10:36-56, 18:23-29, 39:20-46, 55:30-59. One of these RND messages corresponds to the claimed "preformatted message" and comprises a receiver address comprising a scalable address, a command indicator comprising a command code, and a data value comprising a scalable message, as explained in more detail above in the analyses of claim elements [1b], [1c], and [1d]. An NSM 110 that receives an RND message from an RCN 112 can include an NSM transmitter 318 and an NSM receiver 316. *Id*. at 10:24-40, 11:26-45. The NSM transmitter/receiver pair is a transceiver, because the pair sends and receives wireless signals. *Id*. at 10:36-43, 11:26-30. In response to receiving a preformatted message from an RCN 112, the NSM transmitter 318 can send a preformatted response message. For example, an NSM transmitter 318 can transmit information, using radio waves, to an RCN 112 in response to a command signal received from the RCN 112. *Id*. at 4:2-10, 11:40-45, 11:49-52. The responsive information sent by NSM transmitter 318 is referred to in Johnson as an NSM-packet signal. *Id*. at 11:27-30, 11:40-42. The NSM-packet signals are message packets that "follow a generic or fixed format." *Id*. at 11:33-36. Accordingly,

	the NSM-packet signal qualifies as the claimed "preformatted response message."
4. The system of claim 1, wherein at least one transceiver receives the preformatted message requesting sensed data, confirms the receiver address as its own unique address, receives a sensed data signal, formats the sensed data signal into scalable byte segments, determines the number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 1 are hereby incorporated by reference. As detailed above, the transmitter/receiver pair in NSM 110 is a transceiver. Johnson discloses that this transceiver can receive a command from an RCN 112 requesting, for example, an immediate meter reading or other sensed data. *Id*. at 4:2-10, 10:36-61, 20:40-49. A message which contains a command from an RCN 112 to an NSM 110 qualifies as a "preformatted message" as detailed above. Accordingly, Johnson discloses that "at least one transceiver receives the preformatted message requesting sensed data." The NSM 110 (and hence, its transceiver) determines whether any messages it hears are for it. *Id*. at 45:11-14. This determination is made by confirming whether the destination address in the message from an RCN 112 matches the address of the NSM that hears the message. *Id*. at 35:65-66, 39:28-38, 42:23-43, 45:11-14. Moreover, as detailed above, each NSM 110 (and hence, its transceiver) has a unique address. Accordingly, Johnson "confirms the receiver address as its own unique address." The NSM 110 receives NSM data from a physical device. *Id*. at 10:62-11:10. The NSM data, which corresponds to the claimed "sensed data," is ultimately received by the

	NSM transceiver, so that it can be used as part of a message packet that is generated and transmitted by the NSM transceiver. *Id*. at 11:26-39. An exemplary message packet that is generated and transmitted may follow the format depicted in FIG. 3. Even more specifically, the generated and transmitted message may be known as an NRR message and can follow the format depicted in FIG. 29 and/or described at col. 54, line 52 – col. 55, line 20. The message is thus preformatted. Accordingly, Johnson "receives a sensed data signal," and "generates and transmits the preformatted response message comprising at least one packet."[1] Johnson also discloses that messages from an NSM (which, as noted above, send sensed data signals to remote cell nodes) can be "explicitly numbered if broken up into multiple packets." *Id*. at 35:56-60. But Johnson does not explicitly disclose formatting the sensed data signal into scalable byte segments and determining the number of segments required to contain the sensed data signal. X.233 discloses a segmentation function that can be utilized when

[1] Claim 4 refers to "the preformatted response message," but there is no antecedent basis for this message. As a result, there is no clarity on what comprises a "preformatted response message," other than it must be preformatted and must be a response. For purposes of this analysis, "the preformatted response message" has been interpreted as "a preformatted response message."

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	the length of a PDU is greater than the maximum supported size. X.233 at 9. The segmentation function divides and apportions data among data fields of multiple PDUs. *Id*. A POSITA would appreciate that, as noted by X.233 and the '492 patent, sometimes the size of requested data exceeds the space allotted for that data in a message. Ex. 1001 at 10:41-46; X.233 at 9. A POSITA would also appreciate that Johnson recognizes the desirability of breaking messages with sensed data into multiple packets (as evidenced by the teaching in Johnson at col. 35, lines 56-60) and be motivated to use the X.233 segmentation function in Johnson so that the combined teachings would format the sensed data signal into scalable byte segments and determine the number of segments required to contain the sensed data signal, as claimed. Moreover, a POSITA would appreciate that Johnson and X.233 both disclose connectionless protocols. Ex. 1002 at 35:45-48, 40:63-65; X.233 at 1. A POSITA would also appreciate that the protocol of X.233 could be used in a wireless network, as taught by Perkins and explained above in the obviousness analysis for claim 1. Accordingly, bolstered by the suggestion of Perkins, a POSITA would be motivated to combine Johnson and X.233, with a reasonable expectation of success in doing so.
6. The system of claim 1, wherein each remote device is adapted to transmit and receive radio frequency transmissions to and from	The above contentions for claim 1 are hereby incorporated by

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at least one other transceiver.	reference. As noted above, RCNs 112 and NSMs 110 are examples of the claimed "remote devices." RCNs 112 each include an RCN transmitter 418 and an RCN receiver 416. Ex. 1002 at 18:3-13, FIG. 9. And each NSM 110 can have an NSM transmitter 318 and an NSM receiver 316. *Id*. at 10:24-40, 11:26-45. Each RCN transmitter 418 and RCN receiver 416 can transmit and receive radio frequency transmissions to and from at least one other transmitter/receiver pair (transceiver) located at an NSM 110. *Id*. at 10:36-43, 11:26-30, 18:14-46. And each NSM transmitter 318 and NSM receiver 316 can transmit and receive radio frequency transmissions to and from at least one other transmitter/receiver pair (transceiver) located at an RCN112. *Id*. at 10:36-43, 11:26-30, 18:14-46.
8. A method of communicating command and sensed data between remote wireless devices, the method comprising:	Johnson's remote cell nodes (RCN) 112 and network service modules (NSM) 110 are examples of the claimed "remote wireless devices." Ex. 1002 at 9:47-58, 10:10-23, 18: 53-18:46. NSM data generated by physical devices in the network corresponds to the claimed "sensed data" and can be sent from an NSM 110 to an RCN 112 in response to a request from the RCN 112. *Id*. at 10:62-11:10, 11:17-20, 11:46-52, 20:40-49. The request from the RCN 112 is an example of the claimed "command" data that is communicated between remote devices. In addition, an RCN 112 can send other commands to an NSM 110. For example, an RCN 112 can forward a command to cutoff the power to a specific NSM 110. *Id*. at 20:49-53. In addition, an RCN 112 can transmit control signals (which correspond to the

	claimed "command" data) for operating equipment within the premises in which a NSM 110 is located. *Id*. at 20:54-65.
providing a receiver to receive at least one message;	An NSM 110 can have an NSM receiver 316. Ex. 1002 at 10:24-40. An NSM receiver 316 is operable to receive messages from an RCN 112. *Id*. at 10:36-40, 39:20-46.
wherein the message has a packet comprising a command indicator comprising a command code, a scalable data value comprising a scalable message, and an error detector that is a redundancy check error detector; and	As explained above, an RND message (which is a message received by an NSM receiver 316 and thus qualifies as a "message") has a packet that includes a command indicator comprising a command code and a scalable data value comprising a scalable message. In addition, Johnson discloses that an RND message includes a 16-bit CRC check field. Ex. 1002 at 39:11-15. "CRC" is an acronym for cyclic redundancy check and qualifies as "a redundancy check error detector," as required by the claim. Alternatively, if Johnson does not disclose a receiver address comprising a scalable address (claims 1 and 14), a data value comprising a scalable message (claims 1, 8, and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10), X.233 discloses those features. For example, X.233 discloses a protocol that may be used for communication between network entities. X.233 at 1. The protocol uses protocol data units (PDUs) that include a destination address and data field that are each variable in length. *Id*. at 21, 29. Figure 9 in X.233 (reproduced below)

	demonstrates the variable length destination address and data field. *Id*. at p. 29. For the destination address, a destination address length indicator field specifies the length of the destination address in octets. *Id*. at p. 21. The destination address follows and has a size dependent on the value of this length indicator field. *Id*. Similarly, the data part of the PDU disclosed in X.233 is shown to have a variable size as evidenced by the use of the variables "p+1" and "z" to identify the start and end of the data (as compared to the definite sizes assigned to several fields in the X.233 PDU, such as "Network Layer Protocol Identifier," "Segment Length," and "Checksum." *Id*. at 29. Accordingly, the destination address of the X.233 PDU corresponds to a receiver address comprising a scalable address (claims 1 and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10). And the data part of the X.233 PDU corresponds to a data value comprising a scalable message (claims 1, 8, and 14) and/or a preformatted message having at least one scalable field (claim 2). A POSITA would have been motivated to use the scalable fields (including receiver address and message) of X.233 in Johnson's system. The '492 patent uses scalable addresses in order to accommodate systems of different sizes and complexity. Ex. 1001 at 9:59-61. The scalable addresses of X.233 have the same effect. {CITE to expert}. Johnson also recognizes that the identification of nodes as the number of

	end points increases is an issue of concern. Ex. 1002 at 26:40-45. To the extent that the Board does not believe that Johnson discloses scalable addresses, using the scalable addresses of X.233 in Johnson's system would allow a POSITA to effectively address Johnson's stated issue of identifying nodes in networks with increasing sizes and complexity. Johnson's concern for this issue is underscored by Johnson's disclosure of the use of a destination address that "is specified in an expanding, in byte units, address field." *Id*. at 38: 38-39. Regarding scalable messages, the '492 patent recognizes that different commands may require different amounts of data. Ex. 1001 at 10:37-38. Further to that recognition, the '492 patent allows a message to be broken up into multiple packets. *Id*. at 10:41-46. Similarly, the use of scalable messages in X.233 shows that X.233 appreciates that different commands may require different amounts of data. And similar to the '492 patent, X.233 allows a message to be broken up into multiple packets. X.233 at 9. Johnson also takes note of the issue of breaking messages up into multiple packets and demonstrates the ability to use a variable length information field. Ex. 1002 at 35:56-60, 38:33-38. To the extent that the Board does not believe that Johnson discloses scalable messages, using the scalable messages of X.233 in Johnson's system would provide a POSITA a way to help implement the breaking of messages into multiple packets noted by Johnson. Moreover, a POSITA would appreciate that Johnson and X.233 both disclose connectionless protocols. Ex. 1002 at 35:45-48,

	40:63-65; X.233 at 1. A POSITA would also appreciate that the protocol of X.233 could be used in a wireless network, such as disclosed by Johnson, even though X.233 is silent as to whether its protocol can be used in a wireless network. For example, Perkins (which is directed to a system and method for routing information between mobile hosts) discloses that it was known prior to the earliest priority date of the '492 patent to use the ISO 8473 protocol, known as CLNP, in a wireless system. Perkins at 4:22-35. X.233 notes that its protocol is known as CLNP (Connectionless-mode Network Protocol) and that "[t]he identical text is also published as ISO/IEC International Standard 8473-1." X.233 at 1, 4. Accordingly, bolstered by the suggestion of Perkins, a POSITA would be motivated to combine Johnson and X.233 with a reasonable expectation of success in doing so.
providing a controller to determine if at least one received message is a duplicate message and determining a location from which the duplicate message originated.	The language of claim element [8d] refers to "at least one received message" and does not invoke a definite article such as "said" or "the" which would indicate that the claimed "at least one received message" must be one that was received by the claimed "receiver" and has a format matching that required by claim element [8c]. Accordingly, the claimed "at least one received message" need not be received by the claimed "receiver" and need not have a format matching that required by claim element [8c]. With that background, an RCN processor 414 located in an RCN 112 corresponds to the claimed "controller." For example, RCN 112 performs a technique for avoiding transmission of duplicate information from RCNs112 to an intermediate data terminal 114. Ex. 1002 at 20:13-17. To do so,

	each RCN 112 monitors the transmissions of the other RCNs 112. *Id*. When the transmissions are monitored, the transmitted information is compared with NSM messages stored in the monitoring RCN 112. *Id*. at 20:17-21, 52:51-54. If the monitoring RCN 112 determines that information transmitted by a neighboring RCN 112 is a duplicate of an NSM message stored in the monitoring RCN 112, then the redundant information is discarded. *Id*. An RCN 112 thus operates "to determine if at least one received message is a duplicate message." In performing the message redundancy reduction described above, RCN 112 examines certain information in the NSM messages in question, including the NSMTYP, NSMADR, MSGTYPE, and MSGNO fields. *Id*. at 52:57-62. The NSMTYP and NSMADR fields are used to uniquely identify the NSM 110 from which the NSM message originated. *Id*. at 41:44-52. Accordingly, RCN 112, in ascertaining whether an NSM message is a duplicate, determines "a location from which the duplicate message originated." Because RCN processor 414 performs the processing and analysis described above (see e.g., Ex. 1002 at 18, 47-50, 20:4-7), RCN processor 414 corresponds to the claimed "controller to determine if at least one received message is a duplicate message and determining a location from which the duplicate message originated."
9. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one	The above contentions for claim 8 are hereby incorporated by

of the devices comprise geographically remote transceivers adapted to transmit and receive at least one message using radio frequency transmissions.	reference. Johnson discloses that each RCN 112 has an RCN transmitter 418 and an RCN receiver 416. Ex. 1002 at 18:3-13, FIG. 9. And each NSM 110 can have an NSM transmitter 318 and an NSM receiver 316. *Id*. at 10:24-40, 11:26-45. Each RCN transmitter/receiver pair and each NSM transmitter/receiver pair are transceivers, because each pair sends and receives radio frequency transmissions. *Id*. at 10:36-43, 11:26-30, 18:14-46. Moreover, Johnson refers to the transmitter/receiver pairs of network nodes (of which, per FIG. 35, NSMs 110 and RCNs 112 are examples) as “transceivers.” *Id*. at 31:39-41. Johnson also discloses that the various NSMs 110 and RCNs 112 (and hence their respective transceivers) are geographically remote from each other. *Id*. at 9:47-58, 25:33-38, FIGS. 1, 12. Each RCN transmitter/receiver pair (transceiver) is operable to transmit an RND message to an NSM transmitter/receiver pair (transceiver) using radio frequency transmission. *Id*. at 9:47-58, 10:10-23, 25:33-51, FIGS. 1, 12. And these transceivers are geographically remote from each other. *Id*. at 10:36-56, 18:23-29, 39:20-43, 55:30-59. As noted above, an RND message “has a packet comprising a command indicator comprising a command code, a scalable data value comprising a scalable message, and an error detector that is a redundancy check error detector,” such that it qualifies as the claimed “the at least one message.” Accordingly, RCNs 112 and NSMs 110 and their corresponding RCN transmitter/receiver pairs and NSM transmitter/receiver pairs correspond to the claimed “at least one remote wireless communication device wherein at least one of the devices comprise geographically remote transceivers adapted to transmit

