73. The word "flow" was correspondingly added three times in the claim for the functional limitations. As shown above, the inclusion of "flow" was a deliberate choice, added for the first time in the claims in this amendment.

74. The addition of "for the purpose of drawing DC current" provides an intended use for the path, namely, to draw DC current.

75. "Flow" was added to the existing word "current" to impart a different meaning than merely "for the purpose of drawing DC current." It connotes that current is actually flowing.

76. This is further confirmed by the context in which the term "current flow" is used. Consistent with the earlier explications of the need to use the path to draw current in accordance with the asserted invention, the Ethernet terminal equipment was amended "to draw different magnitudes of DC current flow," different magnitudes of current flow "result from at least one condition applied," and further that at least one of the magnitudes of DC current flow to convey information."

77. The changes from "to draw current" to "to draw different magnitudes of DC current flow," from "current comprises information" to "DC current flow to convey information," and the addition of "at least one condition applied" all confirm that specific actions are required by the claims.

DISPUTED PHRASES

(A) The Use of the Infinitive "To ___"

78. The following phrases in the asserted claims of the Patents-in-Suit use the infinitive "to ___": "to draw different magnitudes of DC current flow"; "to detect at least two different magnitudes of the current flow"; "to detect current flow"; "to detect different magnitudes of DC current flow"; "to detect distinguishing information within

the DC current"; "to distinguish one end device from at least one other end device"; "to distinguish one network object from at least one other network object"; "to distinguish the piece of Ethernet terminal equipment from at least one other piece of Ethernet terminal equipment"; "to distinguish the powered-off end device from at least one other end device"; "to distinguish the piece of BaseT Ethernet terminal equipment from at least one other piece of BaseT Ethernet terminal equipment"; "to control application of at least one electrical condition"; "to control application of the at least one DC power signal"; "to convey information about the piece of Ethernet terminal equipment"; "to convey information about the powered-off end device"; "to provide at least one DC current"; and "to result from at least one condition applied to."

79. The prosecution history of the '107 patent demonstrates that the use of "to ___" for these limitations and "current flow" (as opposed to "current") in the claims of the '107 patent and continuation '838 and '760 patents requires that the functional acts must be performed, as opposed to only being capable of being performed.

80. The asserted independent claims of the '107, '760, and '838 patents are reproduced below with the infinitive "to ____" clauses shown below in italics for context.

> 1. A piece of Ethernet terminal equipment comprising:
>
> an Ethernet connector comprising first and second pairs of contacts used to carry Ethernet communication signals,
>
> at least one path for the purpose of drawing DC current, the at least one path coupled across at least one of the contacts of the first pair of contacts and at least one of the contacts of the second pair of contacts,
>
> the piece of Ethernet terminal equipment *to draw different magnitudes of DC current flow via the at least one path,* the different magnitudes of DC current flow *to result from at least one condition applied to at least one of the contacts of the first and second pairs of contacts,*
>
> wherein at least one of the magnitudes of the DC current flow *to convey information about the piece of Ethernet terminal equipment.*
>
> 104. A powered-off end device comprising:
>
> an Ethernet connector comprising first and second pairs of contacts,
>
> at least one path for the purpose of drawing DC current, the at least one path coupled across at least one of the contacts of the first pair of contacts and at least one of the contacts of the second pair of contacts,
>
> the powered-off end device *to draw different magnitudes of DC current flow via*

the at least one path,

the different magnitudes of DC current flow *to result from at least one condition applied to at least one of the contacts of the first and second pairs of contacts*,

wherein at least one of the magnitudes of the DC current flow *to convey information about the powered-off end device*.

'107 patent, claims 1, 104.

1. A BaseT Ethernet system comprising:

a piece of central BaseT Ethernet equipment;

a piece of BaseT Ethernet terminal equipment;

data signaling pairs of conductors comprising first and second pairs used to carry BaseT Ethernet communication signals between the piece of central BaseT Ethernet equipment and the piece of BaseT Ethernet terminal equipment,

the first and second pairs physically connect between the piece of BaseT Ethernet terminal equipment and the piece of central BaseT Ethernet equipment,

the piece of central BaseT Ethernet equipment having at least one DC supply,

the piece of BaseT Ethernet terminal equipment having at least one path *to draw different magnitudes of current flow* from the at least one DC supply through a loop formed over at least one of the conductors of the first pair and at least one of the conductors of the second pair,

the piece of central BaseT Ethernet equipment *to detect at least two different magnitudes of the current flow through the loop* and *to control the application of at least one electrical condition to at least two of the conductors*.

