PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re:	Ex Parte Reexamination of U.S. Patent No. 8,155,012
Control No.:	90/013,740
Confirmation No.:	1868
Filing Date:	May 18, 2016
First Named Inventor:	John F. Austermann, III
Group Art Unit:	3992
Examiner:	Charles R. Craver

Title: SYSTEM AND METHOD FOR ADAPTING A PIECE OF TERMINAL EQUIPMENT

Patent Owner Dkt.: 9919-000002-US-RXM (Requester Dkt.. 31AE-226116)

Mail Stop Appeal Brief - Patent
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

PATENT OWNER'S APPEAL BRIEF

Commissioner:

A Notice of Appeal was filed on June 16, 2017. Pursuant to 37 C.F.R. § 41.66, the Patent Owner has two months from the filing date of the Notice of Appeal to timely file an Appeal Brief. This Appeal Brief is timely filed on August 16, 2017.

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c). PCnet (AM79C97 PCnet™-FAST Hardware User's Manual (July 1996)) 42

d). Annunziata et al. (U.S. Patent No. 4,551,671) 43

e). Johnson (U.S. Patent No. 5,524,184) 44

f). Bloch et al. (U.S. Patent No. 4,173,714) 45

g). Sutterlin et al. (U.S. Patent No. 5,148,144) 45

h). Libby (U.S. Patent No. 3,803,432) 46

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I. LIST OF EXHIBITS PROVIDED IN APPENDIX

Exhibit	Description	Date Originally Submitted
AP1	Listing of '012 Patent Claims Under Reexamination and Appeal	Herewith
AP2	Declaration Under 37 CFR 1.132 By Mr. Albert McGilvra with *Curriculum Vitae* of Albert W. McGilvra (Petitions under 37 CFR §1.181 and 1.183 currently pending)	Herewith; May 15, 2017
AP3	Declaration Under 37 CFR 1.132 By Mr. John Austermann, III (Petitions under 37 CFR §1.181 and §1.183 currently pending)	Herewith; May 15, 2017
A	Mem. Op. & Order, *Chrimar Systems, Inc., et al. v. AMX, LLC*, No. 6:13-cv-881-JDL (E.D. Tex. Oct. 22, 2014 (ECF No. 96))	December 8, 2016
B	Mem. Op. & Order, *Chrimar Systems, Inc., et al. v. AMX, LLC*, No. 6:13-cv-881-JDL (E.D. Tex. Jan. 8, 2015 (ECF No. 105))	December 8, 2016
E	Mem. Op. & Order, *Chrimar Systems, Inc., et al. v. Alcatel-Lucent, et al.*, No. 6:15-cv-163-JDL (E.D. Tex. Mar. 28, 2016 (ECF No. 123))	December 8, 2016
F	Mem. Op. & Order, *Chrimar Systems, Inc., et al. v. ADTRAN, Inc., et al.*, No. 6:15-cv-618-JRG-JDL (E.D. Tex., June 20, 2016 (ECF No. 454))	December 8, 2016
G	Memorandum Opinion and order on ALE's motion to construe certain claim terms of the '012 and '760 Patents,*Chrimar Systems, Inc., et al. v. Alcatel-Lucent, et al.*, No. 6:15-cv-163-JDL (E.D. Tex. Sept. 27, 2016 (ECF No. 318)))	December 8, 2016

II. REAL PARTY IN INTEREST

The Real Party in Interest is ChriMar Systems, Inc., the assignee of record.

III. RELATED APPEALS, INTERFERENCES, AND TRIALS

The '012 Patent is also the subject of one (1) *inter partes* review proceedings, specifically IPR2016-01389.

The '012 Patent is a continuation application of U.S. Patent No. 7,457,250 (the " '250 Patent"), which was similarly subject to *ex parte* reexamination in 2010-11. The '250 Patent was

successfully defended and a Reexamination Certificate was issued confirming patentability of the subject claims without amendment.

The '012 Patent is further a parent application of U.S. Patent No. 8,902,760 (the " '760 Patent"), which is currently subject to *ex parte* reexamination.[1] The '760 Patent was successfully defended and the Office has recently issued a Notice of Intent to Issue a Reexamination Certificate on August 9, 2017.

The following table denotes trials specifically relating to the '012 Patent:

2:14-cv-10290-AC-RSW	E.D. Mich.	*Cisco Systems, Inc. and Linksys LLC vs. Chrimar Systems Inc.*	
2:14-cv-10292-AC-RSW	E.D. Mich.	*Hewlett-Packard, Co. vs. Chrimar Systems Inc.*	
3:16-cv-558	N.D. Cal.	*Chrimar Systems, Inc., et al. v. Juniper Networks, Inc.*	
6:13-cv-880	E.D. Tex.	*Chrimar Systems, Inc., et al. v. Alcatel-Lucent, Inc. et al.*	
6:13-cv-881	E.D. Tex.	*Chrimar Systems, Inc., et al. v. AMX, LLC*	
6:13-cv-882	E.D. Tex.	*Chrimar Systems, Inc., et al. v. Grandstream Networks, Inc.*	
6:13-cv-883	E.D. Tex.	*Chrimar Systems, Inc., et al. v. Samsung Electronics Co., Ltd.*	
6:15-cv-163	E.D. Tex.	*Chrimar Systems, Inc., et al. v. Alcatel-Lucent S.A., et al.*	
6:15-cv-618	E.D. Tex.	*Chrimar Systems, Inc., et al. v. ADTRAN, Inc., et al.*	
6:15-cv-00639-JRG-JDL	E.D. Tex.	*Chrimar Systems, Inc., et al. v. Aerohive Networks, Inc.*	
6:15-cv-00614-JRG-JDL	E.D. Tex.	*Chrimar Systems, Inc., et al. v. Alcatel-Lucent Enterprise USA Inc.*	
6:15-cv-00616-JRG-JDL	E.D. Tex.	*Chrimar Systems, Inc., et al. v. Edgecore USA Corporation d/b/a Edgecore Networks*	
6:15-cv-00640-JRG-JDL	E.D. Tex.	*Chrimar Systems, Inc., et al. v. EnGenius Technologies, Inc.*	

[1] *See* Application Control Number 90/013,802.

6:15-cv-00616-JRG-JDL	E.D. Tex.	*Chrimar Systems, Inc., et al. v. SMC Networks, Inc.*	
6:2013-cv-00879	E.D. Tex.	*Chrimar Systems, Inc. et al vs. Aastra Technologies Limited et al*	Licensed
6:2015-cv-00616	E.D. Tex.	*Chrimar Systems, Inc. et al vs. Accton Technology Corporation USA et al*	Open
6:2015-cv-00577	E.D. Tex.	*Chrimar Systems, Inc. et al vs. Advanced Network Devices, Inc.*	Licensed
6:2015-cv-00619	E.D. Tex.	*Chrimar Systems, Inc. et al vs. Advantech Corporation*	Licensed
6:2015-cv-00652	E.D. Tex.	*Chrimar Systems, Inc. et al vs. Allied Telesis, Inc.*	Licensed
6:2015-cv-00621	E.D. Tex.	*Chrimar Systems, Inc. et al vs. Alpha Networks, Inc.*	Dismissed
6:2015-cv-00615	E.D. Tex.	*Chrimar Systems, Inc. et al vs. AMX, LLC*	Dismissed
6:2015-cv-00164	E.D. Tex.	*Chrimar Systems, Inc. et al vs. AMX, LLC*	
6:2015-cv-00579	E.D. Tex.	*Chrimar Systems, Inc. et al vs. Arrowspan, Inc.*	Dismissed
6:2015-cv-00623	E.D. Tex.	*Chrimar Systems, Inc. et al vs. ASUSTek Computer International, Inc.*	Dismissed
6:2015-cv-00624	E.D. Tex.	*Chrimar Systems, Inc. et al vs. ASUS Computer International*	Dismissed
1:2011-cv-01050	E. D. Del	*Chrimar Systems Inc. et al v. Cisco Systems Inc. et al (Avaya)*	Licensed
6:2015-cv-00650	E.D. Tex.	*Chrimar Systems, Inc. et al vs. Belkin International, Inc.*	Licensed
6:2015-cv-00578	E.D. Tex.	*Chrimar Systems, Inc. et al vs. Biamp Systems Corporation*	Licensed
2:2015-cv-12565	E.D. Mich	*Cisco Systems, Inc. vs. Chrimar Systems, Inc.*	Declaratory Judgment
1:2011-cv-01050	E.D. Del.	*Chrimar Systems Inc. et al vs. Cisco Systems Inc. et al*	Transferred
2:2015-cv-10817	E.D. Mich	*Cisco Systems, Inc. vs. Chrimar Systems, Inc.*	Declaratory Judgment
2:2001-cv-71113	E.D. Mich	*Chrimar Systems Inc. vs. Cisco Sys Inc*	Licensed
4:2013-cv-01300	N.D. Cal.	*Chrimar Systems Inc. et al vs. Cisco Systems Inc. et al*	Open
2:2006-cv-13937	E.D. Mich	*Chrimar Systems, Incorporated v. D Link Systems, Incorporated*	Licensed

2:2009-cv-00044	E.D. Tex.	*Chrimar Systems Inc. vs. Danpex Corporation*	Dismissed
6:2015-cv-00639	E.D. Tex.	*Chrimar Systems, Inc. et al vs. Dell Inc. et al*	Licensed
6:2015-cv-00628	E.D. Tex.	*Chrimar Systems Inc. et al vs. Edimax Computer Company*	Licensed
1:2011-cv-01050	E.D. Del.	*Chrimar Systems Inc. et al vs. Cisco Systems Inc. et al (Extreme Networks)*	Transferred
4:2013-cv-01300	N.D. Cal.	*Chrimar Systems Inc. et al vs. Cisco Systems Inc. et al (Extreme Networks)*	Licensed
3:2016-cv-00897	N.D. Cal.	*Chrimar Systems, Inc. et al v. Fortinet, Inc.*	Open
2:2006-cv-13936	E.D. Mich	*Chrimar Systems, Incorporated v. Foundry Networks, Incorporated*	Dismissed
2:2009-cv-00085	E.D. Tex.	*Chrimar Systems, Inc. vs. Garrettcom, Inc., et al*	Dismissed
3:2009-cv-04516	N.D. Cal.	*Chrimar Systems, Inc. vs. Garrettcom, Inc., et al*	Dismissed
6:2015-cv-00580	E.D. Tex.	*Chrimar Systems, Inc. et al v. Hawk-I Security Inc*	Dismissed
2:2015-cv-10814	E.D. Mich	*Hewlett-Packard Company v. Chrimar Systems, Inc.*	Declaratory Judgment
2:2015-cv-12569	E.D. Mich	*Hewlett-Packard Co. et al v. Chrimar Systems, Inc.*	Declaratory Judgment
1:2011-cv-01050	E.D. Del.	*Chrimar Systems Inc. et al vs. Cisco Systems Inc. et al (HP)*	Transferred
4:2013-cv-01300	N.D. Cal.	*Chrimar Systems Inc. et al vs. Cisco Systems Inc. et al (HP)*	Open
		Hubbell Premise Wiring	Licensed
6:2015-cv-00582	E.D. Tex.	*Chrimar Systems, Inc. et al v. IPItomy Communications, LLC*	Licensed
6:2015-cv-00583	E.D. Tex.	*Chrimar Systems, Inc. et al v. Keyscan Inc.*	Licensed
6:2015-cv-00631	E.D. Tex.	*Chrimar Systems, Inc. et al v. Korenix USA Corporation*	Licensed
2:2009-cv-00230	E.D. Tex.	*Chrimar Systems Inc. v. KTI Network, Inc. et al*	Licensed
6:2015-cv-00632	E.D. Tex.	*Chrimar Systems, Inc. et al v. Leviton Manufacturing Company, Inc.*	Licensed
		Microsemi Corporation	Licensed
6:2015-cv-00633	E.D. Tex.	*Chrimar Systems, Inc. et al v. Moxa Americas Inc.*	Licensed
2:2009-cv-00085	E.D. Tex.	*Chrimar Systems, Inc v. Garrettcom, Inc., et al (Neteon)*	Licensed
3:2016-cv-00624	N.D. Cal.	*Chrimar Systems, Inc. et al v. NETGEAR*	Open

6:2015-cv-00635	E.D. Tex.	*Chrimar Systems, Inc. et al v. NetMedia Inc.*	Dismissed
6:2015-cv-00636	E.D. Tex.	*Chrimar Systems, Inc. et al v. Phihong USA Corporation*	Licensed
2:2001-cv-74081	E.D. Mich	*Chrimar Sys Inc. v. Powerdsine LTD, et al*	Licensed
6:2015-cv-00637	E.D. Tex.	*Chrimar Systems, Inc. et al v. Rockwell Automation, Inc.*	Dismissed
3:2016-cv-00186	N.D. Cal.	*Chrimar Systems, Inc. et al v. Ruckus Wireless Inc.*	Open
6:2015-cv-00645	E.D. Tex.	*Chrimar Systems, Inc. et al v. StarTech.com USA L.L.P.*	Licensed
6:2015-cv-00642	E.D. Tex.	*Chrimar Systems, Inc. et al v. Transition Networks, Inc.*	Licensed
6:2015-cv-00646	E.D. Tex.	*Chrimar Systems, Inc. et al v. Tycon Systems Inc.*	Licensed
2:2008-cv-00453	E.D. Tex.	*Chrimar Systems, Inc. v. Waters Network Systems, LLC*	Licensed
IPR2016-00983	USPTO	*Dell*	Cancelled
IPR2016-01389	USPTO	*Juniper*	Active
IPR2016-01425	USPTO	*D-Link*	In process of being cancelled

IV. PENDING PETITIONS UNDER 37 CFR §1.181 AND §1.183

It is noted that Petitions under 37 CFR §1.181 and §1.183 are currently pending before the Director in connection with the Examiner's refusal to enter Declarations under 37 CFR §1.132 by Mr. Albert McGilvra and Mr. John Austermann, III that were filed in connection with Patent Owner's Response to Final Office Action filed on May 15, 2017. The Petitions were timely filed on August 14, 2017. The Patent Owner makes reference to the aforementioned Declarations within the present Appeal Brief in anticipation of grant of the Petitions. To the extent that the Declarations are not entered into the record of the present matter by the Director, Patent Owner requests the Board to consider remanding the appeal as the appeal is not ripe for consideration of the Board. Remanding the appeal will provide for entry of the Declarations into the record to properly instruct, inform, and equip the Board as to the technical attributes of

the disclosed invention. The Patent Owner has appealed the premature finality of the proceeding and the refusal to consider evidence that was presented in response to arguments that were set forth for the first time in the Final Office Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The following summary correlates claim elements to specific embodiments described in the specification of the '012 Patent, but does not in any manner limit claim interpretation. Due to the breadth of the specification of the '012 Patent, the present recitation should not be regarded as being exhaustive, but rather is offered only to facilitate the Board's understanding of the subject matter of this appeal.