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	and receive the at least one message using radio frequency transmissions."
10. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices has a unique address and the packet further comprises at least one scalable address field to contain the unique address for at least one device.	The above contentions for claim 8 are hereby incorporated by reference. Johnson discloses that network nodes have unique network addresses. *Id*. at 41:29-33, 40-46. Johnson also discloses NSMs 110 are examples of the network nodes that have unique network address (see FIG. 35, which is described as summarizing the address space for each node type and which includes NSM as a node type). NSMs 110 correspond to the claimed remote wireless communication devices that have unique addresses. A packet received by an NSM 110 "comprises at least one scalable address field to contain the unique address for at least one device." For example, Johnson discloses the use of a data link packet structure that includes a source or destination address that is specified in an expanding address field. Ex. 1002 at 38:38-39. When the address is a destination address, it corresponds to the claimed "scalable address field." The scalable nature of this address is explained in detail above. The scalable address field of Johnson serves "to contain the unique address for at least one device." For example, as noted above, the NSMs disclosed in Johnson each qualify as a claimed "remote wireless communication device" that has a "unique address." In a system where there is only one type of NSM, an NSM can be targeted by using only NSMADR as the unique

	destination address. If the system includes multiple types of NSMs, the system can use a combination of an NSMTYPE and NSMADR as the unique destination address. Alternatively, if Johnson does not disclose a receiver address comprising a scalable address (claims 1 and 14), a data value comprising a scalable message (claims 1, 8, and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10), X.233 discloses those features. For example, X.233 discloses a protocol that may be used for communication between network entities. X.233 at 1. The protocol uses protocol data units (PDUs) that include a destination address and data field that are each variable in length. *Id*. at 21, 29. Figure 9 in X.233 (reproduced below) demonstrates the variable length destination address and data field. *Id*. at p. 29. For the destination address, a destination address length indicator field specifies the length of the destination address in octets. *Id*. at p. 21. The destination address follows and has a size dependent on the value of this length indicator field. *Id*. Similarly, the data part of the PDU disclosed in X.233 is shown to have a variable size as evidenced by the use of the variables "p+1" and "z" to identify the start and end of the data (as compared to the definite sizes assigned to several fields in the X.233 PDU, such as "Network Layer Protocol Identifier," "Segment Length," and "Checksum." *Id*. at 29. Accordingly, the destination address of the X.233 PDU

	corresponds to a receiver address comprising a scalable address (claims 1 and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10). And the data part of the X.233 PDU corresponds to a data value comprising a scalable message (claims 1, 8, and 14) and/or a preformatted message having at least one scalable field (claim 2). A POSITA would have been motivated to use the scalable fields (including receiver address and message) of X.233 in Johnson's system. The '492 patent uses scalable addresses in order to accommodate systems of different sizes and complexity. Ex. 1001 at 9:59-61. The scalable addresses of X.233 have the same effect. {CITE to expert}. Johnson also recognizes that the identification of nodes as the number of end points increases is an issue of concern. Ex. 1002 at 26:40-45. To the extent that the Board does not believe that Johnson discloses scalable addresses, using the scalable addresses of X.233 in Johnson's system would allow a POSITA to effectively address Johnson's stated issue of identifying nodes in networks with increasing sizes and complexity. Johnson's concern for this issue is underscored by Johnson's disclosure of the use of a destination address that "is specified in an expanding, in byte units, address field." *Id*. at 38: 38-39. Regarding scalable messages, the '492 patent recognizes that different commands may require different amounts of data. Ex. 1001 at 10:37-38. Further to that recognition, the '492 patent allows a message to be broken up

	into multiple packets. *Id*. at 10:41-46. Similarly, the use of scalable messages in X.233 shows that X.233 appreciates that different commands may require different amounts of data. And similar to the '492 patent, X.233 allows a message to be broken up into multiple packets. X.233 at 9. Johnson also takes note of the issue of breaking messages up into multiple packets and demonstrates the ability to use a variable length information field. Ex. 1002 at 35:56-60, 38:33-38. To the extent that the Board does not believe that Johnson discloses scalable messages, using the scalable messages of X.233 in Johnson's system would provide a POSITA a way to help implement the breaking of messages into multiple packets noted by Johnson. Moreover, a POSITA would appreciate that Johnson and X.233 both disclose connectionless protocols. Ex. 1002 at 35:45-48, 40:63-65; X.233 at 1. A POSITA would also appreciate that the protocol of X.233 could be used in a wireless network, such as disclosed by Johnson, even though X.233 is silent as to whether its protocol can be used in a wireless network. For example, Perkins (which is directed to a system and method for routing information between mobile hosts) discloses that it was known prior to the earliest priority date of the '492 patent to use the ISO 8473 protocol, known as CLNP, in a wireless system. Perkins at 4:22-35. X.233 notes that its protocol is known as CLNP (Connectionless-mode Network Protocol) and that "[t]he identical text is also published as ISO/IEC International Standard 8473-1." X.233 at 1, 4. Accordingly, bolstered by the suggestion of Perkins, a POSITA would be motivated to combine Johnson and X.233 with a

	reasonable expectation of success in doing so.
11. The method of claim 8, further comprising providing an actuator associated with at least one of the remote devices, the actuator configured to actuate in response to the command code.	The above contention for claim 8 is hereby incorporated by reference. Johnson discloses that loads can be controlled by sending appropriate commands to an NSM 110 from an RCN 112. Ex. 1002 at 10:53-56, 14:50-56, 20:40-65. FIG. 4 in Johnson is an illustrative listing of applications supported by the NSMs. *Id*. at 60-62. Several load control functions (e.g., for air conditioners, water heaters, and pool pumps/heaters) are included as part of that list. *Id*. at FIG. 4. The load control functions disclosed by Johnson evidence the existence of actuators that activate a device. Because these actuators perform actions dependent on commands received from an RCN 112 (which sends commands to an NSM 110 using an RND message that includes a command code as noted above), the actuators each "actuate in response to the command code," as claimed.
13. The method of claim 8, further comprising determining if an error exists in a packet of the at least one message.	The above contention for claim 8 is hereby incorporated by reference. Johnson discloses that all RND messages (which correspond to the claimed "the at least one message" as explained above) includes a CRC field for error control. Ex. 1002 at 35:66-36:1, 39:11-15. Packets that fail CRC verification are usually counted and discarded. *Id*. at 36:1-2. The CRC verification described in

	Johnson corresponds to the claimed "determining if an error exists in a packet of the at least one message."
14. A wireless communication device for use in a communication system to communicate command and sensed data between remote wireless communication devices, the wireless communication device comprising:	As explained in greater detail in the analysis of claim element [1a], Johnson discloses a system in which a wide area communications network collects network service module (NSM) data generated by a plurality of physical devices within a geographical area. Johnson's remote cell nodes (RCN) 112 and network service modules (NSM) 110, which communicate with each other wirelessly, are examples of the claimed "remote wireless communication devices." *Id*. at 9:47-58, 10:10-23, 17:53-18:46. NSM data generated by physical devices in the network corresponds to the claimed "sensed data" and can be sent from an NSM 110 to a RCN 112 in response to a request from the RCN 112. *Id.* at 10:62-11:10, 11:17-20, 11:46-52, 20:40-49. The request from the RCN 112 is an example of the claimed "command" data that is communicated between remote devices. In addition, an RCN 112 can send other commands to an NSM 110. For example, a RCN 112 can forward a command to cutoff the power to a specific NSM 110. *Id*. at 20:49-53. In addition, an RCN 112 can transmit control signals (which correspond to the claimed "command" data) for operating equipment within the premises in which a NSM 110 is located. *Id*. at 20:54-65.
a transceiver configured to send and receive wireless communications; and	Each RCN 112 has an RCN transmitter 418 and an RCN receiver 416. Ex. 1002 at 18:3-13, FIG. 9. Each RCN transmitter/receiver pair is a transceiver, because each pair sends and receives

	wireless communications. *Id*. at 10:36-43, 11:26-30, 18:14-46. Moreover, Johnson refers to the transmitter/receiver pairs of network nodes (of which, per FIG. 35, NSMs 110 and RCNs 112 are examples) as "transceivers." *Id*. at 31:39-41.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to format a message comprising a receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code, a data value comprising a scalable message.	Each RCN 112 includes an RCN processor 414. Ex. 1002 at 18:3-13, FIG. 9. The RCN processor 414 corresponds to the claimed "controller." Each RCN processor 414 can communicate with a NSM 110 (which corresponds to the claimed "other remote wireless device") via the RCN processor's corresponding RCN transmitter/receiver pair. *Id*. at 10:36-40, 18:14-55, 19:30-38. Specifically, RCN processor 414 uses a preformatted message to communicate with the NSM's transceiver. Johnson discloses that RCN processor 414 controls the RCN transmitter 418. Ex. 2002 at 18:50-51. Using RCN transmitter 419, an RCN 112 can send an RND message to an NSM 110. *Id*. at 10:36-56, 18:23-29, 39:20-43, 55:30-59. This RND message corresponds to the claimed "preformatted message." RCN processor 414 operates to format this preformatted message to include a receiver address comprising a scalable address of at least one remote wireless device, a command indicator comprising a command code, and a data value comprising a scalable message. Alternatively, if Johnson does not disclose a receiver address comprising a scalable address (claims 1 and 14), a data value comprising a scalable message (claims 1, 8, and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10), X.233 discloses those

	features. For example, X.233 discloses a protocol that may be used for communication between network entities. X.233 at 1. The protocol uses protocol data units (PDUs) that include a destination address and data field that are each variable in length. *Id*. at 21, 29. Figure 9 in X.233 (reproduced below) demonstrates the variable length destination address and data field. *Id*. at p. 29. For the destination address, a destination address length indicator field specifies the length of the destination address in octets. *Id*. at p. 21. The destination address follows and has a size dependent on the value of this length indicator field. *Id*. Similarly, the data part of the PDU disclosed in X.233 is shown to have a variable size as evidenced by the use of the variables "p+1" and "z" to identify the start and end of the data (as compared to the definite sizes assigned to several fields in the X.233 PDU, such as "Network Layer Protocol Identifier," "Segment Length," and "Checksum." *Id*. at 29. Accordingly, the destination address of the X.233 PDU corresponds to a receiver address comprising a scalable address (claims 1 and 14), a preformatted message having at least one scalable field (claim 2), and/or a packet that further comprises at least scalable address field (claim 10). And the data part of the X.233 PDU corresponds to a data value comprising a scalable message (claims 1, 8, and 14) and/or a preformatted message having at least one scalable field (claim 2). A POSITA would have been motivated to use the

	scalable fields (including receiver address and message) of X.233 in Johnson's system. The '492 patent uses scalable addresses in order to accommodate systems of different sizes and complexity. Ex. 1001 at 9:59-61. The scalable addresses of X.233 have the same effect. {CITE to expert}. Johnson also recognizes that the identification of nodes as the number of end points increases is an issue of concern. Ex. 1002 at 26:40-45. To the extent that the Board does not believe that Johnson discloses scalable addresses, using the scalable addresses of X.233 in Johnson's system would allow a POSITA to effectively address Johnson's stated issue of identifying nodes in networks with increasing sizes and complexity. Johnson's concern for this issue is underscored by Johnson's disclosure of the use of a destination address that "is specified in an expanding, in byte units, address field." *Id*. at 38: 38-39. Regarding scalable messages, the '492 patent recognizes that different commands may require different amounts of data. Ex. 1001 at 10:37-38. Further to that recognition, the '492 patent allows a message to be broken up into multiple packets. *Id*. at 10:41-46. Similarly, the use of scalable messages in X.233 shows that X.233 appreciates that different commands may require different amounts of data. And similar to the '492 patent, X.233 allows a message to be broken up into multiple packets. X.233 at 9. Johnson also takes note of the issue of breaking messages up into multiple packets and demonstrates the ability to use a variable length information field. Ex. 1002 at 35:56-60, 38:33-38. To the extent that the Board does not believe that Johnson discloses scalable messages, using the scalable messages of X.233 in

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	Johnson's system would provide a POSITA a way to help implement the breaking of messages into multiple packets noted by Johnson. Moreover, a POSITA would appreciate that Johnson and X.233 both disclose connectionless protocols. Ex. 1002 at 35:45-48, 40:63-65; X.233 at 1. A POSITA would also appreciate that the protocol of X.233 could be used in a wireless network, such as disclosed by Johnson, even though X.233 is silent as to whether its protocol can be used in a wireless network. For example, Perkins (which is directed to a system and method for routing information between mobile hosts) discloses that it was known prior to the earliest priority date of the '492 patent to use the ISO 8473 protocol, known as CLNP, in a wireless system. Perkins at 4:22-35. X.233 notes that its protocol is known as CLNP (Connectionless-mode Network Protocol) and that "[t]he identical text is also published as ISO/IEC International Standard 8473-1." X.233 at 1, 4. Accordingly, bolstered by the suggestion of Perkins, a POSITA would be motivated to combine Johnson and X.233 with a reasonable expectation of success in doing so.
15. The wireless communication device of claim 14, further comprising at least one sensor configured to detect a condition and output a signal to the controller.	The above contentions for claim 14 are hereby incorporated by reference. Johnson discloses that each NSM 110 includes sensors 320 and 322. Ex. 1002 at 10:24-35. These sensors are associated with the transmitter/receiver pair for the NSM 110, because they are all part of the NSM 110 and because a given transmitter/receiver pair

	is responsible for sending data from the sensors to an RCN 112. *Id*. at 10:24-35, 10:62-11:33, FIG. 2. The sensors can detect conditions such as meter information, time of use, and other information or status. *Id*. at 10:62-11:20, 14:37-16:21. The sensors are also operable to output NSM data to that is transmitted to an RCN 112 using the NSM transmitter 318. *Id*. at 10:62-11:33. The RCN controller 414 (which corresponds to the claimed "controller") located at RCN 112 ultimately receives and processes the NSM data. *Id*. at 18:47-50. Accordingly, the NSM data corresponds to the claimed "signal" that is output to the claimed "controller."
16. The wireless communication device of claim 14, wherein the controller is further configured to determine if at least one received message is a duplicate message and determine a location from which the duplicate message originated.	The above contentions for claim 14 are hereby incorporated by reference. The language of claim element [16a] refers to "at least one received message" and does not invoke a definite article such as "said" or "the" which would indicate that the claimed "at least one received message" must be one that has a format matching that required by claim element [14c]. Accordingly, the claimed "at least one received message" need not have a format matching that required by claim element [14c]. With that background, as noted above, an RCN processor 414 located in an RCN 112 corresponds to the claimed "controller." This controller is operable "to determine if at least one received message is a duplicate message and determine a location from which the duplicate message originated," as required by claim 16. For example, RCN 112 performs a

	technique for avoiding transmission of duplicate information from RCNs112 to an intermediate data terminal 114. Ex. 1002 at 20:13-17. To do so, each RCN 112 monitors the transmissions of the other RCNs 112. *Id*. When the transmissions are monitored, the transmitted information is compared with NSM messages stored in the monitoring RCN 112. *Id*. at 20:17-21, 52:51-54. If the monitoring RCN 112 determines that information transmitted by a neighboring RCN 112 is a duplicate of an NSM message stored in the monitoring RCN 112, then the redundant information is discarded. *Id*. An RCN 112 thus operates "to determine if at least one received message is a duplicate message." In performing the message redundancy reduction described above, RCN 112 examines certain information in the NSM messages in question, including the NSMTYP, NSMADR, MSGTYPE, and MSGNO fields. *Id*. at 52:57-62. The NSMTYP and NSMADR fields are used to uniquely identify the NSM 110 from which the NSM message originated. *Id*. at 41:44-52. Accordingly, RCN 112, in ascertaining whether an NSM message is a duplicate, determines "a location from which the duplicate message originated." Because RCN processor 414 performs the processing and analysis described above (see e.g., Ex. 1002 at 18, 47-50, 20:4-7), RCN processor 414 corresponds to the claimed "controller…configured to determine if at least one received message is a duplicate message and determine a location from which the duplicate message originated."