73. A BaseT Ethernet system comprising:

Ethernet cabling having at least first and second individual pairs of conductors used to carry BaseT Ethernet communication signals, the at least first and second individual pairs of conductors physically connect between a piece of BaseT Ethernet terminal equipment and a piece of central network equipment;

the piece of central network equipment having at least one DC supply,

the piece of BaseT Ethernet terminal equipment having at least one path *to draw different magnitudes of current flow* via the at least one DC supply through a loop formed over at least one of the conductors of the first pair of conductors and at least one of the conductors of the second pair of conductors, the piece of central network equipment *to detect at least two different magnitudes of current flow through the loop*.

'760 patent, claims 1, 73.

1. A central piece of network equipment comprising:

at least one Ethernet connector comprising first and second pairs of contacts used to carry BaseT Ethernet communication signals; and

the central piece of network equipment *to detect different magnitudes of DC current flow via at least one of the contacts of the first and second pairs of contacts* and

to control application of at least one electrical condition to at least one of the contacts of the first and second pairs of contacts in response to at least one of the magnitudes of the DC current flow.

'838 patent, claim 1

81. The infinitive "to ___" is used in the claims shown above to identify the function to be performed by the claimed Ethernet terminal equipment, end device, and central piece of network equipment.

82. Mr. Baxter concedes that these clauses specify a function. Baxter Decl. at ¶ 16. Mr. Baxter also concedes that "current" and "current flow" do not constitute structure in the claims. Baxter Decl. at ¶ 64.

83. I agree with Mr. Baxter to the extent that the claim language "at least one path coupled across [claimed contacts] for the purpose of drawing DC current" alone does not require current to be flowing through the path. *Id*. The "path coupled across" and related limitations provide the claimed structure necessary for current flow.

84. However, Mr. Baxter is incorrect that "claim 1 merely requires a path that is configured to draw DC current." Baxter Decl. at ¶ 65.

85. With respect to claim 1 (then pending claim 72) of the '107 patent, Applicants' remarks to overcome the cited Blair and Davis prior references twice explained that the claims as amended allegedly overcame the prior art because "although Davis et al. not usage of an Ethernet network, Davis at al. are completely silent with regard to *using* the at least one path coupled across contacts to carry Ethernet communication signals, and *to draw current* via the at least one path coupled across the recited contacts …." '107 Prosecution History at 1066-67 (CMS050950–51) By both amending the claim to require action and arguing that that action (the drawing of current) was not present in the cited prior art, the applicants made it clear that actual current (current flow) was required in the claim.

86. Applicants further amendment of claim 72 adding the requirement that the current results from a condition applied and the addition of the word "flow" after "current" for all the functional claim limitations further clarifies that performance of the actions is required. The addition of the word "flow" was deliberate and suggests a

different meaning for "current" and "current flow." Specifically, "current flow" is suggesting that the current is actually flowing.

87. Applicants also amended the claims to add "for the purpose of drawing DC current" for the path. Where applicants wanted to assert an intended use or capability to perform an action, for example, they drafted the claim language accordingly. Mr. Baxter does not suggest any change in the configuration or design of the path to allow it to do the rudimentary task of "drawing DC current"

88. In view of the remarks in the prosecution history, amendment of the claims to add "flow," and functional limitations being tied to the claimed device itself, Applicants make it clear that the infinitive phrases "to ____" should be interpreted to require that the specified functional limitations are actually performed.

89. For example, claim 1 of the '107 patent (then pending claim 72) was amended to add specific functional limitations tied to actions that would only occur when current is present:

> 72. (Currently amended) ~~An identifiable~~ A piece of Ethernet terminal equipment comprising:
>
> an Ethernet connector comprising first and second pairs of contacts used to carry Ethernet communication signals, at least one path for the purpose of drawing DC current, the at least one path coupled across at least one of the contacts of the first pair of contacts and at least one of the contacts of the second pair of contacts, the piece of Ethernet terminal equipment to draw different magnitudes of DC current flow via the at least one path, the different magnitudes of DC current flow to result from at least one condition applied to at least one of the contacts of the first and second pairs of contacts, wherein at least one of the magnitudes of the DC current flow to convey ~~comprises~~ information ~~to identify~~ about the piece of Ethernet terminal equipment ~~as a particular piece of Ethernet terminal equipment~~.