Generally, the claims are directed to adapting a piece of Ethernet data terminal equipment or an adapted piece of Ethernet data terminal equipment by arranging or associating impedance within a path of the Ethernet data terminal equipment to distinguish the piece of Ethernet data terminal equipment.

Independent Claim 1 claims a method for adapting a piece of Ethernet data terminal equipment, the piece of Ethernet data terminal equipment having an Ethernet connector, the method comprising: selecting contacts of the Ethernet connector comprising a plurality of contacts (see, e.g., Abstract; FIG. 4, ref. 3A; FIG. 8, ref. 116; FIGS. 14 & 15; Col. 3, ll. 36-37; Col. 5, ll. 16-20; Col. 12, ll. 1-3; Col. 12, ll. 13-14), the selected contacts comprising at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the Ethernet connector (see, e.g., Abstract; FIG. 4, ref. 3A; FIG. 8, ref. 116; FIGS. 14 & 15; Col. 3, ll. 36-37; Col. 5, ll. 16-20; Col. 12, ll. 1-3; Col. 12, ll. 13-14); coupling at least one path across the selected contacts of the Ethernet connector (see, e.g., FIG. 8; Col. 5, ll. 28-31;

Col. 5, ll. 33-35; Col. 9, ll. 27-30); and associating distinguishing information about the piece of Ethernet data terminal equipment to impedance within the at least one path (see, e.g., Abstract; FIG. 3; Col. 3, ll. 36-37; Col. 6, ll. 11-13; Col. 8, ll. 51-57; Col. 12, ll. 1-3; Col. 12, ll. 13-14).

Independent Claim 31 claims an adapted piece of Ethernet data terminal equipment comprising: an Ethernet connector comprising a plurality of contacts (see, e.g., Abstract; FIG. 4, 3A; FIG. 8, ref. 116; FIGS. 14 & 15; Col. 3, ll. 36-37; Col. 5, ll. 16-20; Col. 12, ll. 1-3; Col. 12, ll. 13-14); and at least one path coupled across selected contacts (see, e.g., FIG. 8; Col. 5, ll. 28-31; Col. 5, ll. 33-35; Col. 9, ll. 27-30), the selected contacts comprising at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the Ethernet connector (see, e.g., Abstract; FIG. 8; Col. 12, ll. 1-3; Col. 12, ll. 13-14), wherein distinguishing information about the piece of Ethernet data terminal equipment is associated to impedance within the at least one path (see, e.g., Abstract; FIG. 3; Col. 3, ll. 36-37; Col. 6, ll. 11-13; Col. 8, ll. 51-57; Col. 12, ll. 1-3; Col. 12, ll. 13-14).

Independent Claim 67 claims a method for adapting a piece of terminal equipment, the piece of terminal equipment having an Ethernet connector, the method comprising: coupling at least one path across specific contacts of the Ethernet connector (see, e.g., Abstract; FIG. 4, ref. 3A; FIG. 8, ref. 116; FIGS. 14 & 15; Col. 3, ll. 36-37; Col. 5, ll. 16-20; Col. 12, ll. 1-3; Col. 12, ll. 13-14), the at least one path permits use of the specific contacts for Ethernet communication (see, e.g., FIG. 8; Col. 5, ll. 28-31; Col. 5, ll. 33-35; Col. 9, ll. 27-30), the Ethernet connector comprising the contact 1 through the contact 8 (see, e.g., FIGS. 14 & 15), the specific contacts of the Ethernet connector comprising at least one of the contacts of the Ethernet connector and at least another one of the contacts of the Ethernet connector (see, e.g., FIGS. 4 & 8); and arranging

impedance within the at least one path to distinguish the piece of terminal equipment (see, e.g., Col. 2, ll. 49-58; Col. 6, ll. 25-33).

Independent Claim 108 claims an adapted piece of terminal equipment having an Ethernet connector, the piece of terminal equipment comprising: at least one path coupled across specific contacts of the Ethernet connector (see, e.g., Abstract; FIG. 4, ref. 3A; FIG. 8, ref. 116; FIGS. 14 & 15; Col. 3, ll. 36-37; Col. 5, ll. 16-20; Col. 12, ll. 1-3; Col. 12, ll. 13-14), the at least one path permits use of the specific contacts for Ethernet communication (see, e.g., FIG. 8; Col. 5, ll. 28-31; Col. 5, ll. 33-35; Col. 9, ll. 27-30), the Ethernet connector comprising the contact 1 through the contact 8 (see, e.g., FIGS. 14 & 15), the specific contacts comprising at least one of the contacts of the Ethernet connector and at least another one of the contacts of the Ethernet connector (see, e.g., FIGS. 4, 8, 15, & 16), impedance within the at least one path arranged to distinguish the piece of terminal equipment (see, e.g., C2, ll. 54-58; Col. 6, ll. 31-33).

VI. ARGUMENT

A. SUMMARY OF PATENT OWNER'S APPEAL

The '012 Patent claims an innovative and beneficial Ethernet data terminal equipment. The claimed equipment improved on then-existing Ethernet terminal equipment, because it can use its impedance that is physically associated with the Ethernet terminal equipment to convey information, which distinguishes it from another piece of Ethernet terminal equipment.

The Requester has applied grounds employing numerous teachings of the cited prior art, namely the Cummings, Maman, and PCnet references, that do not teach the claim limitations alone or in combination. Moreover, the Requester has failed to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would

combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*[2]. The Requester and the Office have only stated, *in toto*: "Cummings and Maman both describe theft prevention using impedance detection."[3] This conclusory statement is grossly insufficient to support a *prima facie* case of obviousness.

The claims of the '012 Patent are each directed to a method of adapting a piece of Ethernet data terminal equipment (independent Claims 1, 67) or a piece of Ethernet data terminal equipment (independent Claims 31, 108) that define structure to physically and permanently associate impedance to a piece of Ethernet terminal equipment in accordance with the disclosed embodiments. That is, the claims of the '012 Patent clearly recite that "distinguishing information" "about the piece of Ethernet data terminal equipment" itself is "associated" to "impedance within . . . [a] path" "across selected/specific contacts of the Ethernet connector" of the "Ethernet data terminal equipment," such "distinguishing information" distinguishes the Ethernet data terminal equipment.[4]

Moreover, the rejections set forth by the Requester and adopted by the Office do not provide any physical solution for the claim limitation of the piece of Ethernet data terminal equipment itself—each of the rejections is predicated on an entire system configuration including a plurality of ancillary components. The proposed combinations advanced by the Requester are predicated on references that fail to teach ever adapting a piece of Ethernet data terminal equipment. Instead, the proposed combinations advanced by the Requester and adopted by the

[2] Discussed in greater detail herein below.
[3] Request for *Ex Parte* Reexamination of U.S. Patent No. 8,155,012 filed April 27, 2016 (hereinafter the "Request"), page 27.
[4] See Independent Claims 1, 31, 67, and 108.

Office verbatim are based primarily on U.S. Patent No. 5,406,260 to Cummings, which discloses four PCs with an "identical" (and not detectable) impedance, to support an argument that PCs can be distinguished based on impedance. It is factually impossible to distinguish PCs via the use of impedance when all of the PCs have the "same" impedance. Notably, the impedance (actually, admittance) in the path within the PCs of Cummings is much less than the resistance in the data lines used to connect the PCs to the network (which are used by the Requester to complete the combined Ethernet system), which in reality makes it impossible to detect any impedance associated with the PC by a central piece of equipment. It may be worth noting that this reality was part of the motivation and catalyst for "physically adding" impedance to the PCs (by way of "adapting . . . Ethernet data terminal equipment") as taught and patented in the present '012 Patent. This physically added impedance provided a detectable impedance (an impedance greater than that of the data lines) and allowed a piece of Ethernet data terminal equipment to have an impedance that is different than the other Ethernet data terminal equipment.

Furthermore, the proposed combinations and the corresponding rejections attempt to combine the tapped data communication lines of Cummings (i.e. that is, cables connecting a hub to a computer that are physically disconnectable from the hub and the computer) with a micro-switch or shorting bar of an AC power cable solution of Maman. The present rejections state that *disconnection* of the data communication lines of Cummings or the *disconnection* of the AC power cord of Maman provide "distinguishing information" about the computer. This is incorrect.

In fact, the present rejections fails to appreciate that 1) Cummings and Maman are physically incompatible solutions to the same problem (the AC power cable solution is fatal to

the Ethernet communications within the data communication lines of Cummings), 2) that each and every independent claim require a "path" coupled across "selected/specific contacts" of the "Ethernet connector" of the "Ethernet data terminal equipment" and "impedance within the at least one path" being associated/arranged to "distinguishing information/distinguish" "the piece of Ethernet data terminal equipment" or a variation thereof; and 3) reliance on any *disconnection* event for information necessarily fails to meet at least one of the specific claim limitations (i.e. coupling a path).

The present rejections overlook the fact that the claims of the '012 Patent specifically require that the "Ethernet data terminal equipment" itself includes the claimed elements that permit the Ethernet data terminal equipment itself to achieve the resultant benefits. The structure of the claims and associated antecedent basis require interpretation of the claim to be limited to only the Ethernet data terminal equipment, without regard to ancillary Ethernet network components. This is made clear in each independent claim, which is specifically directed to Ethernet data terminal equipment "having an Ethernet connector"[5] or "comprising an Ethernet connector"[6]. The ownership of the Ethernet connector is part of the Ethernet data terminal equipment and is not (nor cannot be) an ancillary component of the Ethernet data terminal equipment. There is further support for this in IEEE 802.3i, which states specifically states "[t]he plug connector *shall be* used on the twisted-pair link segment and *the jack on the MAU*."[7] Consequently, the claimed structure that requires the "Ethernet connector comprising a plurality of contacts" or "contacts of the Ethernet connector," thus requires the contacts to be part of the Ethernet data terminal equipment. Finally, the "path coupled across the . . . contacts of the

[5] Independent Claims 1, 67, 108
[6] Independent Claim 31
[7] IEEE Std. 802.3i-1990, page 51.

Ethernet connector" thus require the path to be part of the claimed Ethernet data terminal equipment in accordance with the disclosed embodiments illustrating the invention being formed through the Ethernet data terminal equipment or physically and permanently attached to the Ethernet data terminal equipment. Moreover, any interpretation otherwise contradicts the dependent claims of the '012 Patent.

The Requester and the Office have failed to meet their burden in proving by a preponderance of the evidence that any Ethernet data terminal equipment of Cummings is or can be modified to meet the properly construed claims of the '012 Patent. Connecting peripheral devices such as a mouse or keyboard or a connection to a hub via data lines, as alleged by the Requester, in no way modifies/adapts the piece of Ethernet terminal equipment itself, but rather the entire Ethernet system is modified. Furthermore, the Requester and the Office have failed to establish that the teaching of PCnet (which teaches PCs all having the "same" impedance like Cummings) provides any relevant teachings relating to the present claims and how Maman provides any motivation and likelihood of success in the proposed combination.

The Requester and the Office have necessarily converted the method and equipment of the '012 Patent to a "binary" system that only provides physical connection status information about the entire proposed current loop that passes through the central device, the pair of data communication lines, and the terminal equipment, which works the same *regardless* of the impedance of the Ethernet terminal equipment i.e., the impedance of the Ethernet terminal equipment is of no consequence). However, this does not provide "distinguishing information about the piece of Ethernet data terminal equipment" itself. When the entire proposed current loop includes 1) a central device, 2) a pair of data communication lines, and 3) a terminal equipment, any discontinuity in the loop caused by disruption of current within the loop merely

indicates that the *loop itself* is discontinuous and provides no *distinguishing information* about the Ethernet data terminal equipment, much less *distinguishing information* associated to *impedance within a path of the Ethernet data terminal equipment* as claimed.

Accordingly, the present rejections are technically and legally deficient, and should be withdrawn.

B. BACKGROUND

1. Background of Ethernet Technology

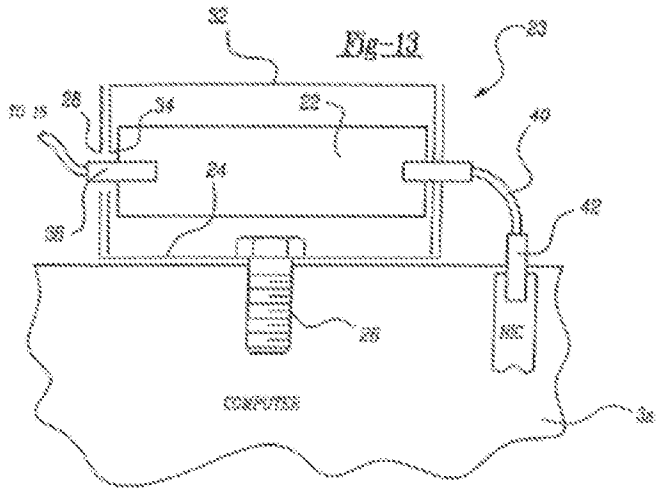
Ethernet systems are designed for high-speed, high frequency communication of digital data. Ethernet data is transmitted at frequencies in the tens of megahertz. Ethernet communications are susceptible to noise and degradation. In 1990, the Institute of Electrical and Electronics Engineers (IEEE) published an Ethernet standard, which covered "10Base-T." In 1995, the IEEE published another standard covering "100Base-T" Ethernet. Unlike other system technologies, Ethernet data can only travel one direction on a twisted wire-pair. To send and receive data, two twisted wire-pairs are needed.

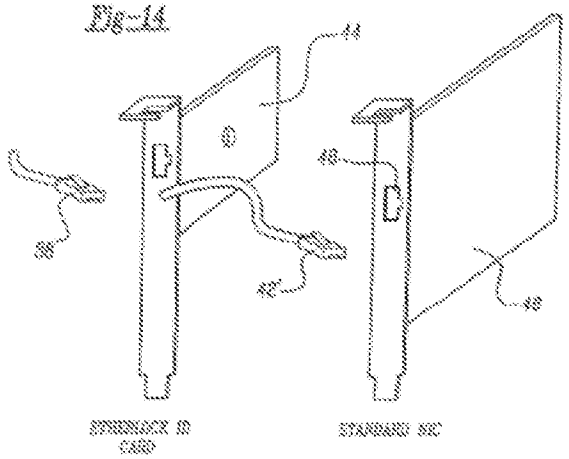
As late as 1999-2000, the IEEE experts were skeptical that the same wires used for Ethernet could be used to deliver operating power to Ethernet terminal equipment without damaging the equipment or degrading the Ethernet data signal.

At the time of the present invention (1997), "Standard 10Base-T Ethernet [was] still the most common type of network architecture in use." IEEE 802.3 – the standard for 10Base-T Ethernet–required an RJ-45 "MDI connector" having eight contacts. Four of those contacts (contacts 1, 2, 3, and 6) were used to carry data; the other four contacts (contacts 4, 5, 7, and 8) were not used.