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17. The wireless communication device of claim 14, further comprising at least one actuator configured to implement an action corresponding to the command code.	The above contention for claim 14 is hereby incorporated by reference. Johnson discloses that loads can be controlled by sending appropriate commands to an NSM 110 from an RCN 112. Ex. 1002 at 10:53-56, 14:50-56, 20:40-65. FIG. 4 in Johnson is an illustrative listing of applications supported by the NSMs. *Id*. at 60-62. Several load control functions (e.g., for air conditioners, water heaters, and pool pumps/heaters) are included as part of that list. *Id*. at FIG. 4. The load control functions disclosed by Johnson evidence the existence of actuators that activate a device. Because these actuators perform actions dependent on commands received from an RCN 112 (which sends commands to an NSM 110 using an RND message that includes a command code as noted above), the actuators each "implement an action corresponding to the command code," as claimed.
18. The device of claim 14, wherein the transceiver comprises a unique transceiver address to distinguish the transceiver from other transceivers.	The above contentions for claim 14 are hereby incorporated by reference. Johnson discloses that network nodes have unique network addresses. *Id*. at 41:29-33, 40-46. Johnson also discloses that an RCN 112 is an example of a network node that has a unique network address (see FIG. 35, which is described as summarizing the address space for each node type and which includes an RCN as a node types). Accordingly, the RCN transmitter/receiver pair in an RCN 112, which corresponds to the claimed "transceiver"

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	as noted above, has a unique address that distinguishes it from other transceivers located in other network nodes.
19. In a system for communicating commands and sensed data between remote devices comprising a communications device for communicating commands and sensed data, the communications device comprising:	Mason discloses an automatic meter reading (AMR) system that includes a plurality of utility meters 12 (for metering electricity, gas or water). Mason at 5:32-34. Each of the meters 12 can send or receive RF communications from a node 18. Mason at 5:35-41. The meters 12 can also send or receive RF communications directly from another meter 12 by operating as a repeater. Mason at 6:27-35. The RF communications include commands to a meter 12 and sensed data from a meter 12. Mason at 5:59-64, 6:8-13, 9:56-61, 10:43-47, 11:28-35, 15:28-47. One of the meters 12 corresponds to the claimed communications device.
a transceiver operably configured to be in communication with at least one other of a plurality of transceivers, wherein the transceiver has a unique address, wherein the unique address identities the individual transceiver, wherein the transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with each of the other transceivers via preformatted messages;	Mason discloses that each meter 12 has a corresponding RF module for sending and receiving RF communications. Mason at 5:35-41. Node 18 also includes an RF module. *Id*. at 5:41-43. Each of these RF modules corresponds to one of the claimed transceivers. FIG. 1, for example, shows that each RF module is in communication with at least one other RF module. Thus, any one of the RF modules in a meter 12 or node 18 could correspond to the claimed "a transceiver operably configured to be in communication with at least one other of a plurality of transceivers." In addition, each of the RF modules is "geographically remote" from the other of the RF modules, as demonstrated in FIG. 1 and further evidenced by the need for a meter to at times function as a repeater in order to reach

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	hard to access meters. *Id*. at 6:15-35. Each meter 12 has a unique address. *Id*. at 3:27-29, 10:43-11:13. Accordingly, each RF module (transceiver) in a meter 12 has a corresponding unique address. In addition, because a node 18 must be distinguishable from other nodes 18 by a meter 12, the RF module for a node 18 also has a unique address. *Id*. at 7:19-23. Mason also discloses that communication in its system occurs using a protocol that employs the CEBUS RF protocol and the ANSI C12.18 protocol. *Id*. at 6:1-13, 9:37-40. Thus, each transceiver in Mason "communicates with each of the other transceivers via preformatted messages."
a controller configured to be in communication with the transceiver, the controller configured to provide preformatted messages for communication; wherein the preformatted message comprises at least one packet, wherein the packet comprises:	Mason discloses that node 18 preferably includes a digital controller. Mason at 5:41-43. This controller is in communication with the RF module of the node 18 and is configured to provide messages that employ the CEBUS RF protocol and the ANSI C12.18 protocol. *Id*. at 6:1-13, 9:37-40. Each of the messages includes at least one packet. *Id*. at 6:8-13. These messages correspond to the claimed preformatted messages, and the controller in node 18 is an example of the claimed "controller." Similarly, each meter 12 also provides messages that employ the CEBUS RF protocol and the ANSI C12.18 protocol, with each message including at least one packet. *Id*. at 6:1-13, 9:37-40. While each meter 12 must include some kind of controller that operates to provide these messages, Mason does not explicitly disclose that a controller that provides the

	messages is separate from the transceiver such that the controller "is configured to be in communication with the transceiver." Mason notes that its system "does not require any specific design for the meters." *Id*. at 5:64-67. Mason also mentions several copending applications and indicates that "the cited copending applications may be consulted for further information concerning practical systems of the kind for which the present invention is particularly suited." *Id*. at 6:35-38. One such copending application is Shuey (filed as U.S. Patent Application Serial No. 08/870,640). *Id*. at 6:15-23. Shuey, similar to Mason, discloses an AMR system that includes a plurality of meters 12, where each of the meters 12 can send or receive RF communications from a node 18, and the meters 12 can send or receive RF communications directly from another meter 12 by operating as a repeater. Shuey at FIG. 5, 5:2-13. Shuey discloses that meter 12 can include a communications processor and a control processor that communicate with the meter's transceiver (radio) and provides preformatted messages for communication. Shuey at FIG. 4, 4:20-57. Either of these processors corresponds to the claimed "controller." A POSITA would have been motivated to incorporate into Mason's system Shuey's teaching of a controller in a meter that is separate from a transceiver, because Mason explicitly notes that Shuey's system is a system for which Mason's invention is particularly suited. Mason at 6:35-38.
a receiver address comprising a scalable address of the at least	Mason discloses that commands can be sent to

one of the intended receiving transceivers; sender address comprising the unique address of the sending transceiver; a command indicator comprising a command code; at least one data value comprising a scalable message; and an error detector comprising a redundancy check error detector; and wherein the controller is configured to interact with the transceiver to send preformatted command messages.	individual meters using the meter's unique address. Mason at 10:43-56. But Mason does not explicitly disclose that the address comprises a scalable address. X.233 discloses this feature. X.233 discloses a protocol that may be used for communication between network entities. X.233 at 1. The protocol uses protocol data units (PDUs) that include a destination address that is variable in length. *Id*. at 21, 29. A destination address length indicator field specifies the length of the destination address in octets. *Id*. at p. 21. The destination address follows and has a size dependent on the value of this length indicator field. *Id*. Accordingly, the destination address of the X.233 PDU corresponds a receiver address comprising a scalable address. A POSITA would have been motivated to use the scalable destination address of X.233 in Mason's system. The '492 patent uses scalable addresses in order to accommodate systems of different sizes and complexity. Ex. 1001 at 9:59-61. The scalable addresses of X.233 have the same effect. {CITE to expert}. Mason expresses a desire to implement a large scale AMR system. Mason at 1:46-48, 5:25-57. Mason also recognizes the importance of uniquely identifying a large number of destination meters. Mason at 10:43-56. Using the scalable addresses of X.233 in Mason's system would allow a POSITA to effectively identify message destinations in networks with increasing sizes and complexity. Moreover, a POSITA would also appreciate that the protocol of X.233 could be used in a wireless network, such as disclosed by Mason, even though X.233 is silent as to whether

	its protocol can be used in a wireless network. For example, Perkins discloses that it was known to use the ISO 8473 protocol, known as CLNP, in a wireless system. Perkins at 4:22-35. X.233 notes that its protocol is known as CLNP (Connectionless-mode Network Protocol) and that "[t]he identical text is also published as ISO/IEC International Standard 8473-1." X.233 at 1, 4. Accordingly, bolstered by the suggestion of Perkins, a POSITA would be motivated to combine Mason and X.233, with a reasonable expectation of success in doing so. Mason discloses that messages sent in its system include a Source House Code field and a Source Address field. Mason at 7:19-31. The Source House Code is used to specify the ID of the node 18 from which the message originated. *Id*. at 7:19-21. Meters only respond to messages from their assigned node. *Id*. at 7:21-22. Accordingly, the node needs to have a unique address that can be used to identify it. The Source House Code field thus corresponds to the claimed "sender address comprising the unique address of the sending transceiver." When the Source Address field is non-zero, a meter acts as a repeater to transfer a message between the node and the end meter. *Id*. at 7:26-31, 10:28-34. In this situation, the Source Address field holds information used to identify the meter acting as a repeater. *Id*. Since the meter's address is a unique address, the Source Address field is another example in Mason that corresponds to the claimed "sender address comprising the unique address of the sending transceiver."

	Mason discloses that its packets include an 8-bit control field. Mason 6:48-53. Within this control field is a 3-bit field called Packet Type. *Id*. at 6:57-7:13. The Packet Type field is encoded so that the packet type of the message changes depending on the specific combination of bits. *Id*. For example, the code 010 means the message is the UNACK_DATA packet type. *Id*. Depending on the packet type, the destination acts in a different way. If, for example, the packet type is UNACK_DATA, then the destination will not send an acknowledgement to the source. If the packet type is ACK_DATA, then the destination will send an acknowledgement to the source. Accordingly, the Packet Type field is "a command indicator comprising a command code." Another example of a command code in Mason's messages can be found as part of the CAL message that is part of the Information Field of the CEBUS frame. *Id*. at 6:48-53, 7:55-58, 9:37-40, 10:1-10. Specifically, the C12.18 application layer command that is part of the User Defined Data in the CAL message includes a command code that can, for example, instruct a meter to perform certain actions. *Id*. at 9:37-40, 10:1-10, 10:43-49, 13:14-15:19. Mason discloses that its messages include a CAL message that is part of the Information Field of the CEBUS frame. *Id*. at 6:48-53, 7:55-58, 9:37-40, 10:1-10. The CAL message includes User Defined Data. *Id*. at 9:53-10:10. This User Defined Data can include a message that can vary in size (and is thus scalable), as evidenced by Mason's disclosure that a message can be segmented into multiple packets if it does

	not fit into the 32-byte Information Field. *Id*. at 7:61-63. Should the Board, however, not believe that Mason discloses a data value comprising a scalable message, the ANSI C12.18-1996 protocol (C12.18 protocol) discloses that feature. Mason discloses that the C12.18 protocol is used to implement the User Defined Data. *Id*. at 9:37-40, 9:59-10:10. The C12.18 protocol discloses, for example, that a write request can be used to transfer data to a target device. C12.18 protocol at 7, 8. The write request includes, among other things, a command code specifying that a write request is to be performed, and data that is to be written to the target device. *Id*. The data is depicted as being a variable number of bytes with a length that is defined in the write request. *Id*. at 2, 8. A POSITA would be motivated to combine the teachings of the C12.18 protocol into Mason, because Mason specifically discloses that the application layer of the C12.18 protocol can be used in the messages taught by Mason. *Id*. at 9:37-40, 9:59-10:10. And the aforementioned write request in the C12.18 protocol is a service in the C12.18 protocol application layer. C12.18 at 3, 7. Mason discloses that its message include a checksum, which is a type of error detector. Mason at 6:48-54, 15:48-53. But Mason does not explicitly disclose that the error detector is a redundancy check error detector. The C12.18 protocol discloses that a CRC field is used as an error detector. C12.18 at 13. CRC, which stands for cyclic redundancy check, is a redundancy check error detector. It would have been obvious

	to a POSITA utilize a redundancy check error detector, such as that disclosed by the C12.18 protocol, in Mason's system, because Mason discloses that the C12.18 protocol is used in its message protocol, and because CRC is a type of checksum, which is disclosed by Mason as being used as an error detector. Mason discloses that a meter's transceiver can send to a target meter a preformatted command message that originated from a node 18. Mason at 6:8-14, 6:48-7:13, 10:1-10, 10:43-49. While each meter 12 must include some kind of controller that operates to provide these messages, Mason does not explicitly disclose a controller that is separate from and configured to interact with the transceiver such that the controller "is configured to interact with the transceiver to send preformatted command messages." As detailed above, in a system that Mason explicitly discloses could be used to implement its invention, Shuey discloses a meter 12 with a separate controller and transceiver. Shuey at FIG. 4, 4:20-57. That separate controller interacts with the transceiver to send preformatted command messages. *Id*. at 4:20-57. For reasons similar to those provided in the analysis for claim element [19c], it would have been obvious to a POSITA to utilize the meter of Shuey in Mason's system.
20. The communication device of claim 19, further comprising a sensor operatively configured to detect a condition and output a sensed data signal that corresponds to the condition to the	The above contentions for claim 19 are hereby incorporated by reference. Mason discloses that each meter 12 includes a metering board

transceiver.	for performing the metering function. Mason at 5:59-63. This metering board corresponds to the claimed sensor. The metering board is operable to detect a condition related to, for example, electricity, gas, or water, and output meter information corresponding to the condition to the meter's transceiver. Id. at 5:32-41, 9:56-65, 15:37-47, 49-53.
21. The communication device of claim 20, wherein the transceiver is configured to receive a preformatted command message requesting sensed data, confirms the receiver address is its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above contentions for claim 20 are hereby incorporated by reference. Mason discloses that a meter 12 (and hence its transceiver) receives a CEBUS message from either a node 18 or another meter 12. Mason at 5:32-57, 6:1-35, FIGS. 1, 3. The CEBUS message is a "preformatted command message," because it includes an embedded C12.18 command that instructs the receiving meter to perform certain actions. *Id*. at 9:37-40, 10:1-10, 10:43-49, 13:14-15:19. For example, a C12.18 command can be used to read meter information from a meter 12. *Id*. at 13:14-15:19. Accordingly, the transceiver of a meter 12 is "configured to receive a preformatted command message requesting sensed data." Upon receiving a CEBUS message, the transceiver confirms that its unique address is the intended destination. Mason at 10:43-64. The transceiver also receives meter information from the metering board in meter 12. *Id*. at 5:58-64, 13:14-15:19, 16:45-47. Accordingly, the transceiver of a meter 12 "confirms the receiver address as its own unique

Exhibit P13 – Invalidity Chart for U.S. Patent No. 7,697,492 based on U.S. Patent 5,673,252 and U.S. Patent 6,100,817

	address" and "receives the sensed data signal." The transceiver places the meter information in a response message. If the meter information cannot fit into a 32-byte Information field, the response message is segmented into multiple packets. *Id*. at 7:61-63, 13:42-15:20. Thereafter, the transceiver transmits the response message to the node 18 that originally requested the meter information. *Id*. at 5:35-41, 13:15-15:20. Accordingly, the transceiver of a meter 12 "formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the pre-formatted response message comprising at least one packet."
25. A wireless communication device for use in a communication system to communicate a number of commands and sensed data between remote wireless communication devices, the wireless communication device comprising:	Mason discloses an automatic meter reading (AMR) system that includes a plurality of utility meters 12 (for metering electricity, gas or water). Mason at 5:32-34. Each of the meters 12 can send or receive RF communications from a node 18. Mason at 5:35-41. The meters 12 can also send or receive RF communications directly from another meter 12 by operating as a repeater. Mason at 6:27-35. The RF communications include commands to a meter 12 and sensed data from a meter 12. Mason at 5:59-64, 6:8-13, 9:56-61, 10:43-47, 11:28-35, 15:28-47. One of the meters 12 corresponds to the claimed "wireless communications device." A meter 12 or node 18 corresponds to the claimed "remote wireless communication devices."
a transceiver configured to send and receive wireless	Mason discloses that each meter 12 has a corresponding RF

communications; and	module for sending and receiving RF communications. Mason at 5:35-41. Node 18 also includes an RF module. *Id*. at 5:41-43. Each of these RF modules corresponds to a claimed transceiver.
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to reformat a message comprising receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code; a data value comprising a scalable message.	Mason discloses that each meter 12 also provides messages that employ the CEBUS RF protocol and the ANSI C12.18 protocol. *Id*. at 6:1-13, 9:37-40. One of these messages corresponds to the claimed "preformatted message." While each meter 12 must include some kind of controller that operates to provide these messages, Mason does not explicitly disclose a controller that provides the messages is separate from the transceiver such that the controller is "configured to communicate...via the transceiver." As detailed above in the analysis for claim element [19c], in a system that Mason explicitly discloses could be used to implement its invention, Shuey discloses a meter 12 with a separate controller and transceiver. Shuey at 4:20-57, FIG. 4. That separate controller interacts with the transceiver to send and receive preformatted messages. Shuey at 4:20-57. For reasons similar to those provided in the analysis for claim element [19c], it would have been obvious to a POSITA to utilize the meter of Shuey in Mason's system. Mason also discloses that its preformatted messages comprise a receiver address comprising an address of at least one remote wireless device, a command indicator comprising a command code, and a data value comprising a scalable message, as detailed above in the analysis for claim elements [19d], [19f], and [19g].