'107 Prosecution History at 1151 (CMS051035).

90. This claim is directed to Ethernet terminal equipment comprising structural limitations provided by the Ethernet connector and path coupled across the claimed contacts of the Ethernet connector. This path already has the ability to draw DC current as evidenced by its intended use.

91. The remainder of the limitations recite what actions the clamed Ethernet terminal equipment must do with that structure. Specifically, while the structure is already provided for drawing DC current via the path coupled across, the acts of drawing different magnitudes of DC current due to a condition applied and in which one magnitude conveys information about the Ethernet terminal equipment must occur.

92. Mr. Baxter asserts that each instance of "to __" be construed to read in "configured to" or "designed to" perform the function recited in the claim. Baxter Decl. at ¶ 16. In doing so, he is merely rewriting the claims to suit his needs. Had this been the intent, the drafter of the claims could easily have used the appropriate language.

93. Mr. Baxter's interpretation renders "the piece of Ethernet terminal equipment to draw different magnitudes of DC current flow via the at least one path, the different magnitudes of DC current flow to result from at least one condition applied to at least one of the contacts of the first and second pairs of contacts, wherein at least one of the magnitudes of the DC current flow to convey information about the piece of Ethernet terminal equipment" superfluous.

94. One of ordinary skill in the art would know that the "path coupled across" inherently possesses the ability to draw DC current (including different magnitudes of DC current) when connected, to have the magnitude of DC current measured, and to be affected in accordance Ohm's law. Ethernet terminal equipment already including the path coupled across does not add any further configuration or design already present in the path itself.

95. The functions were provided overcome the prior art without imparting any additional structure to the claim, "flow" was added, and the remarks by the Applicant make it clear that "to ____" requires the actions to be performed.

(B) Current / Current Flow

96. Mr. Baxter and I agree regarding the definition of "current" as a flow of electrons (or electric charge). We also agree that the use of "current" and "current flow" in the patents generally refers to direct current (DC), as opposed to alternating current (AC). Baxter Decl. at ¶¶ 57, 59.

97. Mr. Baxter asserts that "current" and "current flow" mean the same thing. Baxter Decl. at ¶ 57. His argument is that because "current" and "current flow" are both preceded by "DC," they are both "being used in connection with direct current." Baxter Decl. at ¶¶ 61-63. I agree that "current" and "current flow" both refer to direct current (DC) in the asserted claims.

98. However, from the fact that both "current" and "current flow" are preceded by DC as a modifier, Mr. Baxter wrongly concludes: "Thus, a person of ordinary skill in the art would understand that the terms 'current' and 'current flow' to mean the same thing in the context of the claims, namely a flow of electric charge." Baxter Decl. at ¶ 63. Mr. Baxter's conclusion does not logically follow and fails to consider the manner in which "flow" was added in the prosecution history.

99. As noted above, "flow" was deliberately introduced in the claims, which previously only mentioned "current." This addition was made to distinguish the functional limitations (i.e., the actions) that the Ethernet terminal device/end device must perform from the structural limitations (i.e., the Ethernet connector and the path). In this respect, "current flow" connotes that current is actually flowing to satisfy the claim limitation.

100. For example, in contrast with the path's structure having an intended use "for the purpose of drawing DC current," the applicants specifically amended their claims to require that the piece of Ethernet terminal equipment draw different magnitudes of DC current flow via the at least one path.

101. Following Mr. Baxter's logic, the functional limitations in the claims reciting "current flow" become superfluous. The path coupled across has the structure for DC current to flow and is expressly defined with an intended use of drawing DC current. The Ethernet terminal equipment as claimed is already defined to include this path. Applying Mr. Baxter's interpretation, the Ethernet terminal equipment is merely configured (or designed) to draw different magnitudes of DC current flow in response to at least one condition applied to a contact. However, such a capability must already be present in the path through the operation of Ohm's law.

102. Any ambiguity concerning "current flow" is resolved by the prosecution history as discussed above. Applicants specifically added "flow" multiple times for the functional limitations. Applicants explained that the distinction over the prior art was "using" the path to draw current, not any structural difference.

103. The "at least one path" provides the structure to carry a DC current presented from one contact in one pair to another contact in another pair, and that current is governed by Ohm's law. Under the claim language, the Ethernet terminal equipment must have not just the *capability* to draw different magnitudes of DC current, it must actually draw different magnitudes of DC current.