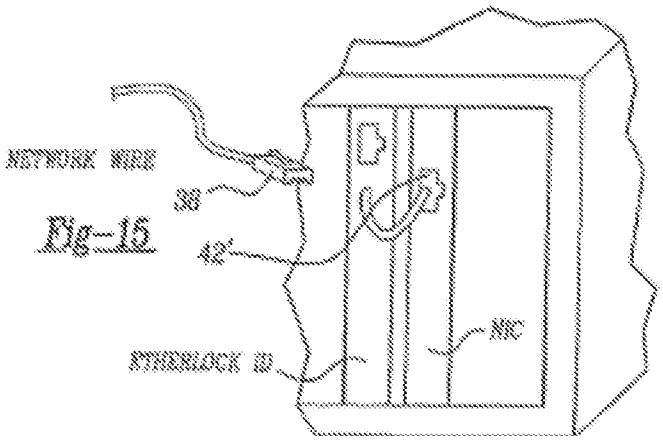
2. The Invention of the '012 Patent Claims

The '012 Patent is directed to methods and systems for managing a remote piece of equipment (Ethernet data terminal equipment 3A) that connects within a wired BaseT Ethernet network. The invention "relates generally to computer networks and, more particularly, to a network management and security system for managing, tracking, and identifying remotely located electronic equipment on a network."[8] The "invention is particularly adapted to be used with an *existing Ethernet communications link or equivalents thereof*."[9]





[8] '012 Patent at 1:23–26.
[9] '012 Patent at 3:35–37.



This invention allowed the patentees to solve a number of problems associated with prior-art asset-management systems. As the specification of the '012 Patent explains:

> [The prior art was] generally incapable of detecting the electrical connection status of equipment[;] *it cannot detect the physical location of equipment, the identifying name of equipment is not permanent, and the monitored assets must be powered-up.*
>
> Therefore, a method for *permanently identifying an asset by attaching an external or internal device to the asset and communicating with that device using existing network wiring or cabling is desirable. . . . Such a device would allow a company to track its assets, locate any given asset, and count the total number of identified assets at any given time, thus significantly reducing its [total cost of ownership] of identified assets.*[10]

In short, the patentees were looking for a way to identify, communicate with, and manage distributed assets in a BaseT Ethernet network, over *existing network wires*, even when the assets (e.g., PCs, workstations) were operationally turned off. The innovative equipment and methods described and claimed by the '012 Patent achieve each of these goals. Specifically, they adapt a piece of (Ethernet) data terminal equipment so that they are able to: (1) convey distinguishing information about themselves when physically connected to a central piece of equipment e.g., a

[10] '012 Patent at 1:63–2:11.

hub, over the same lines used to transmit high-frequency data communications to the terminal equipment, without interrupting the high-frequency data communications[11]; and (2) convey distinguishing information about an asset (e. g., Ethernet terminal equipment) even with the asset powered off.[12]

C. PROPER CONSTRUCTION OF CLAIM TERMS

1. Proper Legal Claim Construction Must Be Legally Correct and Supported by the Patent Specification, and Statements Made Can Be Relied On To Support Prosecution Disclaimer In Construing Claims

In *ex parte* reexamination of an unexpired patent, the Office gives the claims the broadest reasonable construction *consistent with the specification*. *In re Yamoto*, 740 F.2d 1596, 1571 (Fed. Cir. 1984).[13] The broadest reasonable construction, however, is still bounded by what is *legally correct and supported by the patent specification*. *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015).

The Federal Circuit has acknowledged the difficulty in construing claims that are involved in both reexamination/*inter partes* review and litigation, but emphasizes that the broadest reasonable interpretation (BRI) must be "*in light of the specification*." The Court stated:

> This is a close and difficult case because of the standard that the Board uses to construe claims. The Board applies the broadest reasonable construction standard even in IPRs which are litigation-like contested proceedings before the Board. The Board uses this standard even when the identical patent may be simultaneously in litigation involving the identical parties and where the district court

[11] *See, e.g.*, '012 Patent at 11:64–66 ("The system transmits a signal over pre-existing network wiring or cables without disturbing network communications . . . .").
[12] *See, e.g.*, '012 Patent at 4:66–67 (describing an embodiment of the invention "capable of identifying the existence and location of network assets without power being applied to the assets."); *id.* at 12:48–50 ("[T]he system provides a means for permanently identifying the location of network assets without applying power to the assets.").
[13] Patent Owner notes that claim construction in reexamination is broader than in litigation. Thus, nothing in this Appeal Brief should be taken as an assertion regarding how the claims should be construed in litigation.

> would be deciding the correct construction consistent with *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).Thus, it is possible to have two different forums construing the same term in the same patent in a dispute involving the same parties but using different standards. If we were tasked with reviewing the Board's construction according to *Phillips*, and in fact if the Board had applied the *Phillips* standard rather than the broadest reasonable construction, this case would be straight-forward. PPC Broadband's construction is the only construction of the term consistent with the use of the same term throughout the specification. But this case is much closer under the broadest reasonable interpretation standard given the ordinary meanings attributable to the term at issue. We conclude that while close, *the Board's construction is not reasonable in light of the specification.*

PPC Broadband v. Corning Optical Communications, 815 F.3d 747 (2016), Nos. 2015-1364.

2. Proper Claim Construction in Light of Specification of the '012 Patent and Ordinary Skill in the Art

a). Current Construction of the Claimed Terms Being Applied in the Corresponding Inter Partes Review.

At the outset, the Patent Owner notes the following claim construction is being applied in corresponding *inter partes* reviews in connection with the '012 Patent and its related patent family.

Claim Language	IPR Construction
"distinguishing information" (Claims 1, 3, 15-20, 31, 33, 45-50)	"distinguishing information about the piece of Ethernet data terminal equipment is associated to impedance within the at least one path." *See* Case No. IPR2016-01389, Paper 12 at 9-10.
"BaseT" (Claims 6, 14, 16, 17, 26, 30, 36, 44, 46, 47, 56, 60, 104, 145)	"twisted pair Ethernet in accordance with the 10BASE-T or 100BASE-T standards" *See* Case No. IPR2016-01398, Paper 9 at 11-12.

Claim Language	IPR Construction
"protocol" (Claims 5, 35, 73, 114)	The word "protocol" has a well understood meaning in the networking field. A protocol, as defined in the computer networking field, is "a mutually agreed upon method of communication." *See* the Internet Engineering Task Force 1993 paper titled "FYI on 'What is the Internet?'" (available at https://tools.ietf.org/html/rfc1462.) No further construction necessary.

b). Prior Claim Constructions from the District-Court Litigation

Certain terms of the '012 Patent and several of its related patents sharing a common specification have been construed in district court litigation and have faced several motions for summary judgment of invalidity and noninfringement. None of the claims involved was found invalid. It is understood that under reexamination a broadest reasonable interpretation (BRI) standard is applied; however, the following is presented merely for consideration as to how these terms have been construed in district court litigation. It is noted that not all claims have been construed; however, the Patent Owner submits that like terms in like claims should be construed similarly.

Claim Language	Court's Construction
"BaseT" (Claims 36, 56, and 60)	"twisted pair Ethernet in accordance with the 10BASE-T or 100BASE-T standards" Exhibit E, claim-construction order at 18; Exhibit F, claim-construction order at 23.
"distinguishing information about the piece of Ethernet terminal equipment" (Claim 31)	"information to distinguish the piece of Ethernet data terminal equipment from at least one other piece of Ethernet data terminal equipment" Exhibit A, claim-construction order at 15; Exhibit F, claim-construction order at 22.

Claim Language	Court's Construction
"Ethernet data terminal equipment" (Claim 31)	"device at which Ethernet data transmission can originate or terminate" Exhibit F, claim-construction order at 16.
"impedance" (Claims 31 and 35)	"opposition to the flow of current" Exhibit B, claim-construction order at 12.
"path coupled across" (Claim 31)	"path permitting energy transfer" Exhibit E, claim-construction order at 22; Exhibit F, claim-construction order at 23.
Preamble of Claim 31: "an adapted piece of Ethernet data terminal equipment"	The court held that "'adapted' should be construed consistently with its plain and ordinary meaning to mean 'designed, configured, or made' in accordance with the elements of claim 1." Exhibit B, claim-construction order at 17; Exhibit G, claim construction order at 7.

3. Argument in Support of Proper Claim Construction in Light of Specification of the '012 Patent and Ordinary Skill in the Art

In light of the foregoing, the Patent Owner submits that construction of the claimed terms in the present '012 Patent *cannot be contrary to the "clear meaning"* of the claims (*see D'Agostino* and *Straight Path IP Group*) and is bounded by what is *legally correct and supported by the patent specification* (*see Microsoft Corp.*). The Patent Owner submits the following in connection with the claimed terms.

a). "Ethernet Data Terminal Equipment" - The Claims Are Specifically Directed To a Piece of Ethernet Data Terminal Equipment, and Are Not To Be Construed To Include Ancillary Ethernet System Components

Each of the independent claims of the '012 Patent is specifically directed to "a piece of Ethernet data terminal equipment."[14] It is important to note that the term Ethernet data terminal equipment or terminal equipment having an Ethernet connector, when interpreted consistent with the specification and as commonly used by those having ordinary skill in the art, does not include other ancillary Ethernet system componentry, such as data communication lines (data communication links), central devices (hubs), and the like. The terminal equipment is separate and apart from the central device and data communication lines. *See*, McGilvra Declaration, ¶¶11, 12. It should also be understood that the impedance is physically added to and made part of the Ethernet terminal equipment and is NOT an ancillary component. This is well documented in the '012 specification.

However, in the Request, the Requester attempts to combine the teachings of Cummings and Maman to include the use of the transmit wires 44 and 46 and data communication link 14 of Cummings to read on the claims of the '012 Patent that are specifically directed to Ethernet data terminal equipment. The Patent Owner submits that this violates the "*broadest reasonable interpretation*" (BRI) standard of "Ethernet data terminal equipment" and "data terminal equipment having an Ethernet connector," as claimed, by attempting to include physical structure that is not part of Ethernet data terminal equipment (as that term is readily understood in the art)—namely, the Requester is attempting to use the physical structure of the transmit wires 44 and 46 and the data communication link 14 that form an entire Ethernet system and not just the Ethernet data terminal equipment—to read on the claims of the '012 Patent that are specifically directed to a "piece of Ethernet data terminal equipment" itself, which, as the '012 specification discloses, is not part of the Ethernet data terminal equipment.

[14] Independent Claims 1, 31, 67, and 108.

As indicated above, Patent Owner notes that according to the Federal Circuit in 2016, the BRI standard must be *interpreted in light of the specification. PPC Broadband Inc. v. Corning Optical Commc'ns*, Docket No. 2015-1364 (Fec. Cir. 2016) at 7. Moreover, the Federal Circuit noted that application of broadest reasonable interpretation standard must be done within the "*context of this technology*" and "it [would] *See*m[] odd to construe the term . . . without recognizing the context of its use in terms of the [item] at issue." *Id. at 7.*

In this case, Patent Owner notes that, as set forth in IEEE Std. 802.3-1998, data terminal equipment (Ethernet data terminal equipment) is defined as "1.4.88 data terminal equipment (Ethernet data terminal equipment): Any *source or destination* of data *connected* to the local area network."[15] IEEE Std. 802.31-1990, further describes "Data Terminal Equipment (Ethernet data terminal equipment)" can be used in conjunction with "repeaters" (which are referred to as hubs 1 in the '012 Patent); Yet, the IEEE 802-3i-1990 notes that the "*repeater unit* [hub; central device] *is not a Ethernet data terminal equipment.*"[16]

In the specification of the '012 Patent, it is clearly understood by a person having ordinary skill in the art (PHOSITA) that the terminal equipment includes the remote module 16 and the remote module 16 is part of the Ethernet data terminal equipment and is separate from data communication lines or a central equipment. This can be seen in FIG. 2, wherein the remote module 16 is physically attached to the terminal device (i.e. PC 3a); in FIGS. 11-13, wherein the remote module 16 is contained within a box 23 that is physically coupled to the PC 3a; and in FIG. 15, wherein the remote module is the Etherlock ID card mounted in the PC. In each and every embodiment of the '012 Patent, the remote module 16 is presented as being part of the

[15] IEEE Std. 802.3-1998, page 16 (emphasis added). Emphasis throughout this Appeal Brief is that of the Patent Owner, unless otherwise noted.
[16] IEEE Std. 802.3i-1990, page 21.

terminal equipment and is never part of the "pre-existing conductors (2A-2D)" or "data communication link", the "central module 15a", the "hub 1", or other system-wide Ethernet componentry as proposed by the Requester. *See*, McGilvra Declaration, ¶¶11, 12.

Therefore, it should be understood that "Ethernet data terminal equipment" and "terminal equipment having an Ethernet connector," to which the present claims are specifically and positively recited (both in the preamble and the body of the claim), *do not include* system components such as a central device, network security systems, data communication lines, or components of an Ethernet network other than the terminal equipment itself. The claims of the '012 Patent are directed specifically and only to the terminal equipment. *See*, McGilvra Declaration, ¶¶11, 12.

Therefore, these claim terms should not be interpreted in such a way that is devoid of the specific teachings contained in the specification nor the context of their use as understood by a PHOSITA. The Patent Owner submits that the claims of the '012 Patent must be construed as being limited to Ethernet data terminal equipment or terminal equipment as those terms are understood in the art and in light of the plain meaning in the specification of the '012 Patent.

b). The Claimed Elements are Part of Ethernet Data Terminal Equipment - *The Claim Language Limits Interpretation of the Claim Elements to be Part of the Piece of Ethernet Data Terminal Equipment and Not Ancillary Equipment*

Each of the independent claims of the '012 Patent is directed to a "piece of Ethernet data terminal equipment."[17] The elements of the independent claims relate back specifically to each aforementioned element thereby tracing their inclusion and antecedents directly to the piece of Ethernet data terminal equipment and not to any ancillary Ethernet componentry. It also clear

[17] '012 Patent, Claims 1, 31, 67, and 108.

that the Ethernet data terminal equipment in the claims do not require the Ethernet data terminal equipment to be connected to data lines or a network via data lines.

Specifically, independent Claim 1, for example, claims a method for adapting "a piece of Ethernet data terminal equipment." The method includes "selecting contacts of *the Ethernet connector.*" The claim further defines that the Ethernet connector comprises "a plurality of contacts." The method includes "at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the Ethernet connector." The method then includes "coupling at least one path across the selected contacts of the Ethernet connector." It is noted that due to antecedent the path is coupled across the *selected contacts* of the *Ethernet connector* of the *Ethernet data terminal equipment.* Finally, the method includes "*associating distinguishing information about* the piece of Ethernet data terminal equipment *to impedance within the at least one path,*" wherein that path (again) is across the selected contacts of the *Ethernet connector* of the *Ethernet data terminal equipment.* This analysis is equally applicable to the remaining independent Claims 31, 67, and 108.

