IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

SIPCO, LLC, and IP CO., LLC (d/b/a INTUS IQ),

v.

Civ. No. 1: 16-cv-00830-RGA

Plaintiffs,

STREETLINE, INC., and KAPSCH TRAFFICCOM HOLDING CORP.,

Defendants.

APPENDIX TO

PLAINTIFFS' RESPONSE TO DEFENDANTS'

MOTION TO DISMISS UNDER RULE 12(b)(6) (D.I. 18, 19)

Dated: March 7, 2017

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George Pazuniak DE (No. 478) Sean T. O'Kelly (DE No. 4349) Daniel P. Murray (DE No. 5785) O'Kelly & Ernst, LLC 901 N. Market Street, Suite 1000 Wilmington, Delaware 19801 (302) 478-4230 / 778-4000 (302) 295-2873 (facsimile) gp@del-iplaw.com sokelly@oeblegal.com dmurray@oeblegal.com

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5. The device of claim 2, wherein the remote device is electrically interfaced to a sensor.

6. The device of claim 2, wherein the remote device is electrically interfaced to an actuator.

7. The device of claim 1, wherein the controller is further ⁵ configured to communicate a transceiver identification code to the central location via the interface circuit.

8. The device of claim **1**, wherein transmitted and received signals further comprise a message identification field; a packet identification field; a network field, and a data field. ¹⁰

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.

10. The device of claim **1**, wherein the controller is configured on an integrated circuit and further configured to decode the instruction data and implement an associated instruction that corresponds to at least one of a product code, a user account, and application information.

11. The device of claim 1, wherein the low-power signal $_{20}$ comprises a logical IP address such that the device can route the information to a destination based on the logical IP address.

12. The device of claim **1**, wherein the memory further comprises logical instructions that when executed by the processor are configured to cause the device to communicate a transceiver identification code to the central location.

13. The device of claim 1, wherein transmitted and received signals further comprise a message identification field; a packet identification field; a network field, and a data $_{30}$ field.

14. 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.

15. The device of claim **1**, wherein the memory further comprises logical instructions that when executed by the processor are configured to cause the device to decode the instruction data frame and implement an associated instruc-

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tion that corresponds to at least one of a product code or user account or application information.

16. A device for communicating information, the device comprising:

a processor; and

- a memory, the memory comprising logical instructions that when executed by the processor are configured to cause the device to:
 - wirelessly transmit a signal comprising instruction data for delivery to a network of addressable low-power transceivers;
 - 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
 - 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.

17. A device for communicating information, the device comprising:

- a low-power transceiver that is configured to wirelessly receive a signal including an instruction data from a remote device;
- an interface circuit for communicating with a central location;
- 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 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.

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insert said client in said client link tree if said client is authentic and is not already in said client link tree.10. The wireless network system of claim 7, wherein the client link entries correspond to the server selected transmis-

sion path between the server and the respective client. 11. A method for providing wireless network communication comprising:

- utilizing a server implementing a server process including receiving data packets via RF transmission, sending data packets via RF transmission, communicating with a network, and performing housekeeping functions; and
- utilizing a plurality of clients, each client providing a client process including sending and receiving data packet via RF transmission, maintaining a send/receive data buffer in digital memory, and selecting a transmission path to said server that is one of a direct link to said server and an indirect link to said server through at least one of the remainder of said plurality of clients,

wherein the server process:

- receives information identifying the selected transmission path from each of the plurality of clients,
- determines a server selected transmission path for each of the plurality of clients based on the selected transmission paths received from the plurality of clients,
- sends information identifying the server selected transmission path for each of the clients to the respective clients; and
- maintains a client link tree having client link entries representing each of the plurality of clients.