(C) Path Coupled Across

104. The word "path" is used only once in the specification:

> The output of signal modulator 7 is diode OR'd with the output of isolation power supply 8 and then connects to one of the transmit data lines that connect to remote module 16.

> The return path for current from PC 3A is the pair of receive data lines.
>
> '012 Patent, 7:31-53; '107 Patent, 7:37-61.

105. Mr. Baxter does not propose a plain and ordinary meaning of "path." The plain and ordinary meaning of "path" as used in the claims is the route or course over which the signal travels. Specifically, the "path" is the course that the signal travels from one claimed contact to the other claimed contact.

106. Variations of the word "couple" are used 16 times in the specification:

> FIG. 10 is a detailed schematic diagram which illustrates a remote module and a central receiver module **coupled** to a network in accordance with the third embodiment of the present invention.
> '012 Patent, 4:4-7.

> Each pair of transmit and receive wires are internally **coupled** to an associated personal computer via two windings of an internally located isolation transformer (not shown). Each pair of transmit wires and each pair of receive wires thereby form a current loop through one of the personal computers 3A through 3D which is advantageously employed in accordance with the approach described herein.
> '012 Patent, 5:25-32.

> Within central module 15 a, high pass filter 62 prevents the encoded signal from being conducted through the data lines to hub 1. The signal **couples** through transformer 72 to low pass active filter 74 which filters out normal network communications signals. The filtered signal is squared-up by comparator 76 and outputted to Manchester decoder 5.
> '012 Patent, 8:59-65.

> It is also within the scope of the invention to **couple** the signal from the receiver data lines through an isolating device into a microprocessor wherein the low pass filtering and decoding functions are implemented.
> '012 Patent, 9:14-18.

> The tether 150 includes two conductive lines 152 and 154 **coupled** between a pair of connectors 156 and 158. An attachment status signal is conducted through the conductive lines 152 and 154 for indicating whether the tether 150 remains attached to the protected equipment. The first conductive line 152 includes pads P1 and P2 inline to provide a means of shorting a break in the line. The second conductive line 154 is **coupled** directly between the connectors. An external jumper 160 is connected to the output connector 158 of the tether 150 to complete the electrical connection.
> '012 Patent, 11:26-36.

The system transmits a signal over pre-existing network wiring or cables without disturbing network communications by **coupling** a signal that does not have substantial frequency components within the frequency band of network communications. The system is particularly suitable for high-frequency networks such as Ethernet operating at speeds of 10 megabits per second (Mb/s) and higher. For purposes of this invention the term "high frequency information" means the band of frequencies needed to carry data at 10 Mb/s or more. **Coupling** a lower frequency signal to the data lines of such a network permits increased utilization of the available transmitting medium without a commensurate increase in the cost of the network.
'012 Patent, 11:64-12:9.

Further suppression of harmonics results from the lowpass filtering provided by the resistors used to **couple** the low frequency signal to the data lines acting with the capacitors used for the highpass function mentioned above.
'012 Patent, 12:43-47.

A decoder plug 206 attached to a computer port is electronically **coupled** to the sender tag 202. The decoder plug 206 receives the serial stream, and then converts the serial stream into a signal format that is compatible with the port to which the decoder plug 206 is connected. Although, in the presently preferred embodiment the decoder plug 206 is connected to a computer parallel port 210, the principles of the invention may be readily extended to other types of ports, such as USB, Firewire, keyboard, and serial ports. In addition, the scope of the invention includes **coupling** multiple ID senders 202 to a single decoder plug 206 so that multiple objects can be monitored with the decoder plug 206. Also, connecting multiple decoder plugs 206 in series is within the scope of the invention.
'012 Patent, 13:30-44.

Although the presently preferred embodiment of the invention includes a port reader 218 and a control manager 216, the principles of the invention may be practiced with merely an ID sender tag 202 electronically **coupled** to a decoder plug 206.
'012 Patent, 13:59-63.

The buffered serial stream is **coupled** from the output of the signal receiver 230 to an input of the processor 232 which converts it into a parallel stream. Firmware in the processor 232 implements an ID reader module 236 to provide the conversion function. A tri-state buffer 233 coupled to the processor 232 permits unobstructed passthrough communication from the interface port 210 to a peripheral device **coupled** to the decoder plug 204 through a connector 235.
'012 Patent, 14:64-15:5.