Therefore, because the specified steps require a "path" coupled across "selected contacts" of the "Ethernet connector" of the "Ethernet data terminal equipment" and "impedance within the at least one path" being associated to "distinguishing information" "about the piece of Ethernet data terminal equipment," it should be recognized that the claims of the '012 Patent must be interpreted as requiring these method steps and apparatus structure to be *part of the claimed Ethernet data terminal equipment itself* and excludes things that are not part of the Ethernet data terminal equipment, such as data cables and hubs. Therefore, based on the claimed structure and the associated antecedent basis, the claimed 1) path across the selected contacts and 2) the information about the piece of Ethernet data terminal equipment associated to impedance

within this path together define elements that are not present or combinable from the teachings of the recited prior art, which will be addressed herein below.

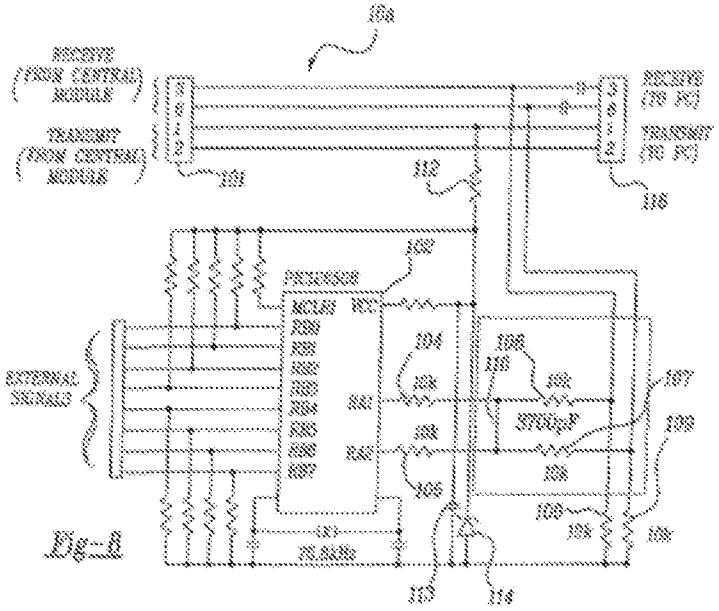
Moreover, the recited "*the Ethernet connector*" of the Ethernet data terminal equipment (known as an Ethernet jack, which is a female connector used with Ethernet terminal equipment) remains a single Ethernet connector. That is, the "plurality of contacts" refers only to "*the* Ethernet connector," which was previously claimed as being part of the Ethernet data terminal equipment—thereby not permitting interpretation to include multiple connectors within an Ethernet system (i.e. *the* Ethernet connector of *the* Ethernet data terminal equipment cannot be interpreted to include an Ethernet plug (male connector for a Ethernet cable) or other structure of other Ethernet system components). Moreover, the "selecting/selected contacts" of "*the* Ethernet connector" are selected from the plurality of contacts of the recited singular Ethernet connector—thereby not permitting interpretation to include any other connector within the overall Ethernet network system (which is not in the '012 Patent's claims).

Finally, the recited step of "coupling at least one path across the selected contacts of *the* Ethernet connector" of the Ethernet data terminal equipment continues to prevent interpretation of the at least one path being separate from *the* selected contacts of *the* Ethernet connector of *the* Ethernet data terminal equipment. In essence, the claims require that the steps and apparatus are part of *the* Ethernet data terminal equipment itself.

c). "Path" - The Claim Language Limits Interpretation of the "Path" to be Part of the Piece of Ethernet Data Terminal Equipment

As described herein, because the specified steps require a "path" coupled across "selected contacts" of "*the* Ethernet connector" of the "Ethernet data terminal equipment" and "impedance within the at least one path" being associated to "distinguishing information" "about the piece of

Ethernet data terminal equipment," it should be recognized that *the claims of the '012 Patent must be interpreted as requiring these method steps and apparatus structure to be part of the Ethernet data terminal equipment itself.* Particularly, the claimed "path" of each of the independent Claims 1, 31, 67, and 108 must be part of the claimed piece of Ethernet data terminal equipment per the claims and for the invention to work.



In fact, the claimed "path" in each independent claim is defined as being coupled "across" *the* selected/specific contacts of *the* Ethernet connector of *the* piece of Ethernet data terminal equipment. This claimed "path" is made part of, and may be integrated into the piece of Ethernet data terminal equipment, wherein the alleged data communication cable (which the Requester uses for disconnection detection) of the cited prior art is not "made part of" or integrated into" the Ethernet data terminal equipment. In fact, it is well known by a PHOSITA that the data communication lines never become part of the Ethernet data terminal equipment or central equipment. Therefore, a "path" that is part of the Ethernet data terminal equipment can never become part of a piece of central equipment or a part of the data communication lines. It is

always a part of the Ethernet data terminal equipment. This teaching is supported throughout the '012 Patent's specification.

d). "Coupling a Path" and a "Coupled Path" – *Any Attempted Decoupling of the Claimed "Path" Necessarily Fails To Read On the Claimed Structure*

Independent Claims 1, 31, 67, and 108 each claims "coupling at least one path across the selected/specific contacts of the Ethernet connector" or "at least one path coupled across selected/specific contacts." The claims further require associating or arranging impedance within this path to associate distinguishing information about the piece of Ethernet data terminal equipment.

However, any interpretation of the prior art that relies on detecting *discontinuity* (i.e. cable disconnection) for any information necessarily relies on "decoupling" of the claimed "coupled path" and, therefore, fails to meet the plain meaning of the claims. *See*, McGilvra Declaration, ¶¶13, 30, 32. In the Request, Requester argued that Cummings teaches "sensing 'DC current signal in each of the said current loops so as to detect a change in current flow indicative of disconnection of one of said pieces of associated equipment.' Cummings, claim 14."[18] However, if "disconnection" of the alleged path provides the stated information, then such "disconnection" *inherently and absolutely* fails to teach "coupling a path" or a "coupled path", and certainly does not teach associated or arranging impedance within this path to associate distinguishing information about the piece of Ethernet data terminal equipment, which will be further discussed herein below. *See*, McGilvra Declaration, ¶¶13, 30, 32.

Any interpretation of prior art that is predicated on "disconnection", "discontinuity", or "decoupling" of an alleged path must necessarily remove the claimed path—*the path is no longer*

[18] Request, at page 29.

a path because of the discontinuity. Therefore, any alleged combination of prior art that relies on discontinuity cannot coexist with the plain meaning of the claims requiring the presence of "at least one path" coupled across selected/specific contacts of the Ethernet connector of the Ethernet data terminal equipment and distinguishing information being associated with impedance with this path. *See*, McGilvra Declaration, ¶¶13, 30, 32.

e). "Distinguishing Information" - The Distinguishing Information is Positively Claimed as Being Associated to Impedance within the Path

In the Final Office Action, the Office took the position, for the first time, that the claimed "distinguishing information" is read as "distinguishing information about the piece of Ethernet data terminal equipment, including information that differentiates it from another device, *wherein the information is capable of being associated to impedance within the at least one path claimed*."[19] It is submitted that this interpretation is inconsistent with the explicit limitations of the claims of the '012 Patent.

It is noted that the independent claims of the '012 Patent, including Claims 1, 31, 67, and 108, specifically claim "*associating* distinguishing information *about* the piece of Ethernet data terminal equipment *to impedance within the at least one path*"[20], "distinguishing information *about* the piece of Ethernet data terminal equipment is *associated to impedance within the at least one path*"[21], "*arranging impedance within the at least one path* to distinguish the piece of

[19] Final Office Action, page 12.
[20] '012 Patent, claim 1.
[21] '012 Patent, claim 31.

terminal equipment"[22], and "*impedance within the at least one path arranged* to distinguish the piece of terminal equipment."[23]

It is important to note that the claims specifically require that the "distinguishing information" is "*about* the Ethernet data terminal equipment" and is arranged/associated to "impedance" within the "at least one path." The claims do not merely suggest that the "distinguishing information" can be "information . . . *capable of* being associated to impedance within the at least one path" as alleged by the Office.[24] It is critical that the "distinguishing information" is arranged/associate to the "impedance within the path" as explicitly claimed and in accordance with the plaining meaning of the claim. It is further critical that the path, as explicitly claimed, is coupled across selected/specific contacts of the Ethernet connector of the Ethernet data terminal equipment. As set forth herein, distinguishing information about the piece of Ethernet data terminal equipment is only arranged/associated to the path coupled across the selected/specific contact of the Ethernet connector of the Ethernet data terminal equipment.

The Office's interpretation of "distinguishing information" being based merely on the "information [being] *capable of* being associated to impedance" fails to fully consider the specific and positively claimed claim language and physical structure requiring that the "distinguishing information" is associated/arranged to impedance within the path (not merely capable of). Moreover, the intrinsic evidence contained in the originally filed and issued specification of the '012 Patent supports this interpretation that the distinguishing information is indeed arranged/associated to the impedance within the path coupled across the contacts of the Ethernet connector of the Ethernet data terminal equipment. Unless impedance within a path of

[22] '012 Patent, claim 67.
[23] '012 Patent, claim 108.
[24] Final Office Action, page 12.

a piece of Ethernet data terminal equipment can be used to differentiate the piece of Ethernet data terminal equipment, then it is not covered by the claims.

f). ***"About the Piece of Ethernet Data Terminal Equipment"*** *- The Distinguishing Information is "About the Piece of Ethernet Data Terminal Equipment," Not a Connection Status of a Cable, a Central Device, or a Network Security System*

Independent Claims 1 and 31 of the '012 Patent are directed to associating distinguishing information "*about* the piece of Ethernet data terminal equipment" to impedance within the at least one path. Claim 1 claims "associating distinguishing information about the piece of Ethernet data terminal equipment to impedance within the at least one path"[25] and Claim 31 claims "distinguishing information about the piece of Ethernet data terminal equipment is associated to impedance within the at least one path."[26] It is important to note that this distinguishing information is "*about* the piece of Ethernet data terminal equipment."

As described in the originally filed specification at Paragraph [0030], "the first embodiment depicts . . . communicating equipment identification information, [and] the principles of the invention may be readily extended to include the communication of more general information such as identification of the equipment processor type and the equipment hard drive capacity."[27] This distinguishing information "*about*" the Ethernet data terminal equipment is specific to the Ethernet data terminal equipment. It is unreasonable to broaden the plain meaning of the claim limitation to include simple binary connection-type information (i.e. connected/disconnected) about a connection status of an entire current loop that is not bounded to any particular part of the entire Ethernet system, especially when there is no Ethernet system per the claims. Any interpretation that

[25] '012 Patent, claim 1.
[26] '012 Patent, claim 31.
[27] '012 Patent, paragraph [0030].

reduces the claimed "distinguishing information *about* the piece of Ethernet data terminal equipment" to merely connection status along an *entire loop* extending from a central device (not in the claims) to data communication lines (not in the claims) to terminal equipment is no longer providing distinguishing information *about* the Ethernet data terminal equipment itself, but rather is providing only cable continuity information along several components through which the current loop extends. This cable continuity information is not "about the piece of Ethernet data terminal equipment," but rather is only about the cable or a system wide pathway, neither of which is in the claims or are relevant to the inventions.

D. REJECTIONS UNDER 35 U.S.C. §103

The rejections below were adopted by the Office essentially as presented in the Request for Reexamination and referred to by numbers which correspond to those presented in the Order Granting Reexamination mailed June 21, 2016. The Patent Owner will continue to follow the same convention, to the extent possible, and address each of the stated rejections in the order as presented in the Office Action mailed September 8, 2016 and further address the specific counter arguments presented in the Final Office Action mailed February 16, 2017 and the Advisory Action mailed June 14, 2017.

1. Grounds of Rejection to be Reviewed on Appeal

The Examiner has adopted the arguments set forth in Proposed Rejections 13-30 of the Request without change. Each of these rejections is primarily predicated on the combination under 35 U.S.C. §103 of Cummings in view of Maman, and is traversed herein.

REJ 13) Claims 1-3, 5-6, 10, 11, 13, 16, 18, 19, 22, 24-33, 35, 36, 40, 41, 43, 46, 48, 49, 52, 54-73, 76, 80-88, 91, 93-96, 98-104, and 106 stand rejected under 35 U.S.C. 103(a) as being obvious over Cummings (U.S. Patent No. 5,406,260; hereinafter "Cummings") in view of Maman (U.S. Patent No. 5,034,723; hereinafter "Maman").

REJ 14) Claims 4, 7-9, 14, 15, 17, 34, 37-39, 44, 45, 47, 92, 105, 107-114, 117, 121, 128, 129, 132-137, and 139-148 stand rejected under 35 U.S.C. 103(a) as being obvious over Cummings in view of Maman and PCnet (AM79C97 PCnet™-FAST Hardware User's Manual (July 1996); hereinafter "PCnet").

REJ 15) Claims 12, 42, and 89 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman and Annunziata et al. (U.S. Pat No. 4,551,671; hereinafter "Annunziata").

REJ 16) Claims 20, 50, 77, and 78 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman and Johnson (U.S. Pat No. 5,524,184; hereinafter "Johnson").

REJ 17) Claims 21, 23, 51, 53, 79, and 97 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman and Bloch et al. (U.S. Pat No. 4,173,714; hereinafter "Bloch").

REJ 18) Claims 74, 75, and 81-86 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman and Sutterlin et al. (U.S. Pat No. 5,148,144; hereinafter "Sutterlin").

REJ 19) Claim 90 is allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman and Sutterlin.

REJ 20) Claims 115, 116, and 122-127 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Libby (U.S. Pat No. 3,803,423; hereinafter "Libby").

REJ 21) Claims 118 and 119 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Johnson.

REJ 22) Claims 120 and 138 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Bloch.

REJ 23) Claim 130 is allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Annunziata.

REJ 24) Claim 131 is allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Sutterlin.

REJ 25) Claims 1-11, 13-19, 22, 24-41, 43-49, 52, 54-73, 76, 80-88, 91-96, 98-114, 117, 121, 128, 129, 132-137, and 139-148 stand rejected under pre-AIA 35 U.S.C. 103(a) as being obvious over Cummings in view of Maman and PCnet.

REJ 26) Claims 12, 42, 89, and 130 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Annunziata.

REJ 27) Claims 20, 50, 77, 78, 118, and 119 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Johnson.

REJ 28) Claims 21, 23, 51, 53, 79, 97, 120, and 138 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Bloch.

REJ 29) Claims 74, 75, 81-86, 115, 116, and 122-127 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Libby.

REJ 30) Claims 90 and 131 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Sutterlin.