	To the extent the Board does not believe that Mason discloses a data value comprising a scalable message, the ANSI C12.18-1996 protocol (C12.18 protocol) discloses that feature. For the same reasons provided above in the analysis for claim element [19g], a POSITA would be motivated to combine the teachings of the C12.18 protocol into Mason. With respect to the "scalable" aspect of the receiver address, it would have been obvious to a POSITA to include that feature in Mason in view of X.233 and Perkins, as explained above in the analysis for claim element [19d]. Mason also discloses that a meter 12 can act as a repeater so that a node can communicate with another meter that is considered "inaccessible" with respect to the node. Mason at 6:27-35. To successfully act as a repeater, it is logical that a meter may need to reformat the message that it is forwarding. But Mason does not explicitly provide that teaching. Shuey, similar to Mason, discloses an AMR system that includes a plurality of meters 12, where each of the meters 12 can send or receive RF communications from a node 18, and the meters 12 can send or receive RF communications directly from another meter 12 by operating as a repeater. Shuey at FIG. 5, 5:2-13. As part of that operation as a repeater, a meter can receive an outbound request from a node 18 and duplicate it, except that the meter alters the repeater field to let the remote meter know the message is to be answered with an ASK response rather than an FSK response. Shuey at 5:36-41, 60-65, FIG. 6 (step S3). This message alteration

	corresponds to the claimed "reformat." A POSITA would have been motivated to incorporate into Mason's system Shuey's teaching of a repeater that reformats a message, because Mason explicitly notes that Shuey's system is a system for which Mason's invention is particularly suited. Mason at 6:35-38.

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

The '492 Patent – Claim	Reasons for Patent Ineligibility
1. In a communication system to communicate command and sensed data between remote devices, the system comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for communicating commands and sensed data between remote devices. The claim only recites the most basic, general radio networking structure including generic terms (such as, "transceiver," "controller," "receiver address") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "transceiver" or "controller." Instead, the transceiver/controller simply communicates data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to controllers and transceivers and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any controllers and any transceivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to

	foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through clients using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a receiver address comprising a scalable address of at least one remote device;	*Id.* Receiver address/scalable address are well-known fields used in packet radio communications. This claim language is ubiquitous to headers used in packet radio communication and provides nothing of significance beyond known packet header fields (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
a command indicator comprising command code;	*Id.* Command indicator/command codes are a well-known functionalities that are used in communication between devices in packet radio networks. This claim language is ubiquitous to packet radio communication and provides nothing of significance beyond known commands, or function used in packet radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
a data value comprising a scalable message; and	*Id.* Data values are a well-known messages that are communicated between devices used in packet radio communications. This claim language is ubiquitous to messages conveying data via packet radio communication and

	provides nothing of significance beyond known data communication (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
a controller associated with a remote device comprising a transceiver configured to send and receive wireless signals, the remote device configured to send a preformatted message comprising the receiver address, a command indicator, and the data value via the transceiver to at least one other remote device.	*Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers used in conjunction with packet radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the controllers, including being "configured to send and receive wireless signals," in "preformatted messages" that include information such as a "receiver address," "command indicator," and a "data value" represent nothing significantly more than the radio packet protocols well-known in packet radio networks (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
2. The system of claim 1, further comprising:	The above reasons for claim 1 are hereby incorporated by reference.
a plurality of transceivers each having a unique address, the transceiver being one of the plurality of transceivers;	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "plurality of transceivers" or their "unique address." Instead, the plurality of transceivers provide nothing more than well known communications capability via packet radio networks. Thus, the claim language is ubiquitous to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication.
a plurality of controllers associated with each the controller associated with at least one of the	*Id.* With regard to the components, there is no improvement identified with respect to the "plurality of controller" beyond known controllers used in packet

transceivers, the controller being in communication with at least one other transceiver with a preformatted message, the preformatted message having at least one scalable field;	radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
at least one sensor associated with at least one of the transceivers to detect a condition and output a data signal to the transceiver; and	*Id.* With regard to the components, there is no improvement identified with respect to the "at least one sensor" beyond known sensors that are used in well-known packet radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
at least one actuator associated with at least one of the transceivers to activate a device.	*Id.* With regard to the components, there is no improvement identified with respect to the "at least one actuator" beyond known actuators that are used in well-known packet radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
3. The system of claim 1, wherein the controller sends the preformatted message via an associated transceiver, and at least one transceiver sends the preformatted response message.	The above reasons for claim 1 are hereby incorporated by reference. *Id.* The claim in this case is directed to an ineligible abstract idea that, if allowed, would result in monopolization of a number of fundamental processes known in packet radio network of sending a message via transceiver and receiving a response, and which are well-known to those skilled in the art ((as evidenced in the prior art claim charts included in these response). There is nothing significantly different with the type of "preformatted" message as those skilled in the art know that packet radio utilize various protocols for the formatting of radio messages. Plaintiffs should not be allowed to foreclose this broad fundamental functionality with an abstract patent.

4. The system of claim 1, wherein at least one transceiver receives the preformatted message requesting sensed data, confirms the receiver address as its own unique address, receives a sensed data signal, formats the sensed data signal into scalable byte segments, determines the number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet.	The above reasons for claim 1 are hereby incorporated by reference. *Id.* The claim in this case is directed to an ineligible abstract idea that, if allowed, would result in monopolization of a number of fundamental processes used in sending a message via packet radio networks, and which are well-known to those skilled in the art (as evidenced in the prior art claim charts included in these response and the admitted prior art in the Petite patents). The steps of receiving a request for sensed data, verifying the sensor being polled, and preparing and sending a response is well known in the art of packet radio communications, and there is nothing significantly different with the type of "preformatted" message claimed as those skilled in the art know that packet radios utilize various protocols for the formatting of radio messages. Plaintiffs should not be allowed to foreclose this broad fundamental functionality with an abstract patent.
6. The system of claim 1, wherein each remote device is adapted to transmit and receive radio frequency transmissions to and from at least one other transceiver.	The above reasons for claim 1 are hereby incorporated by reference. *Id.* The claim in this case is directed to an ineligible abstract idea that, if allowed, would result in monopolization of a fundamental process used in sending a message via RF transmissions using a packet radio network, and which are well-known to those skilled in the art (as evidenced in the prior art claim charts included in these response). Plaintiffs should not be allowed to foreclose this broad fundamental functionality with an abstract patent.
8. A method of communicating command and sensed data between remote wireless devices, the	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act.

method comprising:	The claim is not directed to any specific improvement that would advance communications systems for communicating commands and sensed data between remote wireless devices. The claim only recites the most basic, general radio networking structure including generic terms (such as, "receiver," "controller," and "packet") to communicate using methods well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "receiver" or "controller." Instead, the receiver/controller simply communicate data in formatted manner ("packet") well known in packet radio communications. Thus, the claim language is ubiquitous to controllers and receivers and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any controllers and any receivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for

	sending radio transmissions through well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic method of suing controller and receiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
providing a receiver to receive at least one message;	*Id.* With regard to the components, there is no improvement identified with respect to the "receiver" beyond known receivers that are used in well-known packet radio communications network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
wherein the message has a packet comprising a command indicator comprising a command code, a scalable data value comprising a scalable message, and an error detector that is a redundancy check error detector; and	*Id.* With regard to the components, there is no improvement identified with respect to the "packet" beyond known packet protocols that are used in well-known packet radio communications networks (as evidenced in the prior art claim charts included in these responses). The claims provide nothing of significance beyond well known information used in packet radio protocols including "command indicator/code," "scalable data values," and redundancy error detection information which are all well known in the art of packet radio communications (as evidenced in the prior art claim charts included in these responses).
providing a controller to determine if at least one received message is a duplicate message and	*Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers that are used in well-

determining a location from which the duplicate message originated.	known packet radio communications networks (as evidenced in the prior art claim charts included in these responses). The claims provide nothing of significance beyond the well known functionality of identifying duplicate communications, which are all well known in the art of packet radio communications (as evidenced in the prior art claim charts included in these responses).
9. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices comprise geographically remote transceivers adapted to transmit and receive at least one message using radio frequency transmissions.	The reasons for claim 8 above are hereby incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "remote wireless communication device" beyond known controllers that are used in well-known packet radio communications networks having geographically remote transceivers (as evidenced in the prior art claim charts included in these responses).
10. The method of claim 8, further comprising providing at least one remote wireless communication device, wherein at least one of the devices has a unique address and the packet further comprises at least one scalable address field to contain the unique address for at least one device.	The above contentions for claim 8 are hereby incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "remote wireless communication device" having a "unique address" beyond known identification methods used in well-known packet radio communications (as evidenced in the prior art claim charts included in these responses). Further, the use of scalable address fields were also well known in packet radio communications and there is nothing in particular about the format of the claimed packets that is significantly beyond those already used in the field of packet radio communications.
11. The method of claim 8, further comprising providing an actuator associated with at least one of the remote devices, the actuator configured to actuate in response to the command code.	The above reasons for claim 8 is hereby incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "actuator" beyond known actuators used in well-known packet

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	radio communications networks (as evidenced in the prior art claim charts included in these responses and as admitted prior art in the Petite patents). Further, the use of scalable address fields were also well known in packet radio communications and there is nothing in particular about the format of the claimed packets that is significantly beyond those already used in the field of packet radio communications.
13. The method of claim 8, further comprising determining if an error exists in a packet of the at least one message.	The above reasons for claim 8 is hereby incorporated by reference. *Id.* The use of error detection methods are well known in the art of packet radio communications (as evidenced in the prior art claim charts included in these responses). There is nothing in the claimed error detection that is significantly beyond the well-known functions used in packet radio networks.
14. A wireless communication device for use in a communication system to communicate command and sensed data between remote wireless communication devices, the wireless communication device comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for communicating commands and sensed data between remote wireless devices. The claim only recites the most basic, general radio networking structure including generic terms (such as, “transceiver,” “controller,” “preformatted message,” “scalable address,” and “command indicator/code”) used to communicate using methods well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the “transceiver” or “controller.” Instead, the transceiver/controller simply communicates data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous

	to controllers and transceivers and is nothing more than abstraction of general packet radio communications. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any controllers and any transceivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending formatted messages via packet protocols well-known in the art of packet radio communications systems. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a transceiver configured to send and receive wireless	*Id.* With regard to the components, there is no improvement identified with

communications; and	respect to the "transceiver" beyond known transceivers used in well-known packet radio communications networks (as evidenced in the prior art claim charts included in these responses).
a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to format a message comprising a receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code, a data value comprising a scalable message.	*Id.* With regard to the components, there is no improvement identified with respect to the "controller" or the "other remote wireless device" beyond known controllers and devices used in conjunction with packet radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claimed for the controllers, including being "configured to send and receive wireless signals," in "preformatted messages" that include information such as a "receiver address that is scalable," "command indicator," and a "data value that is scalable" represent nothing significantly more than the radio packet protocols well-known in packet radio networks (as evidenced in the prior art claim charts included in these responses).
15. The wireless communication device of claim 14, further comprising at least one sensor configured to detect a condition and output a signal to the controller.	The above reasons for claim 14 are hereby incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "at least one sensor" beyond known sensors that are used in well-known packet radio communications to detect a condition and output a signal (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
16. The wireless communication device of claim 14, wherein the controller is further configured to determine if at least one received message is a duplicate message and determine a location from	The above reasons for claim 14 are hereby incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers that are used in well-

which the duplicate message originated.	known packet radio communications networks (as evidenced in the prior art claim charts included in these responses). The claims provide nothing of significance beyond the well known functionality of identifying duplicate communications, which are all well known in the art of packet radio communications (as evidenced in the prior art claim charts included in these responses).
17. The wireless communication device of claim 14, further comprising at least one actuator configured to implement an action corresponding to the command code.	The above reasons for claim 14 is hereby incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "at least one actuator" beyond known actuators that are used in well-known packet radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Nor is there anything more significant to this claim than the use of well known commands to implement such actuators.
18. The device of claim 14, wherein the transceiver comprises a unique transceiver address to distinguish the transceiver from other transceivers.	The above reasons for claim 14 are hereby incorporated by reference. With regard to the components, there is no improvement identified with respect to the "remote wireless communication device" having a "unique address" beyond known identification methods used in well-known packet radio communications (as evidenced in the prior art claim charts included in these responses).
19. In a system for communicating commands and sensed data between remote devices comprising a communications device for communicating	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act.

commands and sensed data, the communications device comprising:	The claim is not directed to any specific improvement that would advance communications systems for communicating commands and sensed data between remote devices. The claim only recites the most basic, general radio networking structure including generic terms (such as, "transceiver," "controller," "receiver address") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "transceiver" or "controller." Instead, the transceiver/controller simply communicates data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to controllers and transceivers and is nothing more than abstraction of a generic radio communication. Further, the use of formatted packets in packet radio is fundamental, and there is nothing in the claimed "receiver address comprising a scalable address of the at least one of the intended receiving transceivers," "sender address comprising the unique address of the sending transceiver," "command indicator," "data value comprising a scalable message" or "error detector" that are beyond known packet radio protocols (as evidenced by the prior art claim charts included in these responses). The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any controllers and any transceivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication

	well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through clients using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a transceiver operably configured to be in communication with at least one other of a plurality of transceivers, wherein the transceiver has a unique address, wherein the unique address identities the individual transceiver, wherein the transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with each of the other transceivers via preformatted messages;	*Id.* With regard to the components, there is no improvement identified with respect to the "transceiver" beyond known pluralities of transceivers used in packet radio communications networks (as evidenced in the prior art claim charts included in these responses). Indeed, there is nothing in this claim limitation that is significantly different or beyond known transceivers used in packet radio networks including their unique identifiers, their geographic remoteness, and their transmission of preformatted messages ("packets").
a controller configured to be in communication with the transceiver, the controller configured to provide preformatted messages for communication;	*Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers for transceivers used in packet radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the controllers, including being "configured to be in communication with the transceiver," and to provide in

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	"preformatted messages" represent nothing significantly more than the radio packet protocols and functions well-known in packet radio networks (as evidenced in the prior art claim charts included in these responses).
wherein the preformatted message comprises at least one packet, wherein the packet comprises: a receiver address comprising a scalable address of the at least one of the intended receiving transceivers; sender address comprising the unique address of the sending transceiver; a command indicator comprising a command code; at least one data value comprising a scalable message; and an error detector comprising a redundancy check error detector; and wherein the controller is configured to interact with the transceiver to send preformatted command messages.	*Id.* With regard to the components, there is no improvement identified with respect to the "packet" beyond known packet protocols that are used in well-known packet radio communications networks (as evidenced in the prior art claim charts included in these responses). The claims provide nothing of significance beyond well known information used in packet radio protocols including "command indicator/code," "scalable data values," and redundancy error detection information which are all well known in the art of packet radio communications (as evidenced in the prior art claim charts included in these responses).
20. The communication device of claim 19, further comprising a sensor operatively configured to detect a condition and output a sensed data signal that corresponds to the condition to the transceiver.	The above reasons for claim 19 are hereby incorporated by reference.
21. The communication device of claim 20, wherein the transceiver is configured to receive a preformatted command message requesting sensed data, confirms the receiver address is its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits	The above reasons for claim 20 are hereby incorporated by reference. *Id.* The claim in this case is directed to an ineligible abstract idea that, if allowed, would result in monopolization of a number of fundamental processes of transceivers used in sending a message via packet radio networks, and which are well-known to those skilled in the art (as evidenced in the prior art claim charts included in these response and the admitted prior art in the Petite patents). The claimed functionality of receiving a command for sensed data,

the preformatted response message comprising at least one packet.	verifying the sensor being polled, and preparing and sending a response is well known in the art of packet radio communications, and there is nothing significantly different with the type of "preformatted" message claimed as those skilled in the art know that packet radios utilize various protocols for the formatting of radio messages. Plaintiffs should not be allowed to foreclose this broad fundamental functionality with an abstract patent.
25. A wireless communication device for use in a communication system to communicate a number of commands and sensed data between remote wireless communication devices, the wireless communication device comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for communicating commands and sensed data between remote devices. The claim only recites the most basic, general radio networking structure including generic terms (such as, "transceiver," "controller," "receiver address") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "transceiver" or "controller." Instead, the transceiver/controller simply communicates data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to controllers and transceivers and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any controllers and any transceivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite

	patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through clients using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a transceiver configured to send and receive wireless communications; and	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "transceiver" more than its well known communications capability via packet radio networks. Thus, the claim language is ubiquitous to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication.

a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to reformat a message comprising receiver address comprising a scalable address of at least one remote wireless device; a command indicator comprising a command code; a data value comprising a scalable message.	*Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers for transceivers used in packet radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the controllers, including being "configured to reformat a message," and to provide in "preformatted messages" including a "scalable address," "command indicator," and "data value" represent nothing significantly beyond that of the radio packet protocols and functions well-known in packet radio networks (as evidenced in the prior art claim charts included in these responses).