> Continuing to refer to FIGS. 19 a and 20, during network management information mode a network manager determines the location or configuration of assets that are **coupled** to the network by interrogating ID senders 202 and decoder plugs 206 attached to assets.
> '012 Patent, 16:5-9.

> Although, in the preferred embodiment the comparison function of the control manager and database is executed on a network server electronically **coupled** through a network to an ID sender tag 202, the scope of the invention includes conducting the comparison locally on a computer that is being scanned, in a central database over a network, over a corporate intranet, and over the world wide Internet.
> '012 Patent, 16:28-34.

107. Mr. Baxter cites to the McGraw-Hill Electronics Dictionary definition of "coupling." Baxter Decl. at ¶ 89. I agree that "coupling" or "coupled circuit" can be defined as allowing energy transfer between points along the specified path.

108. In the context of the claims, "couple" is used as a verb to connote that a signal will travel along the claimed path from one claimed contact to the other. Applying the definition of "couple" to the claims, an acceptable construction of "path coupled across" is a "path permitting energy transfer between," which uses Mr. Baxter's own definition.

109. However, Mr. Baxter seems to believe that the term "connection" is somehow more restrictive. It appears that he is interpreting that term to require a direct connection (e.g., through a single wire), with no intervening components, such as resistors, inductor windings, etc. Defendants' construction is not so limited. For example, Newton's Telecom Dictionary defines "connection" as "An electrical continuity of circuit between two wires or two units, in a piece of apparatus." There is no restriction, express or implied, about the connection being direct, without intervening devices. All that is required is continuity along the path.

110. Mr. Baxter's statements concerning "an important distinction for devices using DC current, like Power over Ethernet ('PoE') equipment" are irrelevant. Baxter Decl. at ¶ 91. PoE products have nothing to do with the Patents-in-Suit or any aspect of

the intrinsic evidence. This is merely what Chrimar asserts is infringing, and has no bearing on how one would understand the plain meaning of the claim.

111. The configuration suggested by Mr. Baxter in paragraphs 91 and 92 describes passing a DC current through the windings on one side of a transformer. The piece of coiled wire constitutes an electrical connection through which a DC current may travel. Contrary to his assertion, Defendants' proposed construction would not limit the claim to direct electrical connections; as stated above, a connection may be achieved through the winding of a transformer, as he states.

112. Mr. Baxter's proposed use of "coupling" is, in fact, too broad for the context of the Patents-in-Suit. As discussed above, Mr. Baxter and I agree that the use of "current" and "current flow" in the patents refers to direct current (DC), as opposed to alternating current (AC). Baxter Decl. at ¶¶ 57, 59. However, Mr. Baxter's proposed construction using "coupling" would include (according to his own cited definition), "inductive [coupling] through a transformer or choke, or capacitive [coupling] through a capacitor." Baxter Decl. at ¶ 89. DC cannot be inductively coupled through a transformer (mutual inductance), nor can it pass through a capacitor. Indeed, in many places in the disclosed circuits in the patents, capacitors are strategically placed specifically to block DC and contain it within the boundaries of the claimed invention. *See, generally,* Figs. 6, 8, 10.

113. The use of the term "coupling," as defined by Mr. Baxter, would improperly expand the scope of the claim to paths that could convey alternating current as well as direct current.

114. It should be noted that the isolation transformers in Figures 6 and 10 pass a constant net DC current through the secondary wiring of the transformer, which is sent back to the central module via two wires operating as a pair. The amount of DC current on each wire is the total, constant net DC current plus or minus the induction current supplied across the transformer. The changes in current sent across the

magnetic coupling of the transformer themselves are AC signals, but the overall flow of current through the Ethernet connector and wiring will not change in polarity.

(D) Loop Formed Over

115. Claim 1 of the '760 patent recites:

> 1. A BaseT Ethernet system comprising:
>
> a piece of central BaseT Ethernet equipment;
>
> a piece of BaseT Ethernet terminal equipment;
>
> data signaling pairs of conductors comprising first and second pairs used to carry BaseT Ethernet communication signals between the piece of central BaseT Ethernet equipment and the piece of BaseT Ethernet terminal equipment,
>
> the first and second pairs physically connect between the piece of BaseT Ethernet terminal equipment and the piece of central BaseT Ethernet equipment,
>
> the piece of central BaseT Ethernet equipment having at least one DC supply,
>
> the piece of BaseT Ethernet terminal equipment having at least one path to draw different magnitudes of current flow from the at least one DC supply through a loop formed over at least one of the conductors of the first pair and at least one of the conductors of the second pair,
>
> the piece of central BaseT Ethernet equipment to detect at least two different magnitudes of the current flow through the loop and to control the application of at least one electrical condition to at least two of the conductors.