2. Summary of the Cited Prior Art

a). Cummings (U.S. Patent No. 5,406,260)

Cummings was cited during the prosecution of the '012 Patent.

First, Cumming teaches the use of existing wiring within a BaseT Ethernet network (e.g. 10BaseT) and the use of an existing path through a piece of terminal equipment in order to form an associated current loop. The existing path through the piece of terminal equipment is the field winding of an isolation transformer. The associated current loop allows for an indication of physical connection (of the piece of terminal equipment) to the network based on the flow of current through the associated current loop and an indication of physical disconnection (of the piece of terminal equipment) from the network based on the cessation of flow through the associated current loop.

Second, Cummings does not teach adapting any Ethernet data terminal equipment. Cummings merely employs an existing field winding of an isolation transformer of the terminal equipment to complete the current loop with transmit wires of the data communication link. The existing field winding is identical among terminal equipment and provides no impedance (just admittance) therein. Moreover, Cummings specifically teaches away from adapting any Ethernet data terminal equipment ("These approaches [i.e. installing special electronic card], however, are generally undesirable since they require the incorporation of additional components into each machine."[28]).

[28] Cummings, at 1:61-64.

Third, Cumming does not (and cannot) teach associating "distinguishing information" about a piece of Ethernet data terminal equipment to "impedance," much less to impedance within the path through the field winding of the isolation transformer. Again, the existing field winding is identical among each terminal equipment and provides no impedance (just admittance) therein.

Fourth, there is no way to "distinguish" the piece of terminal equipment based on an indication of physical connection as the path in each terminal equipment is identical. That is, the impedance/admittance for all of the terminal equipment of Cummings are identical. Moreover, the impedance/admittance of each terminal equipment in Cummings is undetectable because it is substantially less than the impedance in the data lines that are used to connect the terminal equipment to the network.

Finally, Cummings (and/or Ethernet) does not teach the bridging of conductors as in Maman, as doing so is fatal to Ethernet, and does not teach an upgraded Ethernet controller chip much less installed on network interface as in PCnet.

b). Maman (U.S. Patent No. 5,034,723)

Maman was cited during the prosecution of the '012 Patent and discloses an AC power cable for use with electronic equipment.

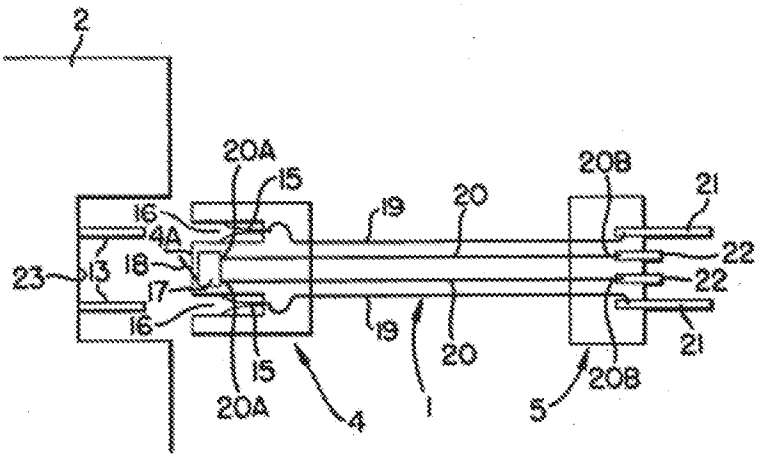


FIG. 2

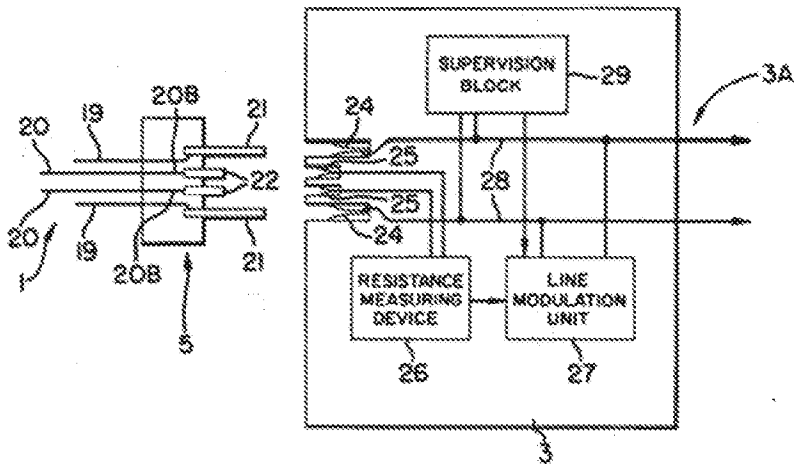


FIG. 3

First, Maman does not disclose Ethernet (and cannot be combined with Ethernet).

Second, Maman, in contrast to Cummings, does not teach the use of existing BaseT wiring and/or a path *through* a piece of terminal equipment for any purpose. In fact, Maman disavows the use of *any* existing wiring including the AC wiring and/or *any* existing path through a piece of terminal equipment including the AC power path.[29]

[29] Maman, at 6:25-28.

Third, Maman, in contrast to the '012 Patent, does not teach the use of existing contacts of an Ethernet connector for anything, much less to adapt a piece of terminal equipment as recited in the independent claims of the '012 Patent. In fact, Maman, again disavows the use of *any* existing contacts of *any* connector including the existing prongs and sockets of the AC power cable.[30] Maman modifies an AC power cable with a new mechanical interface that employs bridging elements e.g., a micro-switch in one end of the adapted cable or a shorting bar within the housing of the AC power cable at the equipment. *See*, McGilvra Declaration, ¶21. These bridging elements are part of a new mechanical interface that bridges together dedicated status conductors (which are not part of the existing wiring) in order to determine the state of the modified AC power cable. It should be understood that bridging of the existing data communication lines/links and/or existing contacts is not allowed in Ethernet communications and/or in AC power delivery. Moreover, it should be understood that these bridging elements are not unique nor provide any particular impedance that can be associated to the electrical equipment of Maman.

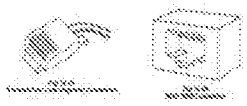
Finally, the state of connection of the modified AC power cable of Maman does not provide distinguishing information about "the adapted cable," much less distinguishing information about a piece of electrical equipment of Maman. In fact, there is no distinguishing information "associated" or "arranged" about the electrical equipment to impedance within the "adapted cable" of Maman.

Furthermore, the cabling, connectors, and mating elements of Maman are incompatible with either Cummings or PCnet, or Ethernet in general, as outlined in the table below. As can be

[30] Maman, at 6:25-28.

seen, the AC power cabling provided for in Maman is incompatible with Ethernet communication (IEEE 802.3i).

Comparison Table



	Maman Status Conductors	Male AC wiring	Male w/Gnd AC wiring	Female AC wiring	Ethernet BaseT wiring
Standard, Patent	Patent US5034723A	NEMA	NEMA	NEMA	802.3i / EIA-568
Pairs	None	None	None	None	1-2, 3-6, 4-5, 7-8
# of conductors	2	2	3	3	8 (per EIA-568 & TSB-36)
Gauge	Unspecified	12-20 AWG	12-20 AWG	12-20 AWG	22-26 AWG (0.4 to 0.6 mm diameter)
Twists per foot	N/A	N/A	N/A	N/A	Yes - 3-4 for CAT. 3, 35-50 for CAT. 5
Gender on Equipment	N/A	Male	Male	Male	Female
Characteristic Impedance	None	N/A	N/A	N/A	100 ohms
Cable Category Rating	None	N/A	N/A	N/A	Cat. 3 or better (Per TSB-36)
Connector Category Rating	None	NEMA 1-15P	NEMA 5-15P	IEC 320 C13	8P8C (Per TSB40)
Safety	Unspecified	UL 498	UL 498	UL 498	Isolation Required (Per IEC 60950-1)
Max Voltage	Unspecified	125V	125V	125V	60V (Per SELV)
Max Current	Unspecified	15A	15A	15A	1A per twisted pair / 0.5A Per Conductor
Cable polarity	Yes	Yes	Yes	Yes	No

c). PCnet (AM79C97 PCnet™-FAST Hardware User's Manual (July 1996))

PCnet discloses an upgraded Ethernet Controller Chip for PCI Local Bus and its installation on a PCnet-FAST board.

First, PCnet, in contrast to Cummings, does not teach the use of existing BaseT wiring and/or a path *through* a piece of terminal equipment to form an associated current loop for any purpose - at least because, as a core tenet of Ethernet, Ethernet communications signals do not travel through a current loop.

Second, the Ethernet Controller Chip of PCnet, in contrast to the '012 Patent, does not teach the use of existing contacts of an Ethernet connector to adapt a piece of terminal equipment as recited in the independent claims of the '012 Patent. In fact, the Ethernet Control Chip disavows the use of *any* existing contacts of *any* Ethernet connector and uses a 160 pin surface mount connection.

Third, the PCnet-FAST Board does not teach a piece of Ethernet data terminal equipment, much less a piece of terminal equipment that is "adapted" based on existing contacts of an Ethernet connector to include a path coupled across selected or specific contacts of the Ethernet connector and that "distinguishing information" about the piece of terminal equipment is associated to impedance within this path. PCnet merely teaches adapting a controller on an Ethernet NIC card, regardless of whether that NIC card is every installed in Ethernet data terminal equipment. It should be noted that the new and old controller of PCnet are disposed on an opposite side of an isolation barrier and are never within Requester's proposed path. It should also be noted that all of the PCnet Ethernet NIC cards would have the ***same*** (not detectable) impedance like is taught in Cummings, and therefore, cannot teach the '012 Patent's claims.

Finally, the bridging elements alone (from Maman) preclude any combination of PCnet with Maman to the extent PCnet discloses Ethernet communications.

d). Annunziata et al. (U.S. Patent No. 4,551,671)

Annunziata was cited during the prosecution of the '012 Patent.

Annunziata merely teaches "[a] device, method and system for testing in situ the wiring between a data terminal equipment and a ring or similar type local area network having a loop conduction path with a plurality of data terminal equipment (DTE) coupled to said loop conduction path. The DTE is provided with a mechanism for generating DC current. The DC currents flow from the DTE through a length of interconnecting conductors and self-shorting connectors towards the loop conduction path."[31] The Requester indicates that "Annunziata is

[31] Annunziata, Abstract.

provided for the sole purpose of illustrating a Zener diode in a media wire fault detect mechanism."[32]

First, the DTE of Annunziata is never an "Ethernet data terminal equipment." A stated above, Annunziata was used for certain ring topology networks, which Ethernet is not a ring topology network—it is a star topology network. Secondly, BaseT Ethernet data terminal equipment never put power to an Ethernet cable. Thirdly, there would be no use of the DC current if there was a DC current provided by the DTE. Fourth, the reason for the DC signal in Token Ring was directed to the use of wrapback connector on shielded twisted pair cabling used by Token Ring networks. As there are no such connectors used in Ethernet, there would be no basis to have a DC current on the lines. In fact, self-shorting (wrapback) connector necessary to seal the ring and to detect broken wires in Token Ring networks are fatal to Ethernet communications because it would cause a broadcast storm. Fifth, Annunziata nowhere teaches the use of a Zener diode with his invention—the only occurrence of the term "Zener diode" appears in the Background of the Invention in the Prior Art Section. Annunziata does not provide any teachings on the use of Zener diodes or how one would be used as claimed in the '012 Patent. Finally, Annunziata is unable to detect or otherwise determine any distinguishing information about the data terminal equipment because impedance of each data terminal equipment would be identical.

e). Johnson (U.S. Patent No. 5,524,184)

Johnson merely teaches "[a]n on-line barcode printer is shown for communicating with one of a number of host computers having various communication parameters."[33] The Requester indicates that "Johnson is provided for the purpose of illustrating signal durations based on baud

[32] Request, page 16.
[33] Johnson, Abstract.

rate."[34] However, Johnson is unable to detect or otherwise determine any distinguishing information about the data terminal equipment. Moreover, Johnson is silent with regard to Ethernet and provides no motivation to combine with Cummings, Maman, and/or PCnet.

f). Bloch et al. (U.S. Patent No. 4,173,714)

Bloch was cited during the prosecution of the '012 Patent.

Bloch merely teaches "a circuit arrangement in which first and second communication channels are provided over two conductor pairs which are simultaneously used for power feed and bi-directional signaling (sic) between first and second equipment units. These first and second equipment units are a control unit and key telephone station sets in a key telephone system."[35]

There is no Ethernet anything that existed at the time of Bloch and Bloch is unable to detect or otherwise determine any distinguishing information about the data terminal equipment as any impedance would be fatal to sending keystrokes.

g). Sutterlin et al. (U.S. Patent No. 5,148,144)

Sutterlin was cited during the prosecution of the '012 Patent.

Sutterlin merely teaches a "data communications network for delivering power and communications over the same cable bundle includes a plurality of communications nodes wherein associated with each of the nodes is a transformer having a core, a primary winding and a secondary winding. The secondary winding has a centertap connection which either splits or merges the current in the secondary winding to eliminate net DC flux within the transformer. A DC/DC converter is also included for transforming the relatively high DC voltage of the cable

[34] Request, page 19.
[35] Bloch, at 2:54-61.

down to a regulated supply potential for use by that node. The converter is coupled between the centertap of the transformer and the cable bundle. A power source provides the DC voltage distributed across the network and is coupled to the cable bundle via a centertap connection of another winding."[36]

However, Sutterlin is completely silent with regard to determination of any physical connection of a piece of terminal equipment to a data network via a flow of current through an associated current loop and is unable to determine any distinguishing information about the piece of terminal equipment.

h). Libby (U.S. Patent No. 3,803,432)

Libby merely teaches "an electric motor with a spherical air gap, wherein the rotor is supported by a bearing permitting rotation and rocking about the center of curvature of this gap. Both the stator and the rotor have elements with concentric surfaces of revolution in relation to the axis of rotation and facing each other which so overlap each other that they prevent a separation between rotor and stator."[37] The Requester indicates that "Libby is provided for the purpose of illustrating continuously variable impedance."[38] However, Libby is silent with regard to Ethernet and provides no motivation to combine with Cummings, Maman, and/or PCnet.

3. Legal Basis for Motivation to Combine References

In *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), the Supreme Court held that the motivation to combine references need not be found expressly in the prior art itself but may be explained by the fact finder using common sense. Still, the *KSR* Court wrote that it "can be

[36] Sutterlin, Abstract.
[37] Libby, Abstract.
[38] Request, page 18.

important to identify a reason that would have prompted [PHOSITA] to combine the elements in the way the claimed new invention does."

Extending that decision, in 2016, the Federal Circuit ruled that the Board *must* (1) "articulate a reason why a PHOSITA would combine the prior art references"; (2) have an adequate evidentiary basis for that finding; and (3) provide a "satisfactory explanation" for the motivation finding that includes an express and "rational" connection with the evidence presented. *See, In re Sang-Su Lee*, 277 F.3d 1338 (Fed. Cir. 2002) (conclusory statements are insufficient); *Cutsforth, Inc. v. MotivePower, Inc., No. 2015-1316 (Fed. Cir. Jan. 22, 2016).* (must positively explain motivation – not just reject arguments against motivation).