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

The '661 Patent – Claim	Reasons for Patent Ineligibility
1. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for remote data collection, assembly, storage, and event detection beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "computer," "plurality of transceivers," and "gateway") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "computer" or "plurality of transceivers." Instead, the claimed plurality of transceivers and computer simply communicates data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to computers and transceivers and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any computer and any collection of transceivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication

	well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	*Id.* With regard to the components, there is no improvement identified with respect to the "computer" beyond known computers used in conjunction with remote sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the computer, including being "configured to execute at least one computer program," to "format and store select information for retrieval upon command" represent nothing significantly more than the procedures well-known for remote device sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "plurality of transceivers" or their being interfaced with sensors, or capable of performing repeating functions that are

select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	well known in packet radio networks. Thus, the claim language is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN.	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "gateway" that receives information from remote sensors and translates that information to a computer over a WAN (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Nor is the gateway as claimed performing and functions beyond what was already recognized in generic packet radio communications including the ability to translate data signals using protocols that permits WAN communication and obtaining information on the transceivers used in obtaining the data, which is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).

5. A system for monitoring remote devices, comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for remote data collection, assembly, storage, and event detection beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "sensor," "wireless transmitters," "gateway," and "computer") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "sensor,", "wireless transmitters," "gateway," or "computer." Instead, the claimed structures simply communicates data in a formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to packet radio networks and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any computer, collection of transmitters, and a gateway that permits their connection between remote sensors and a central control entity, with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed,

	would result in monopolization of a significant portion of packet radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	*Id.* With regard to the components, there is no improvement identified with respect to the "at least one sensor" beyond known sensors that are used in well-known packet radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
at least one wireless transmitter electrically interfaced with the sensor and configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a radio-frequency (RF) signal;	*Id.* With regard to the components, there is no improvement identified with respect to the "wireless transmitter " beyond known transmitters used in conjunction with sensors to obtain and format data for radio frequency transmission in a packet radio communications network (as evidenced in the prior art claim charts included in these responses).
one or more additional wireless transmitters each electrically interfaced with a sensor and configured	*Id.* With regard to the components, there is no improvement identified with respect to the "one or more additional wireless transmitter " beyond known

to receive the RF signal and retransmit the RF signal;	transmitters used in conjunction with sensors to obtain and format data for radio frequency transmission in a packet radio communications network, including repeater functions (as evidenced in the prior art claim charts included in these responses).
at least one gateway connected a wide area network (WAN) configured to receive and translate the retransmitted RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "gateway" that receives information from remote sensors and translates that information to a computer over a WAN (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Nor is the gateway as claimed performing any functions beyond what was already recognized in generic packet radio communications including the ability to translate data signals using protocols that permit WAN communication, and obtaining information on the transceivers used in obtaining the data, which is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	*Id.* With regard to the components, there is no improvement identified with respect to the "computer" beyond known computers used in conjunction with remote sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the computer, including being "configured to execute at least one computer program," that "formats and stores select information for retrieval upon demand" represent nothing significantly more than the

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	procedures well-known for remote device sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
6. The system of claim 5, wherein the at least one gateway is permanently connected to the WAN.	The above reasons for claim 5 are hereby incorporated by reference. *Id.* This claimed limitation that the gateway be "permanently" connected to the WAN is not directed to any particular improvement over the types of connections known in the art – whether wireless or hard wired.
8. The system of claim 5, wherein the gateway translates the encoded electrical signal, the transmitter identification and the transceiver identification information into TCP/IP for communication over the WAN.	The above reasons for claim 5 are hereby incorporated by reference. *Id.* This claim limitation that the gateway translates the encoded electrical signal, and the identification of the transmitter and transceiver that repeated the message for delivery via TCP/IP protocol provides nothing significant beyond the capabilities of gateways known in the art of packet radio networks (as evidenced by the prior art claim charts included in these responses).
9. A system for controlling a remote device comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for remote data collection, assembly, storage, and event detection beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "remote device," "wireless transmitter," "gateway" and "computer") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect

	to the structures of the "remote device," "wireless transmitter," "gateway" and "computer." Instead, the claimed components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to packet radio networks and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any collection of remote devices, wireless transmitters, a gateway and a computer with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transmitters. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic computer, gateway and series of transmitters for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is

	patent ineligible under §101.
a target remote device having an actuator to be controlled;	*Id.* With regard to the components, there is no improvement identified with respect to the "remote device having an actuator" beyond known remote devices that have actuators and are used in conjunction with remote sensing and control (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	*Id.* With regard to the components, there is no improvement identified with respect to the "computer" beyond known computers used in conjunction with remote sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the computer, including being "configured to execute at least one computer program," that "generates at least one control signal" represent nothing significantly more than the systems well-known for remote device sensing and control (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Moreover, the integration of such remote sensing and control with WANs was also known in the art of packet radio networks (as evidenced by the prior art claim charts included in these responses), and there is nothing significantly different between the claimed computer and those used routinely in packet radio networks.
a gateway connected to the WAN configured to receive and translate the at least one control signal	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "gateway" that receives information from remote sensors and translates that information to a computer over a WAN (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Nor is the gateway as claimed performing any functions beyond what was already recognized in generic packet radio communications including the ability to translate data signals using protocols that permit WAN communication, and obtaining information

	on the transceivers used in obtaining the data, which is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
a wireless transmitter coupled with the gateway for transmitting a wireless signal that contains the control signal;	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "gateway" that receives a control signal from a computer connected via a WAN, and translating that signal into a wireless signal for transmission into a packet radio communications network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
a first wireless transceiver electrically interfaced with an actuator for receiving the wireless signal and further retransmitting the wireless signal to the target remote device; and	*Id.* With regard to the components, there is no improvement identified with respect to the "wireless transceiver " beyond known transceivers (whether associated with an actuator or sensor) used to repeat messages through a packet radio communications network (as evidenced in the prior art claim charts included in these responses).
logic coupled to the target remote device for extracting the control signal from the retransmitted wireless signal and imparting an action on the actuator in response to the extracted control signal.	*Id.* With regard to the components, there is no improvement identified with respect to the "logic coupled to the target device" beyond known software/firmware/hardware for imparting a response from the actuator (as evidenced in the prior art claim charts included in these responses).
10. The system of claim 9, further comprising:	The above reasons for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each	*Id.* With regard to the components, there is no improvement identified with

coupled to an actuator and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	respect to the structures of the "plurality of additional wireless transceivers" beyond well known reception and retransmission communications capability via packet radio networks. Thus, the claim language is ubiquitous to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses) and is nothing more than abstraction of a generic radio communication.
11. The system of claim 9, further comprising:	The above reasons for claim 9 are hereby incorporated by reference.
a plurality of additional wireless transceivers each coupled to an actuator or a sensor and configured to receive the wireless signal and to retransmit the wireless signal, wherein one of the plurality of additional wireless transceivers receive the wireless signal from the wireless transmitter and another one of the plurality of the additional wireless transceivers retransmits the wireless signal to the first wireless transceiver.	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "plurality of additional wireless transceivers" beyond well known reception and retransmission communications capability via packet radio networks. Thus, the claim language is ubiquitous to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses) and is nothing more than abstraction of a generic radio communication.
12. A system for remote data collection, assembly, storage, and event detection and reporting, comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for remote data collection, assembly, storage, and event detection beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "computer," "plurality of non-earth orbiting transceivers," and a "gateway") to

	communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "computer," "plurality of non-earth orbiting transceivers," and a "gateway." Instead, the claimed components simply communicate data in a manner well known in packet radio communications. Thus, the claim language is ubiquitous to computers and transceivers and is nothing more than abstraction of a generic radio communication whereby a central computer obtains information from remote devices via a gateway. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any computer, a gateway, and any collection of transceivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and

	transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	*Id.* With regard to the components, there is no improvement identified with respect to the "computer" beyond known computers used in conjunction with remote sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the computer, including being "configured to format and store select information," and its "retrieval upon demand" from a remote device represent nothing significantly more than the systems well-known for remote device sensing and control (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Moreover, the integration of such remote sensing and control with WANs was also known in the art of packet radio networks (as evidenced by the prior art claim charts included in these responses), and there is nothing significantly different between the claimed computer and those used routinely in packet radio networks.
a plurality of non-earth orbiting transceivers dispersed geographically at defined locations, each transceiver electrically interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "plurality of non-earth orbiting transceivers" beyond well known reception and retransmission communications capability via packet radio networks. Thus, the claim language is ubiquitous to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses) and is nothing more than abstraction of a generic radio communication. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio

identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	communications (as evidenced in the prior art claim charts included in these responses).
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN.	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "at least one gateway" that receives information from remote sensors and translates that information to a computer over a WAN (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Nor is the gateway as claimed performing any functions beyond what was already recognized in generic packet radio communications including the ability to translate data signals using protocols that permit WAN communication, and obtaining information on the transceivers used in obtaining the data, which is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
14. The system as defined claim 12, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for	The above reasons for claim 12 are hereby incorporated by reference. *Id.* This claim limitation that the gateway translates the encoded electrical signal, and the identification of the transmitter and transceiver that repeated the

communication over the WAN.	message for delivery via TCP/IP protocol provides nothing significant beyond the capabilities of gateways known in the art of packet radio networks (as evidenced by the prior art claim charts included in these responses).

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

The '692 Patent – Claim	Reasons for Patent Ineligibility
1. A system for remote data collection, assembly, and storage comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for remote data collection, assembly, storage, and event detection beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "computer," "plurality of transceivers," and "gateway") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "computer" or "plurality of transceivers." Instead, the claimed plurality of transceivers and computer simply communicates data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to computers and transceivers and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any computer and any collection of transceivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication

	well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	*Id.* With regard to the components, there is no improvement identified with respect to the "computer" beyond known computers used in conjunction with remote sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the computer, including being "configured to execute at least one computer program," to "format and store select information for retrieval upon command" represent nothing significantly more than the procedures well-known for remote device sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
at least one wireless transmitter configured to transmit select information and transmitter identification information;	*Id.* With regard to the components, there is no improvement identified with respect to the "wireless transmitter " beyond known transmitters used in conjunction with sensors to obtain and format data for radio frequency

	transmission in a packet radio communications network (as evidenced in the prior art claim charts included in these responses).
a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically at defined locations configured to receive select information transmitted from at least one nearby wireless transmitter and further configured to transmit the select information, the transmitter identification information and transceiver identification information; and	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "plurality of relatively low-power radio frequency (RF) transceivers" or their being configured to receive information from another transmitter, or retransmit information received as is well known in packet radio networks. Thus, the claim language is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
at least one gateway connected to the wide area network configured to receive and translate the select information, the transmitter identification information, and transceiver identification information, said gateway further configured to farther transmit the translated information to the computer over the WAN.	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "gateway" that receives information from remote sensors and translates that information to a computer over a WAN (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Nor is the gateway as claimed performing and functions beyond what was already recognized in generic packet radio communications including the ability to translate data signals using protocols that permits WAN communication and obtaining information on the transceivers used in obtaining the data, which is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
3. The system as defined in claim 1, wherein each wireless transmitter is configured to transmit a relatively low-power, radio-frequency (RF) signal.	The above reasons for claim 1 are hereby incorporated by reference. *Id.* With regard to the claimed functions of the wireless transmitter, there is nothing claimed beyond what is known in the art of packet radio communication (as evidenced in the prior art claim charts included in these responses).
4. The system as defined in claim 1, wherein each wireless transmitter is integrated with a sensor.	The above reasons for claim 1 are hereby incorporated by reference.
5. The system as defined in claim 1, wherein the RF signal transmitted by the transceiver contains a concatenation of information comprising select information and transmitter identification information from the originating transmitter and transceiver identification information for each transceiver that receives and repeats the RF signal.	The above reasons for claim 1 are hereby incorporated by reference. *Id.* Regarding the functionality claimed, there is nothing significantly different with the claimed "concatenation" of information in a packet protocol that includes data, and routing information beyond known packet protocols used in packet radio communications.
6. The system as defined in claim 5, wherein the at least one transmitter is replaced by a transceiver, the transceiver further integrated with an actuator.	The above reasons for claim 5 are hereby incorporated by reference. *Id.* Regarding the components, the claimed transceiver integrated with an actuator does not perform significantly different than transceivers and actuators known and used in packet radio networks (as evidenced in the prior art claim charts included in these responses).