12. A method for providing wireless network communica- 30 tion comprising:

- utilizing a server implementing a server process including receiving data packets via RF transmission, sending data packets via RF transmission, communicating with a network, and performing housekeeping functions; and 35
- utilizing a plurality of clients, each client providing a client process including sending and receiving data packet via RF transmission, maintaining a send/receive data buffer in digital memory, and selecting a transmission path to said server that is one of a direct link to said server and 40 an indirect link to said server through at least one of the remainder of said plurality of clients,
- wherein said server process further includes maintaining a client link tree having client link entries representing each of the plurality of clients, and 45

wherein the server process:

- receives information identifying the selected transmission path from each of the plurality of clients,
- determines a server selected transmission path for each of the plurality of clients based on the selected trans- 50 mission paths received from the plurality of clients,
- updates the client link entries to provide the server selected transmission path, and
- sends information identifying the server selected transmission path for each of the clients to the respective 55 clients.

13. A method as recited in claim 12, wherein said server process further includes:

comparing a selected link from said client to said server to a current client link entry in said client link tree; and updating said client link tree when said comparison meets predetermined conditions.

14. A method as recited m claim 12, wherein said server process further includes:

determining is said client is authentic;

deleting said client from said client link tree if said client is authentic and is already in said client link tree; and

inserting said client in said client link tree if said client is authentic and is not already in said client link tree.

15. The method of claim **12**, wherein the client link entries correspond to the server selected transmission path between the server and the respective client.

16. A method for providing wireless network communication comprising the steps of:

- a server process including a data packet reception step, a data packet transmission step, a network communication step, and a housekeeping step; and
- a plurality of clients each providing a client process including a data sending and receiving step, a send and receive data buffer maintenance step, and a transmission path selection step wherein the transmission path is one of a direct link to a server and an indirect link to said server through at least one of the remainder of said plurality of clients,

wherein the server process:

- receives information identifying the selected transmission path from each of the plurality of clients,
- determines a server selected transmission path for each of the plurality of clients based on the selected transmission paths received from the plurality of clients,
- sends information identifying the server selected transmission path for each of the clients to the respective clients; and
- maintains a client link tree having client link entries representing each of the plurality of clients.

17. A method for providing wireless network communication comprising the steps of:

- a server process including a data packet reception step, a data packet transmission step, a network communication step, and a housekeeping step; and
- a plurality of clients each providing a client process including a data sending and receiving step, a send and receive data buffer maintenance step, and a link selection step wherein the transmission path is one of a direct link to a server and an indirect link to said server through at least one of the remainder of said plurality of clients,
- wherein said server process further comprises the step of maintaining a client link tree having client link entries representing each of the plurality of clients, and

wherein the server process:

- receives information identifying the selected transmission path from each of the plurality of clients,
- determines a server selected transmission path for each of the plurality of clients based on the selected transmission paths received from the plurality of clients,
- updates the client link entries to provide the server selected transmission path, and
- sends information identifying the server selected transmission path for each of the clients to the respective clients.

18. A method as recited m claim **17**, wherein said server process further comprises the steps of:

- comparing a selected link from said client to said server to a current client link entry in said client link tree; and
- updating said client link tree when said comparison meets predetermined conditions.

19. A method as recited in claim **17**, wherein said server process further comprises steps of:

determining if said client is authentic;

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deleting said client from said client link tree if said client is authentic and is already in said client link tree; and inserting said client into said client link tree if said client is

authentic and is not already in said client link tree. 20. The method of claim 17, wherein the client link entries ⁵ correspond to the server selected transmission path between the server and the respective client.

21. A wireless network system comprising:

a first node including a first node controller and a first node radio modem, said first node controller implementing a first node process that includes controlling of said first node radio modem, said first node process including receiving and transmitting data packets via said first node radio modem;

a plurality of second nodes each including a second node controller implementing a second node process that includes controlling a second node radio modem, said second node process including receiving and transmitting data packets via said second node radio modem, 20 wherein said second node process of each of said second nodes includes initiating a radio transmission path to said first node that is a link to said first node through at least one of the remainder of said plurality of second nodes, 25

wherein said first node process dynamically updates a second node link tree comprising second node link entries representing each of the plurality of second nodes and dynamically modifies the second node link tree so that the data packet transmission path to the first node is 30 optimized.