In fact, the Federal Circuit has stated that "*conclusory statements*" *alone are insufficient* to support motivation to combine analysis and, instead, the finding must be supported by a "reasoned explanation." *In re Lee*, 277 F.3d at 1342, 1345. In 2016, the Court further stated that "[s]econd, it is not adequate to summarize and reject arguments without explaining why the PTAB accepts the prevailing argument. *See Cutsforth, Inc. v. MotivePower, Inc.* , 636 F. App'x 575, 578 (Fed. Cir. 2016) ("The majority of the [PTAB]'s Final Written Decision is spent summarizing the parties' arguments and offers only conclusory analysis of its own. While the decision does specify when it is rejecting a party's argument, the [PTAB] does not explain why it accepts the remaining arguments as its own analysis." *In re: Nuvasive, Inc.*, Nos. 2015-1672, 2015-1673 (Fed. Cir. Nov. 9, 2016).

Finally, the Federal Circuit has unequivocally admonished the Board when "[t]he board did not adequately support its findings that the prior art disclosed all elements of the challenged claims and that a relevant skilled artisan would have had a motivation to combine the prior-art

references to produce the claimed … inventions with a reasonable expectation of success." *Personal Web Technologies, LLC v. Apple, Inc.*, No. 2016-1174 (Fed. Cir. Feb. 14, 2017).

a). Requester Failed To Articulate Sufficient Motivation to Combine Cummings and Maman (and PCnet)

When applying the aforementioned legal principles, it is clear that the Requester has failed to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason why a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the motivation finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*. Moreover, the Requester's stated motivation amounts to merely *conclusory statements that are insufficient* to support motivation to combine analysis and, thus, fail to provide a "reasoned explanation." *Id.*

In the Office Action and Final Office Action, the Office points to "pages 27-28" of the Request as providing "reasons for combining" Cummings and Maman in each and every rejection (specifically, REJ 13-30).[39] This rationale is insufficient in light of *In re Lee*. Although the Requester provides a summary of the legal standards relevant to establish a motivation to combine prior art references, when it comes to actually articulating the reason why a PHOSITA would combine Cummings and Maman (and PCnet), the evidentiary basis for such, and a satisfactory explanation regarding the motivation, the Requester simply states, *in toto*:

> "Cummings and Maman both describe theft prevention using impedance detection."[40]

[39] Office Action, pages 5-11; Final Office Action, pages 5-11.
[40] Request, page 27.

However, this single sentence of merely ten words fails to provide an adequate evidentiary basis and satisfactory explanation to arise to the level of establishing why a "relevant skilled artisan would have had a motivation to combine the prior-art references to produce the claimed ... inventions with a reasonable expectation of success." *See, Personal Web Technologies, LLC.*

Although not specifically referenced in the Office Action or the Final Office Action, during the interview conducted with the Examiner panel on May 3, 2017, Examiner Craver further pointed to page 30 of the Request as allegedly providing motivation to combine Cummings and Maman. This portion of the Request to which the Examiner pointed states, *in toto*:

> To the extent it is determined a person of ordinary skill in the art of electronics does not know Ohm's Law, *Cummings can be combined with Manan (sic), which explicitly teaches associating distinguishing information about the data terminal equipment to impedance within a corresponding path.*[41]

However, it is noted that the Requester is merely restating the terminology of the claim verbatim (rather than any teachings of Cummings or Maman) to make a *conclusory statement* that Cummings can be combined with Maman. However, the Federal Circuit has indicated that such *conclusory statements are insufficient* to support motivation to combine analysis without a reasoned explanation. *See, In re Lee.*

Accordingly, the Requester has failed to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason why a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory

[41] Request, pages 30, 55, 81, 115.

explanation for the motivation finding that includes an express and "rational" connection with the evidence presented.

Finally, Patent Owner notes that combination of Cummings and Maman fails to provide a reasonable expectation of success and, in fact, would render Cummings unsatisfactory for its intended use and further changes the principles of operation of Cummings and Maman. *See*, McGilvra Declaration, ¶¶14, 20, 22, 34, 48. As previously described, Cummings states that it provides "a security system which feasibly employs separate current loops provided through an existing data communication link to monitor the presence of remotely located computer equipment."[42] Modification of Cummings to employ an unnecessary bridging element (e.g. micro switch or shorting bar) from Maman would result in shorting the Ethernet data communication lines of Cummings and, thus, destroy Ethernet communication in Cummings. *See*, McGilvra Declaration, ¶¶14, 20, 22, 34, 48. Consequently, Cummings would be rendered unsatisfactory for its intended purpose of monitoring the presence of remotely located computer equipment through an "existing data communication link." *See*, McGilvra Declaration, ¶¶14, 20, 22, 34, 48. Moreover, the proposed combination of Cummings and Maman would clearly change the principles of operation of Cummings and Maman. *See*, McGilvra Declaration, ¶¶14, 20, 22, 34, 48. More particularly, implementation of the new mechanical interface of Maman on the existing wiring of Cummings is fatal to the use of the existing lines in Cummings. *See*, McGilvra Declaration, ¶¶14, 20, 22, 34, 48. A PHOSITA would not look to Maman when contemplating "distinguishing information" in a system utilizing Ethernet as the AC power cable of Maman is incompatible with Ethernet. *See*, McGilvra Declaration, ¶34.

[42] Cummings, at 2:17-21.

b). DyStar Requires that the Explicit Reasoned Explanation Include an Explanation as to the Motivation to Combine, Reasonable Expectation of Success, and Additional Findings

To reject a claim, as described in MPEP § 2143, the Office must resolve the *Graham* factual inquiries. Then, the Office must articulate the following:

> "(1) a finding that there was some teaching, suggestion, or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
>
> (2) a finding that there was reasonable expectation of success; and
>
> (3) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness. "

MPEP § 2143. The rationale to support a conclusion that the claim would have been obvious is that "*a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and whether there would have been a reasonable expectation of success in doing so.*" *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360, 80 USPQ2d 1641, 1645 (Fed. Cir. 2006), emphasis added. *If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art.*

c). There is No Reasonable Expectation of Success When Combining Cummings and Maman

Where there is a reason to modify or combine the prior art to achieve the claimed invention, the claims may be rejected as *prima facie* obvious *provided there is also a reasonable expectation of success. In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986),

emphasis added. Obviousness does not require absolute predictability; however, *at least some degree of predictability is required.* Evidence showing there was no reasonable expectation of success may support a conclusion of nonobviousness. *In re Rinehart,* 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) (Claims directed to a method for the commercial scale production of polyesters in the presence of a solvent at superatmospheric pressure were rejected as obvious over a reference which taught the claimed method at atmospheric pressure in view of a reference which taught the claimed process except for the presence of a solvent. The court reversed, finding there was no reasonable expectation that a process combining the prior art steps could be successfully scaled up in view of unchallenged evidence showing that the prior art processes individually could not be commercially scaled up successfully.). Whether an art is predictable or whether the proposed modification or combination of the prior art has a reasonable expectation of success is determined at the time the invention was made. *Ex parte Erlich,* 3 USPQ2d 1011, 1016 (Bd. Pat. App. & Inter. 1986).

In the present case, at the time the invention was made or *in arguendo* today, there is no reasonable expectation of success when combining Cummings and Maman. As indicated herein, Cummings teaches the use of existing BaseT wiring used to carry Ethernet communication signals and the use of an existing path (the field winding of an isolation transformer) through the piece of terminal equipment to form an associated current loop in order to provide an indication of physical connection of a piece of Ethernet data terminal equipment to the BaseT network based on the flow of current through the associated current loop without making any changes (e.g. adding impedance or bridging elements) that would adversely affect the Ethernet communication signals and/or the use of the BaseT wiring for Ethernet communications. On the other hand, Maman does teach the use of any existing wiring (i.e. not existing BaseT and not

existing AC power cables) and does teach the use of any path through a piece of equipment. Therefore, Maman has to adapt the AC power cable with a new mechanical interface that employs a new bridging element (e.g. micro switch 17 or shorting bar 31) that cannot be employed with the existing wiring from Cummings or Maman. To this end, Maman must add dedicated conductors with no other use than as "status conductors (20)" in order to determine the connection state of the adapted AC power cable based on the mechanical engagement of the bridging elements when the adapted AC power cable is connected to the piece of equipment. These bridging elements are fatal to the use of the existing wiring for carrying Ethernet communication signals in Cummings and for carrying AC power in Maman and therefore require the addition of dedicated conductors with no other use. It should be noted that Maman confirms this fatal limitation in the specification and the claims ("said status conductors being formed from conductors which are other than ungrounded power conductors for carrying power from said power source to said equipment."[43]).

Furthermore, the cabling, connectors, and mating elements of Maman are incompatible with either Cummings or PCnet as outlined in the table below. As can be seen, the cabling provided for in Maman is specifically incompatible with Ethernet communication (IEEE 802.3i).

[43] Maman, at Claims 1, 28

Comparison Table

	Maman Status Conductors	Male AC wiring	Male w/Gnd AC wiring	Female AC wiring	Ethernet BaseT wiring
Standard, Patent	Patent US5034723A	NEMA	NEMA	NEMA	802.3i / EIA-568
Pairs	None	None	None	None	1-2, 3-6, 4-5, 7-8
# of conductors	2	2	3	3	8 (per EIA-568 & TSB-36)
Gauge	Unspecified	12-20 AWG	12-20 AWG	12-20 AWG	22-26 AWG (0.4 to 0.6 mm diameter)
Twists per foot	N/A	N/A	N/A	N/A	Yes - 3-4 for CAT. 3, 35-50 for CAT. 5
Gender on Equipment	N/A	Male	Male	Male	Female
Characteristic Impedance	None	N/A	N/A	N/A	100 ohms
Cable Category Rating	None	N/A	N/A	N/A	Cat. 3 or better (Per TSB-36)
Connector Category Rating	None	NEMA 1-15P	NEMA 5-15P	IEC 320 C13	8P8C (Per TSB40)
Safety	Unspecified	UL 498	UL 498	UL 498	Isolation Required (Per IEC 60950-1)
Max Voltage	Unspecified	125V	125V	125V	60V (Per SELV)
Max Current	Unspecified	15A	15A	15A	1A per twisted pair / 0.5A Per Conductor
Cable polarity	Yes	Yes	Yes	Yes	No

Again, it should be noted that the newly formed mechanical interface between one end of an adapted AC power cable and the housing of an AC power connector at the equipment is provided as a dedicated detection line in Maman—it is not provided for any other multi-functional purpose. There is no teaching in Cummings or Maman that would provide any suggestion that the dedicated detection line of Maman can be combined with the Ethernet data communication line of Cummings and permit multi-functional operation (i.e. power transmission for Maman and/or Ethernet data communication for Cummings detection).

d). Combination of Cummings and Maman Renders The Prior Art Unsatisfactory For Its Intended Purpose

"*If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.*" *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984), (Claimed device was a blood filter assembly for use during medical procedures wherein both the inlet and outlet for the blood were located at the bottom end of the filter assembly, and wherein a

gas vent was present at the top of the filter assembly. The prior art reference taught a liquid strainer for removing dirt and water from gasoline and other light oils wherein the inlet and outlet were at the top of the device, and wherein a pet-cock (stopcock) was located at the bottom of the device for periodically removing the collected dirt and water. The reference further taught that the separation is assisted by gravity. The Board concluded the claims were *prima facie* obvious, reasoning that it would have been obvious to turn the reference device upside down. The court reversed, finding that if the prior art device was turned upside down it would be inoperable for its intended purpose because the gasoline to be filtered would be trapped at the top, the water and heavier oils sought to be separated would flow out of the outlet instead of the purified gasoline, and the screen would become clogged.) (emphasis added).

As described in the preceding section and elsewhere herein, the proposed modification of Cummings and Maman would render Cummings unsatisfactory for its intended purpose. Cummings states that it provides "a security system which feasibly employs separate current loops provided through an *existing data communication link* to monitor the presence of remotely located computer equipment."[44] As discussed above, modification of Cummings to employ an *unnecessary* bridging element (e.g. micro switch or shorting bar) from Maman would result in shorting the Ethernet data communication lines of Cummings and, thus, destroy Ethernet communication in Cummings. Consequently, Cummings would be rendered unsatisfactory for its intended purpose of monitoring the presence of remotely located computer equipment through an "*existing* data communication link."

e). Combination of Cummings and Maman Cannot Change the Principles of Operation of the Reference

[44] Cummings, at 2:17-21

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 813, 123 USPQ 349, 352 (CCPA 1959) (Claims were directed to an oil seal comprising a bore engaging portion with outwardly biased resilient spring fingers inserted in a resilient sealing member. The primary reference relied upon in a rejection based on a combination of references disclosed an oil seal wherein the bore engaging portion was reinforced by a cylindrical sheet metal casing. Patentee taught the device required rigidity for operation, whereas the claimed invention required resiliency. The court reversed the rejection holding the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.").

In the present matter, as outlined in the preceding section and elsewhere herein, the proposed modification of Cummings and Maman would clearly change the principles of operation of Cummings and Maman. More particularly, implementation of the new mechanical interface of Maman on existing wiring within Maman or Cummings is fatal to the use of the existing lines in both Maman and Cummings. BaseT Ethernet communication is predicated on the fact that Ethernet data can only travel one direction on a twisted wire-pair. To send and receive data, two twisted wire-pairs are needed. Moreover, Ethernet data does not travel in a round trip. Any implementation of the mechanical interface of Maman would violate these Ethernet principles and the results would be fatal to Ethernet communication. Accordingly, modification of Cummings and Maman would necessarily result in changing the principles of operation of Cummings and Maman.

4. Rejection under 35 U.S.C. §103 over Cummings in view of Maman (and PCnet)

REJ 13) Claims 1-3, 5-6, 10, 11, 13, 16, 18, 19, 22, 24-33, 35, 36, 40, 41, 43, 46, 48, 49, 52, 54-73, 76, 80-88, 91, 93-96, 98-104, and 106 stand rejected under 35 U.S.C. 103(a) as being obvious over Cummings in view of Maman.

REJ 14) Claims 4, 7-9, 14, 15, 17, 34, 37-39, 44, 45, 47, 92, 105, 107-114, 117, 121, 128, 129, 132-137, and 139-148 stand rejected under 35 U.S.C. 103(a) as being obvious over Cummings in view of Maman and PCnet.

REJ 25) Claims 1-11, 13-19, 22, 24-41, 43-49, 52, 54-73, 76, 80-88, 91-96, 98-114, 117, 121, 128, 129, 132-137, and 139-148 stand rejected under pre-AIA 35 U.S.C. 103(a) as being obvious over Cummings in view of Maman and PCnet.