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

7. The system as defined in claim 6, wherein the transceivers are configured to communicate with the gateway via a RF signal.	The above contentions for claim 6 are hereby incorporated by reference. *Id.* With regard to the claimed functions of the transceivers and gateway communicating via RF signal, there is nothing claimed beyond what is already well-known in the art of packet radio communication (as evidenced in the prior art claim charts included in these responses).
8. The system as defined in claim 7, wherein the computer is further configured to respond to received select information by communicating a control signal to at least one transceiver, wherein the actuator integrated with the transceiver is responsive to the control signal.	The above contentions for claim 7 are hereby incorporated by reference. *Id.* With regard to the claimed functions of the computer, namely being configured to respond to received information by communicating a control signal to an actuator is nothing beyond what is already well-known in the art of packet radio communication (as evidenced in the prior art claim charts included in these responses).
11. The system as defined in claim 1, wherein the gateway includes one selected from the group consisting of:	The above contentions for claim 1 are hereby incorporated by reference.
a modem for establishing a dial-up connection with a remote computer; a network card for communicating across a local area network; a network card for communicating across the WAN, a DSL modem; and an ISDN card to permit backup access to the computer.	*Id.* Nothing in this claim provides anything significantly new to the known software, firmware and hardware used in communications gateways.
12. The system as defined in claim 1, wherein the gateway translates the select information, the	The above contentions for claim 1 are hereby incorporated by reference.

transmitter identification, and the transceiver identification information to TCP/IP for communication over the WAN.	
13. The system as defined in claim 1, wherein the WAN is the Internet.	The above reasons for claim 1 are hereby incorporated by reference. *Id.* With respect to the claimed functionality, there is nothing claimed about the use of the Internet as a WAN for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
14. The system as defined in claim 1, wherein the WAN is a dedicated Intranet.	The above reasons for claim 1 are hereby incorporated by reference. With respect to the claimed functionality, there is nothing claimed about the use of a dedicated WAN for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
24. A method for controlling a system comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement in a method for controlling a communications systems for remote data collection. The claim only recites the most basic, general radio networking processes including generic terms (such as, "collecting data from at least one sensor," "processing the data" into a radio-frequency signal, "transmitting the RF signal," "translating the data in the RF signal" and "sending" that data to a computer

	that generates a "control signal" in response, and sends it back through the gateway to actuator adds nothing significant to well-recognized methods in the prior art. The claimed steps do not provide "significantly more" as *Alice* requires. These steps are merely the steps that any network of sensor/actuators would perform in sensing remote data and a central computer, and controlling actuators in response. Further these methods are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks to sense and control devices using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.

remotely collecting data from at least one sensor;	*Id.*
processing the data into a radio-frequency (RF) signal;	*Id.*
transmitting the RF signal, via a relatively low-power transceiver, to a gateway;	*Id.*
translating the data in the RF signal into a network transfer protocol;	*Id.*
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by the at least one sensor by generating an appropriate control signal;	*Id.*
sending the control signal via the network to the gateway,	*Id.*
translating the control signal from a network transfer protocol into an RF control signal;	*Id.*
transmitting the RF control signal;	*Id.*
receiving the RF control signal;	*Id.*
translating the received RF control signal into an analog signal; and	*Id.*
applying the analog signal to an actuator to effect the desired system response.	*Id.*
25. The method of claim 24, wherein the RF signal contains a concatenation of information comprising encoded data information and transmitter identification information from an originating	The above reasons for claim 24 are hereby incorporated by reference. *Id.* Regarding the functionality claimed, there is nothing significantly different with the claimed "concatenation" of information in a packet protocol that

transmitter.	includes data, and routing information beyond known packet protocols used in packet radio communications.
26. The method of claim 25, wherein the step of transmitting the RF signal is further performed by at least one transceiver, wherein the transceiver is configured to concatenate a transceiver identification code to the RF signal.	The above reasons for claim 25 are hereby incorporated by reference. *Id.* Regarding the functionality claimed, there is nothing significantly better with the transceiver than packet radio transceivers known and used in packet radio communication network (as evidenced in the prior art claim charts included in these responses).
27. The method of claim 25, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above reasons for claim 25 are hereby incorporated by reference. *Id.* Regarding the functionality claimed, there is nothing significantly better with the transceiver than packet radio transceivers known and used in packet radio communication network (as evidenced in the prior art claim charts included in these responses).
28. The method of claim 25, wherein the steps of translating and applying the received RF control signal are performed only by an identified transceiver electrically integrated with an actuator.	The above reasons for claim 25 are hereby incorporated by reference. *Id.* Regarding the functionality claimed, there is nothing significantly better with the transceiver than packet radio transceivers known and used in packet radio communication network that are integrated with actuators (as evidenced in the prior art claim charts included in these responses).
29. The method of claim 25, wherein the network is the Internet.	The above reasons for claim 25 are hereby incorporated by reference.

	With respect to the claimed functionality, there is nothing claimed about the use of the Internet for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
30. The method of claim 25, wherein the network is an Intranet.	The above contentions for claim 25 are hereby incorporated by reference. With respect to the claimed functionality, there is nothing claimed about the use of a dedicated WAN for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
31. The method of claim 25, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 25 are hereby incorporated by reference. With respect to the claimed functionality, there is nothing claimed about the use of the Internet protocols for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
32. A system for monitoring remote devices comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance

	communications systems for remote data collection, assembly, storage, and event detection beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "sensor," "computer," "wireless transmitters," and "gateway") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "sensor," "computer," "wireless transmitters," and "gateway." Instead, the components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to packet radio networks and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any computer, gateway, and any collection of transceivers coupled with sensors, with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known

	packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
at least one sensor adapted to generate an electrical signal in response to a physical condition;	*Id.* With respect to the components, there is nothing significantly better about the claimed sensor that generates a signal that is beyond sensors well known in packet radio communication networks (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
at least one wireless transmitter configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a low-power radio-frequency (RF) signal;	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the “sensor,” “computer,” “wireless transmitters,” and “gateway.” Instead, the components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to packet radio networks and is nothing more than abstraction of a generic radio communication.
at least one gateway connected a wide area network (WAN) configured to receive and translate the RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the “sensor,” “computer,” “wireless transmitters,” and “gateway.” Instead, the components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language

identification information to a computer on the WAN; and	is ubiquitous to packet radio networks and is nothing more than abstraction of a generic radio communication.
a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "sensor," "computer," "wireless transmitters," and "gateway." Instead, the components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to packet radio networks and is nothing more than abstraction of a generic radio communication.
34. The system defined in claim 32, wherein each wireless transmitter is configured to transmit a relatively low-power radio-frequency (RF) signal.	The above reasons for claim 32 are hereby incorporated by reference. *Id.* With regard to the claimed functions of the wireless transmitter, there is nothing claimed beyond what is known in the art of packet radio communication (as evidenced in the prior art claim charts included in these responses).
36. The system defined in claim 32, wherein the gateway translates the encoded electrical signal, the transmitter identification, and the transceiver identification information into TCP/IP for communicating over the WAN.	The above reasons for claim 32 are hereby incorporated by reference. *Id.* With respect to the claimed functionality, there is nothing claimed about the use of the Internet protocols for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
37. The system defined in claim 32, wherein the WAN is the Internet.	The above reasons for claim 32 are hereby incorporated by reference.

	Id. With respect to the claimed functionality, there is nothing claimed about the use of the Internet for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
38. The system defined in claim 32, wherein the WAN is a dedicated Intranet.	The above reasons for claim 32 are hereby incorporated by reference. *Id*. With respect to the claimed functionality, there is nothing claimed about the use of a dedicated WAN for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
42. A system for controlling remote devices comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for remote device control beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, “computer,” “plurality of transceivers,” and “gateway”) to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the “computer,” “gateway,” or “transceivers.” Instead, the claimed components simply communicate data in formatted manner well

	known in packet radio communications. Thus, the claim language is ubiquitous to known packet radio networks is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any computer, gateway, and any collection of transceivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.

a computer configured to execute at least one computer program that generates at least one control signal responsive to a system input signal; said computer integrated with a wide area network (WAN);	*Id.* With regard to the components, there is no improvement identified with respect to the "computer" beyond known computers used in conjunction with remote sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the computer, including being "configured to execute at least one computer program," to "format and store select information for retrieval upon command" represent nothing significantly more than the procedures well-known for remote device sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
at least one gateway connected to the WAN configured to receive and translate the at least one control signal; said gateway further configured to transmit a radio-frequency (RF) signal containing the control signal and destination information;	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "gateway" that receives information from remote sensors and translates that information to a computer over a WAN (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Nor is the gateway as claimed performing and functions beyond what was already recognized in generic packet radio communications including the ability to translate data signals using protocols that permits WAN communication and obtaining information on the transceivers used in obtaining the data, which is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
at least one wireless low-power RF transceiver	*Id.* With regard to the components, there is no improvement identified with

configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator; and	respect to the "wireless low-power RF transceiver " beyond known transmitters used in conjunction with gateways translate an output signal into an RF signal and transmit it to a remote actuator (as evidenced in the prior art claim charts included in these responses).
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response.	*Id.* Regarding the components, the claimed actuator does not perform significantly different than actuators known and used in packet radio networks (as evidenced in the prior art claim charts included in these responses).
43. The system defined in claim 42, the system input signal comprising:	The above contentions for claim 42 are hereby incorporated by reference.
a concatenation of information including data from a sensor, transceiver identification information from the originating transceiver, and transceiver identification information for each transceiver that receives and repeats the RF signal.	*Id.* Regarding the structure of the claimed input signal, there is nothing significantly better with the content of the packet over packets known in packet radio communication network (as evidenced in the prior art claim charts included in these responses).
46. The system defined in claim 42, wherein the gateway translates the RF signal and the RF control signal into TC/IP for communication over the WAN.	The above contentions for claim 42 are hereby incorporated by reference. *Id.* With respect to the claimed functionality, there is nothing claimed about the use of the Internet protocols for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
47. The system defined in claim 42, wherein the WAN is the Internet.	The above contentions for claim 42 are hereby incorporated by reference.

	Id. With respect to the claimed functionality, there is nothing claimed about the use of the Internet for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
48. The system defined in claim 42, wherein the WAN is a dedicated Intranet.	The above contentions for claim 42 are hereby incorporated by reference. *Id.* With respect to the claimed functionality, there is nothing claimed about the use of a dedicated WAN for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
49. A system for managing an arrangement of application specific remote devices comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for remote device control beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "computer," "wireless transceivers," "gateway," "sensor," and "actuator") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "computer," "wireless transceivers," "gateway,"

	"sensor," and "actuator." Instead, the claimed components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to known packet radio networks is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any computer, gateway, and any collection of transceivers with sensors and actuators with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.

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a computer configured to execute a multiplicity of computer programs, each computer program executed to generate at least one control signal in response to at least one application system input, said computer integrated with a wide area network (WAN);	*Id.* With regard to the components, there is no improvement identified with respect to the "computer" beyond known computers used in conjunction with remote sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the computer, including being "configured to execute at least one computer program," to "format and store select information for retrieval upon command" represent nothing significantly more than the procedures well-known for remote device sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
at least one gateway connected to the WAN configured as a two-way communication device to receive and translate the at least one control signal and the at least one application system input; said gateway further configured to translate and transmit a radio-frequency (RF) signal containing the control signal and destination information, said gateway further configured to receive and translate the at least one application system input and source information;	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "gateway" that receives information from remote sensors and translates that information to a computer over a WAN (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Nor is the gateway as claimed performing and functions beyond what was already recognized in generic packet radio communications including the ability to translate data signals using protocols that permits WAN communication and obtaining information on the transceivers used in obtaining the data, which is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
at least one wireless relatively low-power RF	*Id.* With regard to the components, there is no improvement identified with

transceiver per computer program configured to receive the RF signal from the gateway; said wireless transceiver configured to translate the RF signal to an analog output signal, the wireless transceiver electrically coupled with an actuator and a sensor;	respect to the "wireless low-power RF transceiver " beyond known transmitters used in conjunction with gateways translate an output signal into an RF signal and transmit it to a remote actuator (as evidenced in the prior art claim charts included in these responses).
an actuator configured to receive the analog output signal from the wireless transceiver, the actuator further configured to translate the analog output signal into a response; and	*Id.* Regarding the components, the claimed actuator does not perform significantly different than actuators known and used in packet radio networks (as evidenced in the prior art claim charts included in these responses).
a sensor configured to translate a physical condition into an analog version of the application system input.	*Id.* Regarding the components, the claimed sensor does not perform significantly different than sensors known and used in packet radio networks (as evidenced in the prior art claim charts included in these responses).
51. The system as defined in claim 49, wherein the at least one gateway translates the RF signal and the RF control signal into TCP/IP for communication over the WAN.	The above contentions for claim 49 are hereby incorporated by reference. *Id.* With respect to the claimed functionality, there is nothing claimed about the use of the Internet protocols for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
52. The system as defined in claim 49, wherein the WAN in the Internet.	The above contentions for claim 49 are hereby incorporated by reference. *Id.* With respect to the claimed functionality, there is nothing claimed about the use of the Internet for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

53. The system as defined in claim 49, wherein the WAN is a dedicated Intranet.	The above contentions for claim 49 are hereby incorporated by reference. *Id*. With respect to the claimed functionality, there is nothing claimed about the use of a dedicated WAN for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
54. The system as defined in claim 49, wherein the at least one gateway is connected to the WAN by a network selected from the group consisting of a telecommunications network, private radio-frequency network, and a computer network.	The above contentions for claim 49 are hereby incorporated by reference. *Id*. With respect to the claimed connectivity, there is nothing claimed about the connections to the WAN for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
55. A method of collecting information and providing data services comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance the methods for collecting information from remote devices beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structures including generic terms (such as, “data translators,” “transmitter,” “transceivers,” “gateway,” and “a WAN”) to communicate using methods admittedly well-recognized in the art.

	With regard to the components, there is no improvement identified with respect to the structures of the "data translators," "transmitter," "transceivers," "gateway," and "a WAN." Instead, the claimed components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to known packet radio networks is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any computer, gateway, a WAN and any collection of a transmitter and transceivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of

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	data networking using packet radio technology. The claim is patent ineligible under §101.
adaptively configuring a data translator at the output of a local controller, wherein the data translator converts the output data stream into an information signal consisting of a transmitter code and an information field;	*Id*. With respect to the claimed functionality, there is nothing claimed about the use of a data translator to convert data into a signal containing identification information for transmitters and transceivers for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
adaptively configuring at least one transmitter with the data translator, wherein the transmitter converts the information signal into a low-power RF signal;	*Id*. With respect to the claimed functionality, there is nothing claimed about the use of a transmitter to convert data into a signal for transmission over a packet radio network that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
placing a plurality of relatively low-power radio-frequency (RF) transceivers dispersed geographically wherein the low power RF signal is received and repeated as required to communicate the information signal to a gateway, the gateway providing access to a WAN;	*Id*. With respect to the claimed plurality of transceivers, there is nothing claimed about the use of such transceivers to transmit and repeat a signal to a gateway/WAN that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).

translating the low-power RF signal within the gateway to a WAN compatible data transfer protocol;	*Id*. With respect to the claimed functionality, there is nothing claimed about the use of a gateway to translate a signal to a WAN-compatible form that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
transferring the translated low-power RF signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in said signal; and	*Id*. With respect to the claimed functionality, there is nothing claimed about the use of a WAN to send data to a computer that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
granting client access to the computer.	*Id*. With respect to the claimed functionality, there is nothing claimed about the grant of client access to the computer that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
56. The method of claim 55 wherein the WAN is the Internet.	The above contentions for claim 55 are hereby incorporated by reference. *Id.* With respect to the claimed functionality, there is nothing claimed about the use of the Internet for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
57. The method of claim 55 wherein the WAN is an	The above contentions for claim 55 are hereby incorporated by reference.

Intranet.	*Id*. With respect to the claimed functionality, there is nothing claimed about the use of a dedicated WAN for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
59. The method of claim 55 wherein the clients access the information using a web browser.	The above contentions for claim 55 are hereby incorporated by reference. *Id*. With respect to the claimed functionality, there is nothing claimed about the use of a web browser that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
60. A method for controlling an existing control system with a local controller comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance the methods for collecting information from remote devices beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structures including generic terms (such as, "data translators," "transceiver," "transceivers," "gateway," and "a WAN") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "data translators," "transmitter," "transceivers," and "gateway." Instead, the claimed components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim

	language is ubiquitous to known packet radio networks is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any computer, gateway, a WAN and any collection of a "data translators," "transceivers," and a "gateway" with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

adaptively configuring a data translator disposed between and in communication with both a local controller and a wireless transceiver, wherein the data translator is configured to translate the local controller data stream into an information signal consisting of a transceiver identification code and a concatenation of function codes, the data translator further configured to translate control signals from the wireless transceiver into local controller recognized control signals;	*Id*. With respect to the claimed functionality, there is nothing claimed about the use of a data translator to convert data into a signal containing identification information for transmitters and transceivers for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
remotely collecting data from the at least one relatively low-powered radio-frequency (RF) transceiver integrated with the data translator;	*Id*. With respect to the claimed functionality, there is nothing claimed about the collection of a data from a transceiver in a packet radio network that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
processing the data into an RF signal;	*Id*. With respect to the claimed functionality, there is nothing claimed about the processing of a data into a RF signal that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
transmitting the RF signal to a gateway;	*Id*. With respect to the claimed functionality, there is nothing claimed about the transmission of the RF signal that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
translating the data in the RF signal into a network transfer protocol;	*Id*. With respect to the claimed functionality, there is nothing claimed about the translating of a data into a RF signal to a network transfer protocol that is

	significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by at least one sensor by generating an appropriate control signal;	*Id*. With respect to the claimed functionality, there is nothing claimed about the sending of the translated data to a computer that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
sending the control signal via the network to the gateway;	*Id*. With respect to the claimed functionality, there is nothing claimed about the sending of a control signal back to the gateway that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
translating the control signal from a network transfer protocol into an RF control signal;	*Id*. With respect to the claimed functionality, there is nothing claimed about the translation of the control signal into an RF signal that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
transmitting the RF control signal;	*Id*. With respect to the claimed functionality, there is nothing claimed about the transmission of the RF control signal that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
receiving the RF control signal;	*Id*. With respect to the claimed functionality, there is nothing claimed about the reception of the RF control signal that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

translating the received RF control signal into a local controller recognized control signal; and	*Id*. With respect to the claimed functionality, there is nothing claimed about the translation of the RF control signal that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
applying the local controller recognized control signal via a local control to effect the desired system response.	*Id*. With respect to the claimed functionality, there is nothing claimed about the applying the control signal to obtain a desired response that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
61. The method of claim 60, wherein the step of transmitting the RF control signal is further performed by at least one transceiver, wherein the transceiver is configured to receive and transmit the RF control signal.	The above contentions for claim 60 are hereby incorporated by reference. *Id*. With respect to the claimed functionality, there is nothing claimed about the transmission of the RF control signal by a receiver configured to receive and transmit RF control signals that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
62. The method of claim 60, wherein the network is the Internet.	The above contentions for claim 60 are hereby incorporated by reference. *Id*. With respect to the claimed functionality, there is nothing claimed about the use of the Internet for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).