22. A wireless network system as recited in claim 21, wherein at least one of the second nodes is a mobile device and said first node process further comprises:

- logic comparing a selected link from one of the plurality of 33 said second nodes to said first node to a current second node link entry in said second node link tree; and
- logic dynamically updating said second node link tree when said comparison meets predetermined conditions.

23. A wireless network system as recited in claim **21**, 40 wherein said first node process further comprises:

- logic determining if one of the plurality of said second nodes is authentic;
- logic determining if one of the plurality of said second nodes is already in said second node link tree if one of 45 the plurality of said second nodes is determined to be authentic; and
- logic inserting one of the plurality of said second nodes in said second node link tree if one of the plurality of said second nodes is authentic and is not already in said 50 second node link tree.

24. In a wireless system comprising a plurality of second nodes, each second node implementing a second node process including sending and receiving data packet via a second node wireless radio, maintaining a send/receive data buffer in 55 a digital memory, and selecting a link to a first node that is one of a direct link to said first node and an indirect link to said first node through at least one of the remainder of said plurality of second nodes, a first node configured to implement a first node process, the first node process including: 60

receiving data packets via a first node wireless radio; sending data packets via said wireless radio; communicating with a network; performing node link tree housekeeping functions;

maintaining a second node link tree having second node 65

- dynamically updating the tree to reflect the current operational status of the second nodes; and
- rerouting data packets around inactive or malfunctioning second nodes.

25. The first node of claim **24**, wherein the first node process further includes:

- comparing a selected link from one of the plurality of said second nodes to said first node to a current second node link entry in said second node link tree; and
- dynamically updating said second node link tree when said comparison meets predetermined conditions.

26. The first node of claim 24, wherein the first node process further includes:

- determining if one of the plurality of said second nodes is authentic;
- determining if one of the plurality of said second nodes is already in said second node link tree if one of the plurality of said second nodes is determined to be authentic;
- deleting one of the plurality of said second nodes from said second node link tree if one of the plurality of said second nodes is authentic and is already in said second node link tree; and
- inserting one of the plurality of said second nodes in said second node link tree if said second node is authentic and is not already in said client link tree.

27. In a wireless system comprising a plurality of second nodes and a first node configured to implement a first node process, the first node process including receiving data packets via a first node wireless radio, sending data packets via said wireless radio, communicating with a network, performing node link tree housekeeping functions, maintaining a second node link tree having second node link entries representing each of the plurality of second nodes, dynamically updating the tree to reflect the current operational status of the second nodes, and rerouting data packets around inactive or malfunctioning second nodes, a second node in the plurality of second nodes, the second node configured to implement a second node process including:

- sending and receiving data packet via a second node wireless radio;
- maintaining a send/receive data buffer in a digital memory; and

selecting a link to the first node that is one of a direct link to the first node and an indirect link to the first node through at least one of the remainder of the plurality of second nodes.

28. A method for providing wireless network communication comprising:

- utilizing a first node process including a data packet reception step, a data packet transmission step, a network communication step, and a housekeeping step; and
- utilizing a plurality of second nodes, each providing a second node process including a data sending and receiving step, a send and receive data buffer maintenance step, and a link selection step that selects one of a direct link to said first node and an indirect link to said first node through at least one of the remainder of said plurality of second nodes; and
- utilizing the least number of other second nodes to provide the selected link so that the transmission path from one of the plurality of said second nodes to said first node is optimized,
- wherein the first node process further includes maintaining a second node link tree having second node link entries representing each of the plurality of second nodes.

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15. A method as recited in claim **14**, wherein said server process further comprises the steps of:

comparing a selected link from said client to said server to a current client link entry in said client link tree; and

updating said client link tree when said comparison meets 5 predetermined conditions.

16. A method as recited in claim **15**, wherein said server process further comprises steps of: determining if said client is authentic;

- determining if said client is already in said client link tree 10 if client is determined to be authentic;
- deleting said client from said client link tree if said client is already in said client link tree; and
- inserting said client into said client link tree if said client is authentic.