There rejections are traversed.

It is noted that independent Claims 1, 31, and 67 are rejected as being unpatentable over Cummings in view of Maman. Additionally, Claims 1, 31, 67, and 108 are rejected as being unpatentable over Cummings in view of Maman and PCnet.

Patent Owner establishes in the tables below that Cummings and Maman (and PCnet), singly or in combination, fail to teach or suggest the claim limitations as clearly and specifically claimed.

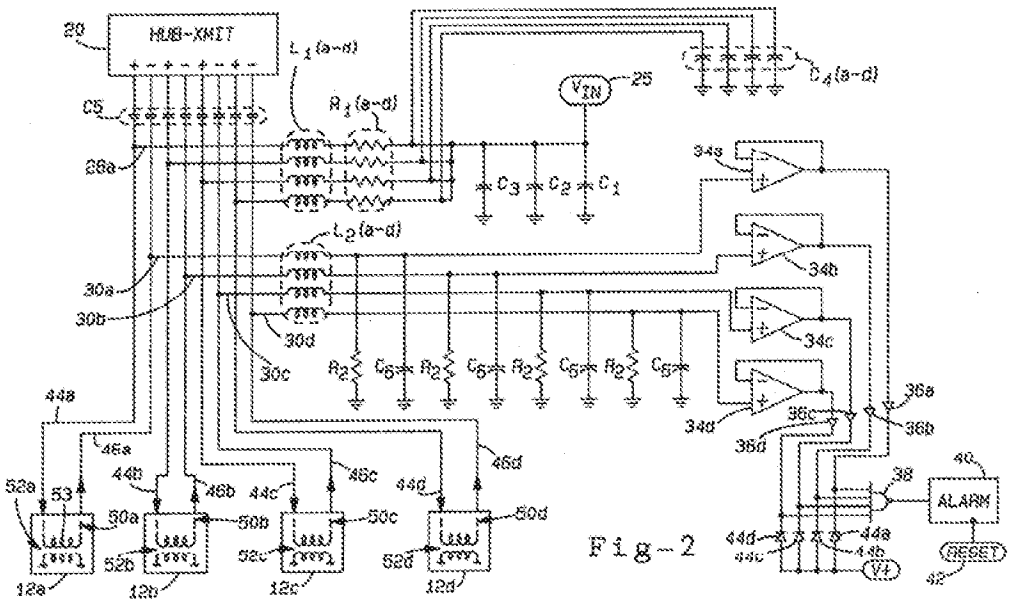
a). Independent Claim 31

Patent Owner will first address independent Claim 31, and then will address independent Claims 1, 67, and 108, separately, thereafter.

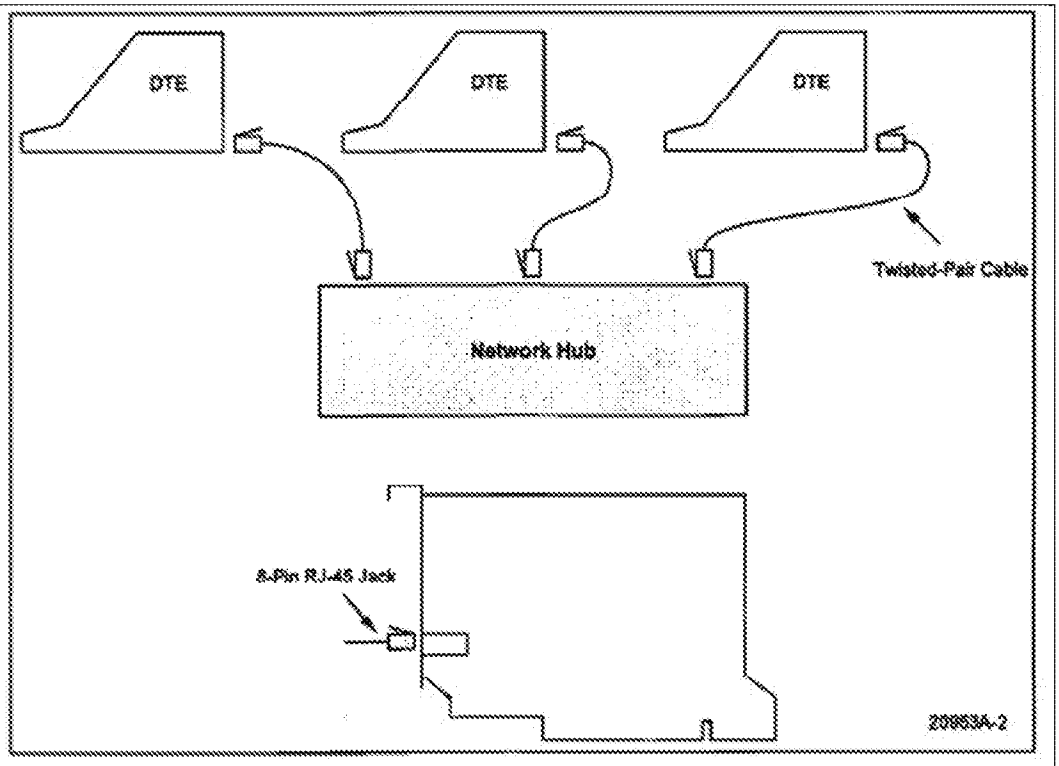
Claim 31	Arguments Relating to Cummings and Maman
31. An adapted piece	Based on the analysis above, it should be understood that the present claim is directed to, specifically, a "piece of Ethernet data terminal equipment." That is,

of Ethernet data terminal equipment comprising:	as understood by a PHOSITA, Ethernet data terminal equipment is a device at which *Ethernet data transmission can originate or terminate*. Accordingly, the "piece of Ethernet data terminal equipment" must, itself, include the recited structure of the claim. *See*, McGilvra Declaration, ¶12. With particular regard to Cummings, it is worth noting that the Requester merely uses Cummings to "teach[] Ethernet." Request, at page 54. Moreover, the Requester does not allege that Cummings teaches a "piece of Ethernet data terminal equipment." Indeed, Cummings fails to teach an adapted piece of Ethernet data terminal equipment as specifically claimed. Cummings merely teaches using an existing computer 12 having an existing winding 53 of an isolation transformer 52. Cummings does not adapt, configure, modify, or design the computer 12 ("These approaches, however, are generally undesirable since they require the incorporation of additional components into each machine." Cummings, at 1:61-64.). With particular regard to Maman, the Requester correctly notes that Maman does not teach Ethernet. Request, at page 54. However, Patent Owner also notes that Maman fails to even teach or suggest any Ethernet data terminal equipment (i.e. a device at which *Ethernet data transmission can originate or terminate*). Maman merely teaches "electronic equipment 2, in this case shown as a computer" that is monitored via disconnection of its AC power cable. Maman, at 3:5-20, *See*, McGilvra Declaration, ¶21, 29. However, the electronic equipment 2 of Maman is NOT described as having *any* Ethernet, much less data terminal equipment. *See*, McGilvra Declaration, ¶¶25, 26. Maman NEVER teaches or envisions use of Ethernet in any form and provides no structure related thereto. In fact, it is improper to infer that the electrical equipment (computer) of March 1, 1990 (Maman's filing date) had any Ethernet components or functionality. Therefore, Maman does not actually teach "a piece of Ethernet data terminal equipment" as alleged by the Requester, because the computer of Maman cannot even be considered "Ethernet data terminal equipment" as that term is used in Ethernet systems. Moreover, a PHOSITA would not rely on Maman for any teachings relating to Ethernet, as Maman is only focused on a power cable solution, and power cables and Ethernet are not compatible. See, McGilvra Declaration, ¶18.

	As established herein, the Requester has failed to provide *any* support for establishing a motivation to combine Maman with Cummings or any other reference. Notwithstanding, Patent Owner notes that a PHOSITA would not be motivated to combine Maman with Cummings because, at least, 1) any combination is fatal to Ethernet communications (*See*, McGilvra Declaration, ¶48), and 2) Maman or Cummings would not require the theft detection solution of the other as they are mutually exclusive and provide a separate and distinct solution to the same problem. Finally, Cummings, PCnet, and Maman fail to teach any workable combination of the micro-switch or shorting bar of Maman within an Ethernet system.
an Ethernet connector comprising a plurality of contacts;	It is noted that the piece of Ethernet data terminal equipment is claimed as having an "Ethernet connector comprising a plurality of contacts." The Requester relies on Cummings to teach this element. As noted above, the Requester does not specifically identify where in Cummings a "piece of Ethernet data terminal equipment" is located. However, it appears from the Requesters arguments that the Requester reads the "transmit wires 44a through 44d and 46a through 46d" of the "data communication link 14" to apply to the present claim element. However, it is noted that these transmit wires transmit wires 44a through 44d and 46a through 46d of the data communication link 14 are NOT part of any *Ethernet data terminal equipment*. As understood by a PHOSITA, data communication links or lines are used to connect a terminal device to a central device, but are never "part of" either the central device or the terminal device. Here, in Cummings, the transmit wires of the data communication link are not part of the computer 12a through 12d.

	 Fig-2 Accordingly, a PHOSITA would not conclude that the data communication link/lines and the transmit wires of Cummings would read on the Ethernet connector of a piece of Ethernet data terminal equipment having a plurality of contacts. *See*, McGilvra Declaration, ¶14, To a PHOSITA, transmit wires are wires of a data cable, not the "contacts" of an "Ethernet connector." *See*, McGilvra Declaration, ¶15.
and at least one path coupled across selected contacts, the selected contacts comprising at least one of the plurality of contacts of the Ethernet connector and at least another one	As established herein, it is noted that the path is specifically claimed as being across selected contacts of the plurality of contacts of the Ethernet connector *of the* piece of Ethernet data terminal equipment as understood by a PHOSITA. *See*, McGilvra Declaration, ¶19. The Requester and the Office (during the interview conducted on May 3, 2017) rely on the *transmit wires of the data communication link* to read on the "path" across the selected contacts. This would permit the transmit wires 44a-44d and 46a-46d of the data communication link 14 to be plugged into and out of the computer 12a through 12d. This fact clearly establishes that the transmit wires of the data communication link are *definitionally separate* from the terminal equipment (computer). Therefore, a PHOSITA could only conclude that this alleged "path" is NOT part of any Ethernet connector, much less a piece of terminal equipment. Moreover, the Requester's attempt to read the transmit wires of the data communication link on the present claim limitation is not in harmony with the specific claim language requiring that the "path [is] coupled across selected contacts . . . of the Ethernet connector." Accordingly, it is improper to attempt

of the plurality of contacts of the Ethernet connector,	to apply connecting across transmit wires of *a data communication link* to the specifically recited *Ethernet data terminal equipment* of the present claim. Again, the Requester appears to rely on transmit wires 44a-44d and 46a-46d of data communication link 14 to teach "selected contacts." However, in its Request, the Requester also points to the 802.3i standard for the limitation regarding "selecting contacts." Request, at page 55. Specifically, the Requester states: "The 'selected contacts' therefore comprise at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the Ethernet connector (i.e., the pair). A path is coupled across contact pairs, and specifically across the 'selected contacts.'" Request, at page 55. However, the Requester merely restates the claim language, but does not actually explain how one is to bridge the gap between Cummings and IEEE 802.3i with respect to the claim language. *See*, McGilvra Declaration, ¶¶15, 19. IEEE 802.3i represents a cable, but it does not represent the connector at the terminal equipment as required by the claims. It also does not represent the contacts that are specifically located at the terminal. IEEE 802.3i does not meet the limitations of "selecting contacts" nor does it meet the limitation of coupling a path across selected contacts for impedance across the selected contacts of the Ethernet connector. See, McGilvra Declaration, ¶¶46. In connection with the "selected" limitation, the Requester alleges that PCnet discloses an "8-pin RJ-45 Jack" on page "3-1." The "8-pin RJ-45 Jack" from page 3-1 is shown and identified in Figure 3-1, reproduced below:



Each "RJ-45 jack" shown in PCnet Figure 3-1 is a male connector that is physically separated from each "DTE.." So, PCnet's "RJ-45 jack" cannot be the "Ethernet connector" of the claim because the claimed "Ethernet connector" must be part of the "*Ethernet data terminal equipment*," not a jack separate and distinct from the Ethernet data terminal equipment. Figure 3-1 confirms that is not the case with respect to the "RJ-45 jack" on which Requester relies. See Request, at pages 29-30. *See*, McGilvra Declaration, ¶17.

Even if the RJ-45 jack were a female connector on the DTE – as opposed to a male connector separated from the DTE as illustrated in PCnet - Requester does not explain "how" such a female RJ-45 jack would be combined with Cummings' disclosure of using tapped wires in a cable or the Maman disclosure that utilizes a micro-switch or shorting bar in an AC power cable. Those of ordinary skill in the art know that a female RJ-45 jack is not a cable and has no wires. Therefore, neither the tapped wires in Cummings nor the AC power cable of Maman, relied on by Requester, would be combinable with a female RJ-45 jack. See, McGilvra Declaration, ¶18.