63. The method of claim 60, wherein the network is an Intranet.	The above contentions for claim 60 are hereby incorporated by reference. *Id*. With respect to the claimed functionality, there is nothing claimed about the use of a dedicated WAN for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).
64. The method of claim 60, wherein the network transfer protocol is TCP/IP.	The above contentions for claim 60 are hereby incorporated by reference. *Id*. With respect to the claimed functionality, there is nothing claimed about the use of the Internet protocols for integration with packet radio networks that is significantly different or improved over systems known in the art of radio communications (as evidenced by the prior art claim charts included with these responses).

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

The '732 Patent – Claim	Reasons for Patent Ineligibility
1. A system for remote data collection, assembly, storage, event detection and reporting and control, comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for remote data collection, assembly, storage, and event detection beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "computer," "plurality of transceivers," and "gateway") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "computer," "plurality of transceivers," or "gateway." Instead, the claimed plurality of transceivers and computer simply communicates data in formatted manner well known in packet radio communications (as evidenced in the prior art claim charts included in these responses). Thus, the claim language is ubiquitous to computers, transceivers, and gateways, and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any computer, gateway, and any collection of transceivers with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The

	claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a computer configured to execute at least one computer program that formats and stores select information for retrieval upon demand from a remotely located device, said computer integrated with a wide area network (WAN);	*Id.* With regard to the components, there is no improvement identified with respect to the "computer" beyond known computers used in conjunction with remote sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Further, the functionalities claims for the computer, including being "configured to execute at least one computer program," to "format and store select information for retrieval upon command" represent nothing significantly more than the procedures well-known for remote device sensing (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
a plurality of transceivers dispersed geographically at defined locations, each transceiver electrically	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "plurality of transceivers" or their being

interfaced with a sensor and configured to receive select information and identification information transmitted from another nearby wireless transceiver electrically interfaced with a sensor in a predetermined signal type and further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with the transceiver making retransmission;	interfaced with sensors, or capable of performing repeating functions that are well known in packet radio networks. Thus, the claim language is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
at least one gateway connected to the wide area network configured to receive and translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to the computer over the WAN and wherein at least one of said plurality of transceivers is also electrically interfaced with an actuator to control an actuated device.	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "gateway" that receives information from remote sensors and translates that information to a computer over a WAN (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Nor is the gateway as claimed performing any functions beyond what was already recognized in generic packet radio communications. The ability to translate data signals using protocols that permits WAN communication, and obtaining identification information of the transceivers used in obtaining the data, is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). The claim is nothing more than abstraction of a generic radio communication through a network of wireless transceivers. Moreover, the claimed identification information of the various transceivers used in a given packet radio routing is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).

13. In a system comprising a plurality of wireless devices configured for remote wireless communication and comprising a device for monitoring and controlling remote devices, the device comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems for remote data collection, assembly, storage, and event detection beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "transceiver," "controller") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "transceiver" or "sensor." Instead, the claimed combination simply communicates data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to transceivers coupled with sensors, and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any transceiver coupled to any sensor, with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication of sensed data that well-known to those skilled in the art (as evidenced by the

	prior art claim charts included with these responses and the admitted prior art in the Petite patents). Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending sensor signals through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "transceivers" or its being interfaced with a sensor, or capable of performing repeating functions that are well known in packet radio networks. Thus, the claim language is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication through a network of wireless transceivers.
the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the nearby wireless	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "transceiver" being configured to transmit the transceiver identification information for the various transceivers. Such identification information is nothing significantly different from routing

transceiver, and transceiver identification information associated with the transceiver making retransmission; and	protocols and methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
a data controller operatively coupled to the transceiver and the sensor, the data controller configured to control the transceiver and receive data from the sensor, the data controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "data controller" being coupled to the sensor and transceiver, or in transmitting the transceiver identification information for the various transceivers, which are known in the art (as evidenced in the prior art claim charts included in these responses and the admitted prior art). Further, the inclusion of the transceivers' identification information is nothing significantly different from routing protocols and methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
14. The device of claim 13, wherein the data controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The reasons for claim 13 are hereby incorporated by reference. *Id.* With regard to the claimed functionality, there is nothing in the claim that is significantly improved over known data controllers that provide control signals to actuators (as evidenced in the prior art claim charts included in these responses and the admitted prior art).
16. The device of claim 13**,** wherein the data controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The reasons for claim 13 are hereby incorporated by reference. *Id.* With regard to the claimed functionality, there is nothing in the claim that is significantly improved over known data controllers that provide function codes to implement a function (as evidenced in the prior art claim charts included in these responses and the admitted prior art).

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

17. The device of claim 13**,** wherein the data controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code	The reasons for claim 13 are hereby incorporated by reference. *Id.* With regard to the claimed functionality, there is nothing in the claimed data controller's ability to format data packets containing function codes and unique identification codes (as evidenced in the prior art claim charts included in these responses and the admitted prior art).
18. The device of claim 13, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the data controller can implement.	The reasons for claim 13 are hereby incorporated by reference. *Id.* With regard to the claimed structure, there is nothing in the claimed memory that stores functions that is significantly improved over known data controllers used in packet radio communications networks (as evidenced in the prior art claim charts included in these responses and the admitted prior art).
19. The device of claim 13, further comprising an actuator configured to receive command data from the controller and in response implement the command.	The reasons for claim 13 are hereby incorporated by reference. *Id.* With regard to the claimed structure, there is nothing in the claimed actuator that is significantly improved over known actuators, nor is there anything significantly improved in the functionality of receiving command data from the controller to implement a command (as evidenced in the prior art claim charts included in these responses and the admitted prior art).
31. A wireless communication system including wireless communication devices capable of wireless communication, the wireless communication system comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance wireless communications beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "transceiver," "plurality of transceivers," and "gateway") to communicate

	using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "transceiver," "controller," "sensor," and "actuator." Instead, the claimed components are well known and simply communicate sensor data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to packet radio networks and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any transceiver, controller, sensor and actuator with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art of remote sensing and control. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions.

	Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
at least one wireless communication device comprising a transceiver, the transceiver having a unique identification code and being interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from another wireless transceiver in a predetermined signal type;	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "transceiver" being interfaced with a sensor and configured to transmit the transceiver identification information for the various transceivers. Such identification information is nothing significantly different from routing protocols and methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
a controller operatively coupled to the transceiver and the sensor, the controller configured to control transceiver operations and receive data from the sensor, the controller configured to format data packets for transmission via the transceiver with at least some data packets comprising data representative of data sensed with the sensor; and	*Id.* With regard to the components, there is no improvement identified with respect to the structure of the "controller" which is coupled to the sensor and transceiver. Such structures are known (as evidenced in the prior art claim charts included in these responses and the admitted prior art). With regard to the claimed functionality, there is nothing in the claim that is significantly improved over known data controllers that format packets including sensed data (as evidenced in the prior art claim charts included in these responses and the admitted prior art).
wherein the controller is configured to receive control signals from a data packet and based on the control signals send instructions to an actuator to implement a command.	*Id.* With regard to the claimed functionality, there is nothing in the claim that is significantly improved over known data controllers that receive control signals and implement a command via an actuator (as evidenced in the prior art claim charts included in these responses and the admitted prior art).
32. The wireless communication system of claim 31, further comprising at least one gateway connected to a WAN configured to receive and	The reasons for claim 31 are incorporated by reference. Id. With regard to the components, there is no improvement identified with

translate the select information, the identification information associated with the nearby wireless transceiver, and transceiver identification information associated with one or more retransmitting transceivers, said gateway further configured to further transmit the translated information to a computing device over the WAN.	respect to the structure of the "gateway" which is connected to the WAN. Such structures are known (as evidenced in the prior art claim charts included in these responses and the admitted prior art). With regard to the claimed functionality, there is nothing in the claim that is significantly improved over known gateways that receive data packets, and then translate and forward such information to a WAN (as evidenced in the prior art claim charts included in these responses and the admitted prior art).
33. The wireless communication system of claim 31, further comprising a computing device configured to receive user input and based on user input, the computing device formatting control signals, and wherein the controller is configured to receive the control signals via wireless transmission and take action based on the control signals.	The reasons for claim 31 are incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the structure of the "computing device" configured to receive user input and generate control signals. Such a general structure is known (as evidenced in the prior art claim charts included in these responses and the admitted prior art). With regard to the claimed functionality, there is nothing in the claim that is significantly improved over known control computers that control devices by generating signals to a device that implements a function (as evidenced in the prior art claim charts included in these responses and the admitted prior art).
34. The wireless communication system of claim 31, wherein the controller is configured to provide one or more function codes in the data packet in response to data sensed by the sensor.	The reasons for claim 31 are incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the structure of the "controller" other than it is configured to provide function codes user input and generate control signals. However, such a general structure is known (as evidenced in the prior art claim charts included in these responses and the admitted prior art), and the functionalities claimed – i.e., that the controller provides function codes in response to the data sensed – is a known function in packet radio networks (as evidenced in the prior art

	claim charts included in these responses and the admitted prior art).
35. The wireless communication system of claim 31, wherein the controller comprises a memory containing a plurality of function codes specific to the sensor.	The reasons for claim 31 are incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the structure of the controller "memory" which is configured to store programs that are used by the sensor. Such a general structure is known (as evidenced in the prior art claim charts included in these responses and the admitted prior art). With regard to the claimed functionality, there is nothing in the claim that is significantly improved over known controllers that generate signals to a device that implements a function (as evidenced in the prior art claim charts included in these responses and the admitted prior art).

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

The '780 Patent – Claim	Reasons for Patent Ineligibility
1. In a system comprising a plurality of wireless devices, a device comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance wireless communications systems beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "transceiver," "sensor," and "controller") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "transceiver," "sensor," and "controller" Instead, the claimed components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to computers and transceivers and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any "transceiver," "sensor," and "controller" with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a transceiver having a unique identification code and being electrically interfaced with a sensor, the transceiver being configured to receive select information and identification information transmitted from a second wireless transceiver in a predetermined signal type;	*Id.* With regard to the components, there is no improvement identified with respect to the "transceiver" beyond known transceivers (whether associated with an actuator or sensor) used to receive messages through a packet radio communications network (as evidenced in the prior art claim charts included in these responses). The claimed functionality of receiving information and identifier information from other transceivers is not significantly improved over known functions of transceivers used in packet radio communications (as evidenced in the prior art claim charts included in these responses).

the transceiver being further configured to wirelessly retransmit in the predetermined signal type the select information, the identification information associated with the second wireless transceiver, and transceiver identification information associated with the transceiver making retransmission; and	*Id.* With regard to the components, there is no improvement identified with respect to the "transceiver" beyond known transceivers (whether associated with an actuator or sensor) used to repeat messages through a packet radio communications network (as evidenced in the prior art claim charts included in these responses). The claimed functionality of receiving information and identifier information from other transceivers, and retransmitting it, is not significantly improved over known functions of transceivers used in packet radio communications (as evidenced in the prior art claim charts included in these responses).
a controller operatively coupled to the transceiver and the sensor, the controller configured to control the transceiver and receive data from the sensor, the controller configured to format a data packet for transmission via the transceiver, the data packet comprising data representative of data sensed with the sensor.	*Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers (whether associated with an actuator or sensor) used to format data packets for transmission via a transceiver in a radio communications network (as evidenced in the prior art claim charts included in these responses). The claimed functionality of receiving information from a sensor, and converting it to a packet for radio transmission is not significantly improved over known controllers (as evidenced in the prior art claim charts included in these responses).
2. The device of claim 1, wherein the controller is configured to receive data packets comprising control signals and in response to the control signals provide a control signal to an actuator for implementation of a command.	The reasons for claim 1 are incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers (whether associated with an actuator or sensor) used to receive data packets containing control signals and providing a signal to an actuator to implement a command (as evidenced in the prior art claim charts included in these responses).

4. The device of claim 1, wherein the controller is configured to receive data packets comprising a function code, and in response to the function code, implement a function.	The reasons for claim 1 are incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers (whether associated with an actuator or sensor) used to receive data packets containing function codes and implementing a function (as evidenced in the prior art claim charts included in these responses).
5. The device of claim 1, wherein the controller is configured to format data packets for transmission via the transceiver, the data packets comprising a function code corresponding to sensed data and the unique identification code that identifies the transceiver.	The reasons for claim 1 are incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers (whether associated with an actuator or sensor) used to format data packets containing function codes relating to sensed data (as evidenced in the prior art claim charts included in these responses).
6. The device of claim 1, further comprising a memory to store one or more function codes corresponding to the device, the function codes corresponding to a number of functions the controller can implement.	The reasons for claim 1 are incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "memory" beyond known controller memory (whether associated with an actuator or sensor) used to store programming for the implementation of functions (as evidenced in the prior art claim charts included in these responses).
7. The device of claim 1, further comprising an actuator configured to receive command data from the controller and in response implement a command.	The reasons for claim 1 are incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "actuator" beyond known actuators

	used in conjunction with packet radio networks (whether associated with an actuator or sensor).
8. The device of claim 1, wherein the second transceiver is nearby to the transceiver.	The reasons for claim 1 are incorporated by reference. *Id.* With regard to the transceivers, there is nothing claimed that is an improvement to known transceivers used in packet radio networks.