17. A wireless network system comprising:

- a first node including a first node controller and a first node radio modem, said first node controller implementing a first node process that includes controlling of said first node radio modem, said first node process including receiving and transmitting data packets via said first node radio modem;
- a plurality of second nodes each including a second node controller implementing a second node process that includes controlling a second node radio modem, said second node process including receiving and transmitting data packets via said second node radio modem, wherein said second node process of each of said second nodes includes initiating a radio transmission path to said first node that is a link to said first node through at least one of the remainder of said plurality of second nodes; and
- wherein said first node process dynamically updates a second node link tree comprising second node link entries and dynamically modifies the second node link tree so that the data packet transmission from the first node is optimized.

18. A wireless network system as recited in claim 17,

wherein at least one of the second nodes is a mobile device and said first node process further comprises: 40

- logic comparing a selected link from one of the plurality of said second nodes to said first node to a current second node link entry in said second node link tree; and
- logic dynamically updating said second node link tree when said comparison meets predetermined conditions. 45

19. A wireless network system as recited in claim **18** wherein said first node process further comprises:

- logic determining if one of the plurality of said second nodes is authentic;
- logic determining if one of the plurality of said second 50 tion comprising: nodes is already in said second node link tree if one of the plurality of said second nodes is determined to be authentic; and work comm
- logic inserting one of the plurality of said second nodes in said second node link tree if one of the plurality of said 55 second nodes is authentic and is not already in said second node link tree.
- **20**. A wireless system comprising:
- a first node implementing a first node process including receiving data packets via a first node wireless radio, 60 sending data packets via said wireless radio, communicating with a network, and performing node link tree housekeeping functions;
- a plurality of second nodes, each second node implementing a second node process including sending and receiv- 65

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and selecting a link to said first node that is one of a direct link to said first node and an indirect link to said first node through at least one of the remainder of said plurality of second nodes; and

the first node process further comprises maintaining a second node link tree having second node link entries, dynamically updating the tree to reflect the current operational status of the nodes, and rerouting data packets around inactive or malfunctioning nodes.

21. A wireless system as recited in claim 20, wherein the first node process further comprises:

- logic comparing a selected link from one of the plurality of said second nodes to said first node to a current second node link entry in said second node link tree; and
- logic dynamically updating said second node link tree when said comparison meets predetermined conditions.

22. A wireless system as recited in claim 21, wherein the first node process further includes:

- logic determining if one of the plurality of said second nodes is authentic;
- logic determining if one of the plurality of said second nodes is already in said second node link tree if one of the plurality of said second nodes is determined to be authentic;
- logic deleting one of the plurality of said second nodes from said second node link tree if one of the plurality of said second nodes is already in said second node link tree; and
- logic inserting one of the plurality of said second nodes in said second node link tree if said second node is authentic.

23. A method for providing wireless network communication comprising:

- providing a first node process including a data packet reception step, a data packet transmission step, a network communication step, and a housekeeping step; and
- providing a plurality of second nodes, each providing a second node process including a data sending and receiving step, a send and receive data buffer maintenance step, a link selection step that selects one of a direct link to said first node and an indirect link to said first node through at least one of the remainder of said plurality of second nodes; and a pooning step; and
- utilizing the least number of other second nodes to provide the selected link so that the transmission path from one of the plurality of said second nodes to said first node is optimized.

24. A method for providing wireless network communication comprising:

- providing a first node process including a data packet reception step, a data packet transmission step, a network communication step, and a housekeeping step; and
- providing a plurality of second nodes, each providing a second node process including a data sending and receiving step, a send and receive data buffer maintenance step, and a link selection step that selects one of a direct link to said first node and an indirect link to said first node through at least one of the remainder of said plurality of second nodes by analyzing the link between neighboring second nodes and the first node through a pooning process; and
- wherein said first node process further comprises the step of dynamically updating a second node link tree having a second node link entries.

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