116. Mr. Baxter asserts that "loop" is "a round trip path formed over [the claimed contacts]." Baxter Decl. at ¶ 78. Mr. Baxter asserts that "the only limitation in the loop as stated in the asserted claims is that the loop is formed over at least one of the conductors of the first pair and at least one of the conductors of the second pair when the first and second pairs are physically connected between the piece of BaseT Ethernet terminal equipment and the piece of central BaseT Ethernet equipment." Baxter Decl. at ¶ 82.

117. I fail to see the distinction between a round-trip path and a complete circuit. Newton's Telecom Dictionary defines a "circuit" as "[A] closed path through which current can flow." This seems indistinguishable from a round-trip path, and Mr. Baxter never shows, by example or otherwise, how a "round trip path formed over" is somehow different from a "complete circuit."

118. Mr. Baxter incorrectly asserts that Claim 1 of the '760 patent "merely requires the claimed device be configured to draw different magnitudes of current flow through a loop." Baxter Decl. at ¶ 82. The Claim additionally requires that "the piece of central BaseT Ethernet equipment [] detect at least two different magnitudes of the current flow through the loop … ." '760 Patent, Claim 1.

(E) Powered Off

119. The "powered-off" limitation is introduced in claims 103 and 104 of the '107 patent and claims 72 and 145 of the '760 patent. "Powered-off" in the claims directly modifies the "Ethernet terminal equipment" ("end device" in claim 104 of the '107 patent.) Accordingly, the claims attempt to read on an Ethernet terminal equipment or end device that is powered-off.

120. Mr. Baxter incorrectly asserts, "None of the asserted claims says that no power is applied to the Ethernet terminal equipment or the end device." Baxter Decl. at ¶ 111. In contrast, this is precisely what the claims assert, e.g.:

> "Claim 103: The piece of Ethernet terminal equipment of any one of claims 1, 17, …, wherein the piece of Ethernet terminal equipment is a piece of powered-off Ethernet terminal equipment."

121. The plain and ordinary meaning of "powered-off" is that no power is applied. This is exactly the meaning of "powered-off Ethernet terminal equipment" and "powered-off end device" as used in the claims. There is no ambiguity.

122. Any time there is DC current flowing through real-world components in a piece of Ethernet terminal equipment (or any other device), there is power being drawn

by that device, equal to the square of the current multiplied by the effective impedance (resistance) of the device. That is, $P = I^2 \times R$. Such a device is not powered-off, it is in fact consuming power (regardless of the level of power consumed).

123. Mr. Baxter instead asserts that "powered-off" means "without its operating power." Baxter Decl. at ¶¶ 108, 109, 112. To the extent that his construction is directed to the claim limitations recited, he offers a distinction without a practical difference. The operation being performed by the Ethernet terminal equipment (and end device) is that of drawing different magnitudes of DC current. That operation requires power in order to be performed. A device "without its operating power" is a device without the power necessary to perform the claimed function.

124. Such a claim can never be infringed because there will be no DC current flow when the device is "powered-off" (under either a construction of "without power applied" or "without its operating power"). Notwithstanding the poor drafting of these claims, this is their plain meaning. Neither Mr. Baxter or myself is allowed to rewrite this unambiguous claim language.

125. It appears that Mr. Baxter's reading of "powered-off" requires an additional, unclaimed power source that its present somewhere, and which provides "operating power", but which is turned off at the time the claim is infringed. In other words, "powered-off" according to Mr. Baxter does not apply to any of the claim limitations recited to be part of the Ethernet terminal equipment (or end device).

126. There is no antecedent basis in the claims for such a separate source of "operating power." Neither the Ethernet terminal equipment nor the end device are claimed to include a separate source of power beyond the drawing of current recited in the claims. For example, the Ethernet terminal equipment (or end device) as claimed does not recite one portion operable with power from one source, and another portion that is "powered-off."

127. A person of ordinary skill in the art would not interpret the claims to require an unwritten claim limitation that is both present and non-operational. Nothing about Ethernet terminal equipment or end devices inherently require a second source of power.