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

The '842 Patent – Claim	Reasons for Patent Ineligibility
1. A device for communicating information, the device comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "transceiver," "interface," and "controller") to communicate using methods admittedly well-recognized in the art of radio communications. With regard to the components, there is no improvement identified with respect to the structures of the "transceiver," "interface," and "controller." Instead, the claimed components simply communicate data in a manner well known in packet radio communications. Thus, the claim language is ubiquitous to transceivers and controllers and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any "transceiver," "interface," and "controller" with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a low-power transceiver configured to wirelessly transmit a signal comprising instruction data for delivery to a network of addressable devices;	*Id.* With regard to the components, there is no improvement identified with respect to the transceiver beyond known transceivers used in a packet radio communications network (as evidenced in the prior art claim charts included in these responses). The claimed functionality of providing "instruction data" to an addressable device is ubiquitous in the art (as evidenced in the prior art claim charts included in these responses).
an interface circuit for communicating with a central location; and	*Id.* With regard to the components, there is no improvement identified with respect to the interface circuit beyond known interface circuits used in a packet radio communications network

	(as evidenced in the prior art claim charts included in these responses). The claimed functionality of communicating with a central location is ubiquitous in the art (as evidenced in the prior art claim charts included in these responses).
a controller coupled to the interface circuit and to the low-power transceiver, the controller configured to establish a communication link between at least one device in the network of addressable devices and the central location using an address included in the signal, the communication link comprising one or more devices in the network of addressable, the controller further configured to receive one or more signals via the low-power transceiver and communicate information contained within the signals to the central location.	*Id.* With regard to the components, there is no improvement identified with respect to the controller beyond known controllers used in a packet radio communications network (as evidenced in the prior art claim charts included in these responses). The claimed functionality of establishing a link with a central location based on addressing used in the signal, and then transmitting the information is ubiquitous in the art of packet radio communications (as evidenced in the prior art claim charts included in these responses).
7. The device of claim 1, wherein the controller is further configured to communicate a transceiver identification code to the central location via the interface circuit.	The reasons in claim 1 are incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the controller beyond known controllers used to transmit the identification information of transceivers in a packet radio communications network (as evidenced in the prior art claim charts included in these responses). The claimed functionality is ubiquitous in the art of packet radio communications (as evidenced in the prior art claim charts included in these responses).
9. The device of claim 1, wherein transmitted and received signals further comprise a field configured to indicate a destination device for a subsequent transmission path to follow.	*Id.* With regard to the claimed functionality, there is no improvement identified with respect to use of destination addresses in a packet radio communications network (as evidenced in the prior art claim charts included in these responses). The claimed functionality is ubiquitous in the art of packet radio communications (as evidenced in the prior art claim

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	charts included in these responses).
16. A device for communicating information, the device comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "transceiver," "processor," and "memory") to communicate using methods admittedly well-recognized in the art of radio communications. With regard to the components, there is no improvement identified with respect to the structures of "transceiver," "processor," and "memory." Instead, the claimed components simply communicate data in a manner well known in packet radio communications. Thus, the claim language is ubiquitous to packet radio communication and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any "transceiver," "processor," and "memory" with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of

	law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a processor; and	
a memory, the memory comprising logical instructions that when executed by the processor are configured to cause the device to:	The reasons for claim 1 are incorporated by reference. *Id.* With regard to the components, there is no improvement identified with respect to the "memory" beyond known processor memory used to store programming for the implementation of functions (as evidenced in the prior art claim charts included in these responses).
wirelessly transmit a signal comprising instruction data for	*Id.* With regard to the claimed functionality, there is no

delivery to a network of addressable low-power transceivers;	improvement identified with respect to the transmission of signals to a network of transceivers beyond known processing of such signals (as evidenced in the prior art claim charts included in these responses).
establish a communication link between at least one low-power transceiver in the network of addressable low-power transceivers and a central location based on an address included in the signal, the communication link comprising one or more low-power transceivers in the network of addressable low-power transceivers; and	*Id.* With regard to the claimed functionality, there is no improvement identified with respect to the establishment of a communication link with an addressed transceiver beyond known repeating of such signals (as evidenced in the prior art claim charts included in these responses).
receive one or more low-power RF signals and communicate information contained within the signals to the central location along with a unique transceiver identification number over the communication link.	*Id.* With regard to the claimed functionality, there is no improvement identified with respect to the communication of information over a wireless network (as evidenced in the prior art claim charts included in these responses).
17. A device for communicating information, the device comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance communications systems beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, “transceiver,” “processor,” and “memory”) to communicate using methods admittedly well-recognized in the art of radio communications. With regard to the components, there is no improvement identified with respect to the structures of “transceiver,” “processor,” and “memory.” Instead, the claimed components simply communicate data in a manner well known in packet radio communications. Thus, the claim language is ubiquitous to packet

	radio communication and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any "transceiver," "processor," and "memory" with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	is patent ineligible under §101.
a low-power transceiver that is configured to wirelessly receive a signal including an instruction data from a remote device;	*Id.* With regard to the components, there is no improvement identified with respect to the "transceiver" beyond known transceivers used in a packet radio communications network (as evidenced in the prior art claim charts included in these responses). The claimed functionality of being configured to receive a wireless signal with instruction signals from a remote device is ubiquitous in the art of packet radio communication (as evidenced in the prior art claim charts included in these responses).
an interface circuit for communicating with a central location;	*Id.* With regard to the components, there is no improvement identified with respect to the "interface circuit" beyond known interface circuits used in a packet radio communications network (as evidenced in the prior art claim charts included in these responses). The claimed functionality of communicating with a central location is ubiquitous in the art (as evidenced in the prior art claim charts included in these responses).
a controller coupled to the interface circuit and to the low-power transceiver, the controller being configured to establish a communication link between the remote device and the central location using address-indicative data included in the signal;	*Id.* With regard to the components, there is no improvement identified with respect to the controller beyond known controllers used in a packet radio communications network (as evidenced in the prior art claim charts included in these responses). The claimed functionality of establishing a link with a central location based on addressing used in the signal, and then transmitting the information is ubiquitous in the art of packet radio communications (as evidenced in the prior art claim charts included in these responses).
the controller further configured to receive one or more data signals from the central location via the interface circuit and communicate information contained within the signals to the remote device.	*Id.* With regard to the claimed functionality of receiving data signals from a central location and communicating those signals with a remote device is ubiquitous in the art of packet radio communications (as evidenced in the prior art claim charts

	included in these responses).

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

The '893 Patent – Claim	Reasons for Patent Ineligibility
1. A system for communicating commands and sensed data between remote devices, the system comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance wireless communications systems beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such as, "transceiver," and "controller") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "transceiver," and "controller" Instead, the claimed components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to transceivers and controllers, and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any "transceiver," and "controller" with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of

	law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "plurality of transceivers" or their having a unique address, which are well known in packet radio networks. Thus, the claim language is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication network of wireless transceivers. Moreover, the claimed preformatted messages are well known in packet radio routing is there is nothing significantly different from routing

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages;	*Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers (whether associated with an actuator or sensor) used to communicate with other transceivers via a radio communications network (as evidenced in the prior art claim charts included in these responses). Moreover, the claimed preformatted messages are well known in packet radio routing is there is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely use scalable addresses of intended recipients (as evidenced in the prior art claim charts included in these responses).
sender address comprising the unique address of the sending transceiver;	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely use sender or source identification (as evidenced in the prior art claim charts included in these responses).
a command indicator comprising a command code;	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely use commands (as evidenced in the prior art claim charts included in these responses).
at least one data value comprising a scalable message; and	*Id.* Regarding the structure of the data packets, the claim

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	provides nothing additional to known packet protocols which routinely include data values that can be scaled (as evidenced in the prior art claim charts included in these responses).
an error detector comprising a redundancy check error detector; and	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely include CRC redundancy checksums (as evidenced in the prior art claim charts included in these responses).
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages.	*Id.* Regarding the structure of the "controller", the claim provides nothing additional to known controllers that are routinely used to format and transmit packets to receivers who respond (as evidenced in the prior art claim charts included in these responses).
2. The system of claim 1, wherein the plurality of transceivers further comprise at least one integrated transceiver, wherein the integrated transceiver comprises:	The reasons for claim 1 are hereby incorporated by reference.
one of the plurality of transceivers; and	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "integrated transceivers", which are well known in packet radio networks(as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Thus, the claim language is ubiquitous and fundamental to nearly any wireless packet radio network and is nothing more than abstraction of a generic radio communication network of wireless transceivers.
a sensor detecting a condition and outputting a sensed data signal to the transceiver.	*Id.*
3. The system of claim 2, wherein the at least one integrated transceiver receives the preformatted command message	*Id.* Regarding the functionality of the integrated transceiver, the claim provides nothing additional to known systems which which

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

requesting sensed data, confirms the receiver address as its own unique address, receives the sensed data signal, formats the sensed data signal into scalable byte segments, determines a number of segments required to contain the sensed data signal, and generates and transmits the preformatted response message comprising at least one packet, wherein the packets are equal to the number of segments.	routinely use integrated transceiver/sensors (as evidenced in the prior art claim charts included in these responses). Moreover, the functionalities claimed including receiving the sensed data signal, formatting the sensed data signal into scalable byte segments, determining a number of segments required to contain the sensed data signal, and generating and transmitting the preformatted response message is not significantly different from known integrated transceivers (as evidenced in the prior art claim charts included in these responses).
10. The system of claim 1, wherein the plurality of transceivers further comprise at least one actuated transceiver, wherein the actuated transceiver comprises:	The above reasons for claim 1 are hereby incorporated by reference.
one of the plurality of transceivers;	*Id.* The claimed structure of integrating a transceiver, a sensor and an actuator provides no significant improvement over known systems and is merely an abstraction of a significant portion of known packet radio communications systems.
a sensor detecting a second condition and outputting a sensed data signal to the transceiver; and	*Id.*
an actuator controlling a third condition and receiving control signals from the transceiver.	*Id.*
17. A system for communicating commands and sensed data between remote devices, the system comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific improvement that would advance wireless communications systems beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking structure including generic terms (such

	as, “transceiver” and “controller”) to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the “transceiver” and “controller” Instead, the claimed components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to computers and transceivers and is nothing more than abstraction of a generic radio communication. The claimed system elements do not provide “significantly more” as *Alice* requires. These elements are merely any “transceiver” and “controller” with no improvements to their structures. Further these elements are known in the art, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers.

	Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.
a plurality of transceivers, each transceiver being in communication with at least one other of the plurality of transceivers, wherein each transceiver has a unique address, wherein the unique address identities an individual transceiver, wherein each transceiver is geographically remote from the other of the plurality of transceivers, wherein each transceiver communicates with the other transceivers via preformatted messages;	*Id.* With regard to the components, there is no improvement identified with respect to the structures of the "plurality of transceivers" or their having a unique address, which are well known in packet radio networks. Thus, the claim language is ubiquitous and fundamental to nearly any wireless packet radio network (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents) and is nothing more than abstraction of a generic radio communication network of wireless transceivers. Moreover, the claimed preformatted messages are well known in packet radio routing is there is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
a controller, connected to one of the plurality of transceivers, the controller being in communications with each of the plurality of transceivers via a controller transceiver, the controller communicating via preformatted messages, wherein the preformatted messages comprises at least one packet, wherein the packet comprises:	*Id.* With regard to the components, there is no improvement identified with respect to the "controller" beyond known controllers (whether associated with an actuator or sensor) used to communicate with other transceivers via a radio communications network (as evidenced in the prior art claim charts included in these responses). Moreover, the claimed preformatted messages

Exhibit P101 – Invalidity Chart for Petite Family Based on 35 U.S.C. § 101 Patent Ineligibility

	are well known in packet radio routing is there is nothing significantly different from routing methods well known in packet radio communications (as evidenced in the prior art claim charts included in these responses).
a receiver address comprising a scalable address of the at least one of the intended receiving transceivers;	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely use scalable addresses of intended recipients (as evidenced in the prior art claim charts included in these responses).
sender address comprising the unique address of the sending transceiver;	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely use sender or source identification (as evidenced in the prior art claim charts included in these responses).
a command indicator comprising a command code;	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely use commands (as evidenced in the prior art claim charts included in these responses).
at least one data value comprising a scalable message; and	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely include data values that can be scaled (as evidenced in the prior art claim charts included in these responses).
an error detector comprising a redundancy check error detector;	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely include CRC redundancy checksums (as evidenced in the prior art claim charts included in these responses).
wherein the controller sends preformatted command messages via the controller transceiver, and the plurality of transceivers send preformatted response messages; and	*Id.* Regarding the structure of the "controller", the claim provides nothing additional to known controllers that are routinely used to format and transmit packets to receivers who respond (as evidenced in the prior art claim charts included in these responses).

wherein at least one of the plurality of transceivers further sends preformatted emergency messages.	*Id.* Regarding the function of sending an emergency message, the claim provides nothing additional to known systems that routinely use emergency messages over packet radio systems (as evidenced in the prior art claim charts included in these responses).
18. The system of claim 17, wherein the controller maintains periods of silence by not sending the preformatted command messages during predetermined time periods; and	The above reasons for claim 17 are incorporated by reference.
wherein the at least one of the plurality of transceivers detects a period of silence and sends the preformatted emergency message during the period of silence.	*Id.* Regarding the function of sending an emergency message, the claim provides nothing additional to known systems that routinely use emergency messages over packet radio systems (as evidenced in the prior art claim charts included in these responses).
37. A method of communicating between geographically remote devices, the method comprising:	The asserted patent claim is patent-ineligible as a matter of law under 35 U.S.C. § 101 of the Patent Act. The claim is not directed to any specific method that would advance wireless communications systems beyond what is already well-established in the art of packet radio communications networks. The claim only recites the most basic, general radio networking functions including generic terms (such as, "transceiver," "sensor," and "controller") to communicate using methods admittedly well-recognized in the art. With regard to the components, there is no improvement identified with respect to the structures of the "transceiver," "sensor," and "controller" Instead, the claimed components simply communicate data in formatted manner well known in packet radio communications. Thus, the claim language is ubiquitous to computers and transceivers and is nothing more than abstraction of a generic radio communication.

	The claimed system elements do not provide "significantly more" as *Alice* requires. These elements are merely any "sending," "receiving," and "processing" with no improvements to their functions. Further these functions are fundamental to packet radio communication, and are admitted prior art and are thus exactly the well-understood, routine, conventional activity described in *Mayo* (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents). Step one of the *Mayo* analysis is clearly satisfied as a matter of law. The claims in this case are directed to an ineligible abstract idea that, if allowed, would result in monopolization of a significant portion of radio communication methodology well-known to those skilled in the art. Plaintiffs should not be allowed to foreclose this broad area with an abstract patent. The elements of the asserted claim also do not pass step two of the *Alice* inquiry because they are all directed to routine, conventional activity for sending radio transmissions through wireless networks using well-known packet radio transceivers. Even in an ordered combination, the claim elements do not pass Section 101 scrutiny because they describe nothing more than a generic controller and transceiver for communicating generic data via packet radio transmissions. Such communications were known in packet radio networks using the same generic components. The core of what the claim is doing is the abstract idea of data networking using packet radio technology. The claim is patent ineligible under §101.

sending a message;	*Id.*
receiving the message at one or more of the remote devices;	*Id.*
processing the message;	*Id.*
preparing a response message;	*Id.*
receiving the response message;	*Id.*
processing the response message	*Id.*
wherein all messages comprise at least one packet, the packet having a predetermined format;	*Id.* The structure of the claimed packet is not an improvement over known packet protocols. As with the claimed functions above, the structure of the claimed packets not significantly different from known protocols used in packet radio communications (as evidenced in the prior art claim charts included in these responses and the admitted prior art in the Petite patents).
wherein the predetermined format comprises:	

a receiver address comprising a scalable address of the at least one of the intended receiving remote devices;	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely use scalable addresses of intended recipients (as evidenced in the prior art claim charts included in these responses).
a sender address comprising an unique address of the sender;	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely use sender or source identification (as evidenced in the prior art claim charts included in these responses).
a command indicator comprising a command code;	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely use commands (as evidenced in the prior art claim charts included in these responses).
a scalable data value comprising a scalable message; and	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely include data values that can be scaled (as evidenced in the prior art claim charts included in these responses).
an error detector that is a redundancy check error detector; and	*Id.* Regarding the structure of the data packets, the claim provides nothing additional to known packet protocols which routinely include CRC redundancy checksums (as evidenced in the prior art claim charts included in these responses).
wherein the steps of sending and receiving are repeated until the message is received by the intended receiver.	Id. The step of repeating known processing steps does not provide any distinction over known packet radio communication methods. It is merely an attempt to patent the abstract notion of communicating via radio communication.