128. Mr. Baxter's interpretation renders "powered off" superfluous to the actual elements of the claim, because it has no application to any recited elements defined to be part of the "powered-off Ethernet terminal equipment (or end device)."

128. The difficulty with Mr. Baxter's interpretation arises from the fact that the patent specification envisions an environment where there is a remote module that is receiving power from a central module, for the purpose of either sending information to the remote module, or receiving identifying information from the remote module. The remote module is attached to an asset being tracked, which presumably is powered from another source, e.g., an AC mains power line. In such an environment, it may be possible for the remote module to be consuming power while the asset being tracked is "powered off." However, this is not what is claimed, and it is impermissible to read any limitations of the specified embodiment into the claim language. What is claimed is a piece of Ethernet terminal equipment (or end device) that is powered-off, not an asset attached to a piece of Ethernet terminal equipment that is powered off.

129. Mr. Baxter's citations to the specification fails to provide a basis for rewriting the claim language. In all of the citations listed in Baxter Decl. ¶ 109, the device without the operating power is the *asset to be tracked*, which in these embodiments is shown as a separate component from the remote module, notwithstanding the fact that it is physically connected to the asset.

130. The configuration taught by the patent specification serves a particular purpose; the asset, such a laptop computer, can be employed without any modifications to its internal structure, yet still be monitored by the external remote module. The remote module is the add-on device that needs to be powered and sends a unique

identifier. Indeed, it is a purported benefit of the invention that the asset can be turned off, while the remote module provides the tracking capability. However, the operation of the purported invention (the features of the claimed remote module) are the same whether the asset is powered-on or powered-off and whether or not Ethernet communications are being sent. In all of these cases, the remote module is receiving its power from the central module.

131. Claim 103 of the '107 patent and claims 72 and 145 of the '760 patent address the claimed Ethernet terminal equipment. Claim 104 calls for an "end device." Both are claimed to draw DC current as supported by the specification. However, in an effort to try to draft claims that read on Power-over-Ethernet (PoE) powered devices, the applicants overreached by drafting claims that are not supported by the specification and that cannot, in fact, be infringed.

132. Whether the "asset" is powered-on or powered-off is of no consequence to the claim language. The claims are unambiguous with respect to the meaning of "powered-off Ethernet terminal equipment" and "powered off end device."

(F) Condition Applied

133. As discussed above, the prosecution history of the '107 patent confirms that several functions of the "Ethernet terminal equipment" and "end device" need to be performed. One such function is that the different magnitudes of DC current "result from at least one condition applied to the contacts."

134. The plain meaning of "condition applied" is simply to do something to the contacts. This leaves no perceivable boundary as to what constitutes a "condition." One of ordinary skill in the art would not know whether it meant:

- An electrical (voltage, current, impedance) condition as contended by Mr. Baxter;
- A temperature condition (it is indeed possible to cause the magnitude of the current drawn to change as a function of temperature);
- A mechanical change applied to the connector contacts so as to change the current flow, etc.

135. There is no reason to presume, as Mr. Baxter does, that the condition applied must be electrical. The fact that certain dependent claims recite voltage conditions or impedance conditions does nothing to limit the original recitation of "condition" to merely an electrical condition. As written, it would be unclear how one would determine the bounds of the claims to evaluate what you can or cannot do to the contacts to yield different magnitudes of DC current. The claims are indefinite because a person of ordinary skill in the art would not know what "condition applied" encompasses.

136. As discussed above, Ohm's law already inherently provides for achieving different magnitudes of current flow by applying different voltages to the contacts of the connectors in the path. Alternatively, thermodynamic changes can affect the impedance of the paths—e.g., by simply waiting for the weather to change, the magnitudes of DC current will change to some degree.

137. To the extent that a "voltage condition" is applied to the contacts, a person of ordinary skill in the art would understand what is required because it is a clear application of Ohm's law to a recited element of the claim.

138. The principle of claim differentiation demands that "condition" be read as being broader than "electrical condition." Claim 61 of the '107 patent recites "[t]he piece of Ethernet terminal equipment of claim 1 wherein the at least one path is a function of at least one *electrical condition* across the at least one of the contacts …" (emphasis added). If the "condition" recited in Claim 1 is already interpreted as an "electrical condition", then Claim 61 provides no new limitation and is rendered invalid. Thus, the