Additionally, the "coupled" limitation requires a "path coupled across the selected contacts" of the "Ethernet connector," which the claims require must be part of the "piece of Ethernet data terminal equipment." Because the Requester

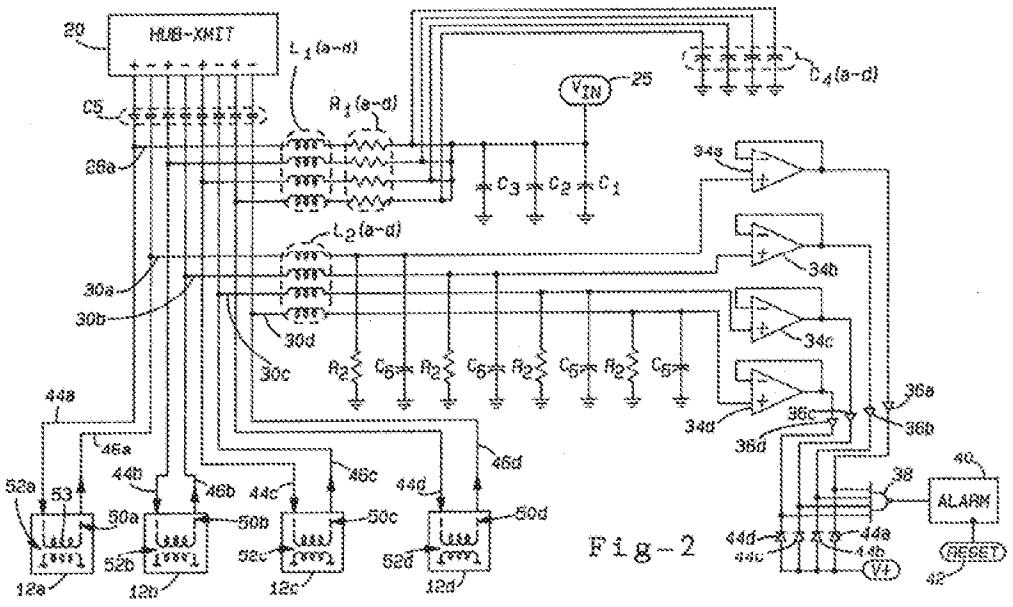
	has not shown that Cummings/PCnet disclose the required "contacts" of the "Ethernet connector" as part of a "piece of Ethernet data terminal equipment," Requester cannot identify any "path across" the (missing) connectors. Ignoring that flaw, however, Requester relies on the tapped transmit wires 44 through 46 to establish the "path." Whatever path Cummings discloses cannot be the claimed path because the claimed path is "across the selected contacts" of the "Ethernet connector" (which is part of the "piece of Ethernet data terminal equipment") and Cummings, whether alone or with the RJ-45 jack of PCnet Figure 3-1, does not disclose such a path. *See*, McGilvra Declaration, ¶19.
wherein distinguishing information about the piece of Ethernet data terminal equipment is associated to impedance within the at least one path	It is noted that the claim specifically requires that "*distinguishing information*" "*about the piece of Ethernet data terminal equipment*" is "*associated to impedance within the . . . path*." Because Requester has not shown in any reference that a path is coupled across selected contacts of the Ethernet connector of the piece of Ethernet data terminal equipment, it stands that a PHOSITA would clearly not believe that the combination of references teaches or suggests "associating" "distinguishing information" "about the piece of Ethernet data terminal equipment" to "impedance within the . . . path" as claimed. *See*, McGilvra Declaration, ¶10. However, even if one assumes that the transmit wires 44a-d and 46a-d of the data communication link 14 meet this limitation, the cited references do not teach the claimed "distinguishing information" "about the piece of Ethernet data terminal equipment" to "impedance within the . . . path." That is, Requester asserts that this limitation is met when a cable is removed from the device. Request, at pages 54, 55. Specifically, regarding Cummings, Requester says, Cummings discloses "supplying a low DC current signal to each current loop so as to achieve continuous current flow through each current loop while each of said associated pieces of equipment is physically connected to said network via the data communication lines." Requester does not contend that this current flow provides the necessary "distinguishing information." Request, at page 54. Rather, Requester says that the "distinguishing information" results from "a change in current flow indicative of *disconnection* of one of said pieces of associated equipment." Request, at page 54. *See*, McGilvra Declaration, ¶28. Likewise, Requester cites Maman as disclosing the same thing—a first impedance when electrical equipment is connected and a different impedance, but only when the equipment is disconnected: ""first and second status conductors adapted to exhibit a first impedance value . . . when the electrical equipment is connected to the equipment and a second impedance value . . .

	when the electrical equipment is *disconnected* from the cable." Request, at page 54-55. *See*, McGilvra Declaration, ¶29. However, Claim 31 does not allow for the Ethernet data terminal device to include certain components to meet some limitations and then be disconnected from certain components to meet other claim limitations. In other words, the Ethernet data terminal device cannot be defined as the computers with the wires connected to meet the connectors/contact limitations, but then be redefined as the computers with the wires disconnected to meet the "associated" limitation. Instead, to meet the claim, all components of the relied upon prior art must be present – disconnecting a cable, as Cummings and Maman require, necessarily eliminates components critical to the Requester's theory for the connector/contact limitations of Claim 31 and, therefore, the remaining Ethernet data terminal device after disconnection of the wires would not meet all of the claim limitations of Claim 31. *See*, McGilvra Declaration, ¶30. For example, and hypothetically, if a hardware setup included a "DTE" connected to a "RJ-45 jack" (a slightly modified version of PCnet Figure 3-1) and tapped wires forming a current loop (ala Cummings), Requester might hypothetically contend that such a setup meets the first three limitations of the claim (the preamble and the "selecting" and "coupling" limitations). But to meet the "associating" limitation, Cummings and Maman must disconnect the "RJ-45 jack" and its cable from the "DTE." Doing so changes the setup so that it matches the drawing of PCnet Figure 3-1 and no longer meets the first three claim limitations, i.e., the "DTE" is separated from, and no longer includes the connector identified by Requestor as an "RJ-45 jack" (and its "contacts"). Moreover, the "DTE" is separated from, and would no longer include the Requester's identified "path across selected contacts." This confirms that all claim limitations are not present simultaneously. *See*, McGilvra Declaration, ¶31. It is further noted that IEEE 802.3i standard does not teach, suggest, or recite a path formed over the recited "pair" of contacts and therefore cannot teach changing impedance within a path formed over the recited contacts.

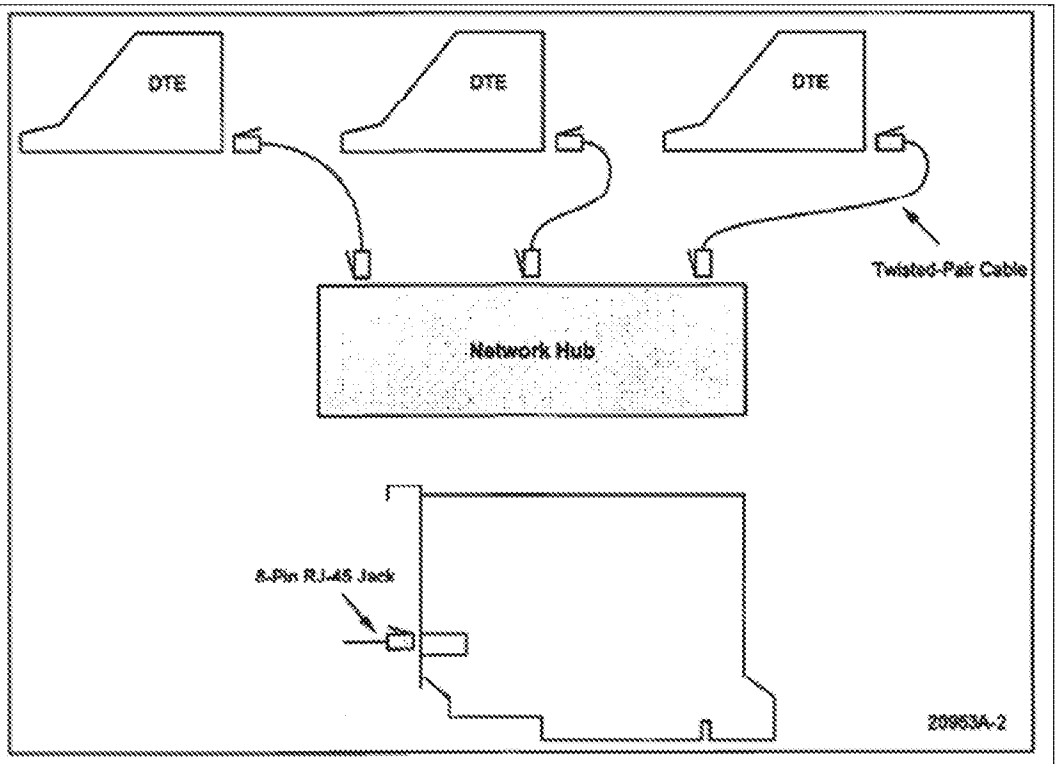
b). Independent Claim 1

Claim 1	Arguments Relating to Cummings and Maman
1. A method for adapting a piece of Ethernet data terminal equipment, the piece of Ethernet data terminal equipment having an Ethernet connector, the method comprising:	Based on the analysis above, it should be understood that the present claim is directed to, specifically, a method of "adapting a piece of Ethernet data terminal equipment." That is, as understood by a PHOSITA, Ethernet data terminal equipment is a device at which *Ethernet data transmission can originate or terminate*. Accordingly, the method of "adapting a piece of Ethernet data terminal equipment" must be directed to the Ethernet data terminal equipment having the recited structure according to the recited method. See, McGilvra Declaration, ¶12. With particular regard to Cummings, it is worth noting that the Requester merely uses Cummings to "teach[] Ethernet." Request, at page 29. Moreover, the Requester does not allege that Cummings teaches a "piece of Ethernet data terminal equipment." Indeed, Cummings fails to teach a piece of Ethernet data terminal equipment. Cummings merely teaches using an existing computer 12 having an existing winding 53 of an isolation transformer 52. Cummings does not adapt, configure, modify, or design the computer 12 ("These approaches, however, are generally undesirable since they require the incorporation of additional components into each machine." Cummings, at 1:61-64.). With particular regard to Maman, the Requester correctly notes that Maman does not teach Ethernet. Request, at page 54. However, Patent Owner also notes that Maman fails to even teach or suggest any Ethernet data terminal equipment (i.e. a device at which *Ethernet data transmission can originate or terminate*). Maman merely teaches "electronic equipment 2, in this case shown as a computer" that is monitored via disconnection of its AC power plug. Maman, at 3:5-20, *See*, McGilvra Declaration, ¶29. However, the electronic equipment 2 of Maman is NOT described as having *any* Ethernet, much less data terminal equipment. *See*, McGilvra Declaration, ¶¶25, 26. Maman NEVER teaches or envisions use of Ethernet in any form and provides no structure related thereto. In fact, it is improper to infer that the electrical equipment (computer) of March 1, 1990 (Maman's filing date) had any Ethernet components or functionality. Therefore, Maman does not actually teach "a piece of Ethernet data terminal equipment" as alleged by the Requester, because the computer of Maman cannot even be considered "Ethernet data terminal equipment" as that term is used in Ethernet systems. Moreover, a PHOSITA

	would not rely on Maman for any teachings relating to Ethernet, as Maman is only focused on a power cable solution and power cables and Ethernet are not compatible. See, McGilvra Declaration, ¶18. As established herein, the Requester has failed to provide *any* support for establishing a motivation to combine Maman with Cummings or any other reference. Notwithstanding, Patent Owner notes that a PHOSITA would not be motivated to combine Maman with Cummings because, at least, 1) any combination is fatal to Ethernet communications (*See*, McGilvra Declaration, ¶48), and 2) Maman or Cummings would not require the theft detection solution of the other as they are mutually exclusive and provide a separate and distinct solution to the same problem. Finally, Cummings, PCnet, and Maman fail to teach any workable combination of the micro-switch or shorting bar of Maman within an Ethernet system.
selecting contacts of the Ethernet connector comprising a plurality of contacts, the selected contacts comprising at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the Ethernet connector;	It is noted that the piece of Ethernet data terminal equipment is claimed as having an existing "Ethernet connector." The method then claims "selecting contacts" of the "Ethernet connector" of the Ethernet data terminal equipment. The Requester relies on Cummings to teach this element. As noted above, the Requester does not specifically identify where in Cummings, Maman, or PCnet an "Ethernet connector" is located, much less "selecting contacts" of the Ethernet connector. However, again, it appears from the Requesters arguments that the Requester reads the "transmit wires 44a through 44d and 46a through 46d" of the "data communication link 14" to apply to the present claim element. However, it is noted that these transmit wires transmit wires 44a through 44d and 46a through 46d of the data communication link 14 are NOT part of any *Ethernet data terminal equipment*, much less an Ethernet connector of a piece of Ethernet data terminal equipment. As understood by a PHOSITA, data communication links or lines are used to connect a terminal device to a central device, but are never "part of" either the central device or the terminal device. Here, in Cummings, the transmit wires of the data communication link are not part of the computer 12a through 12d.

	 Fig-2 Accordingly, a PHOSITA would not conclude that the data communication link/lines and the transmit wires of Cummings would read on the Ethernet connector of a piece of Ethernet data terminal equipment having a plurality of contacts. *See*, McGilvra Declaration, ¶14, To a PHOSITA, transmit wires are wires of a data cable, not the "contacts" of an "Ethernet connector." *See*, McGilvra Declaration, ¶15.
coupling at least one path across the selected contacts of the Ethernet connector; and	As established herein, it is noted that the path is specifically claimed as being across selected contacts of the plurality of contacts of the Ethernet connector *of the* piece of Ethernet data terminal equipment as understood by a PHOSITA. *See*, McGilvra Declaration, ¶19. The Requester and the Office (during the interview conducted on May 3, 2017) rely on the *transmit wires of the data communication link* to read on the "path" across the selected contacts. This would permit the transmit wires 44a-44d and 46a-46d of the data communication link 14 to be plugged *into and out of* the computer 12a through 12d. This fact clearly establishes that the transmit wires of the data communication link are *definitionally separate* from the terminal equipment (computer). Therefore, a PHOSITA could only conclude that this alleged "path" is NOT part of any Ethernet connector, much less a piece of Ethernet data terminal equipment. Moreover, the Requester's attempt to read the transmit wires of the data communication link on the present claim limitation is not in harmony with the specific claim language requiring that the "coupling at least one path across the selected contacts of the Ethernet connector," which is specially claimed as being part of the "piece of Ethernet data terminal equipment." Accordingly, it is

	improper to attempt to apply connecting across transmit wires of *a data communication link* to the specifically recited method applied to a piece of *Ethernet data terminal equipment* of the present claim. Again, the Requester appears to rely on transmit wires 44a-44d and 46a-46d of data communication link 14 to teach "selected contacts." However, in its Request, the Requester also points to the 802.3i standard for the limitation regarding "selecting contacts." Request, at page 30. Specifically, the Requester states: "The 'selected contacts' therefore comprise at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the Ethernet connector (i.e., the pair). A path is coupled across contact pairs, and specifically across the 'selected contacts.'" Request, at page 30. However, the Requester merely restates the claim language, but does not explain how one is to bridge the gap between Cummings and IEEE 802.3i with respect to the claim language. *See*, McGilvra Declaration, ¶¶15, 19. IEEE 802.3i represents a cable, but it does not represent the connector at the terminal equipment as required by the claims. It also does not represent the contacts that are specifically located at the terminal. IEEE 802.3i does not meet the limitations of "selecting contacts" nor does it meet the limitation of coupling a path across selected contacts for impedance across the selected contacts of the Ethernet connector. *See*, McGilvra Declaration, ¶¶46. In connection with the "selected" limitation, the Requester alleges that PCnet discloses an "8-pin RJ-45 Jack" on page "3-1." The "8-pin RJ-45 Jack" from page 3-1 is shown and identified in Figure 3-1, reproduced below:



Each "RJ-45 jack" shown in PCnet Figure 3-1 is a male connector that is physically separated from each "DTE.." So, PCnet's "RJ-45 jack" cannot be the "Ethernet connector" of the claim because the claimed "Ethernet connector" must be part of the "*Ethernet data terminal equipment*," not a jack separate and distinct from the Ethernet data terminal equipment. Figure 3-1 confirms that is not the case with respect to the "RJ-45 jack" on which Requester relies. See Request, at pages 29-30. *See*, McGilvra Declaration, ¶17.

Even if the RJ-45 jack were a female connector on the DTE – as opposed to a male connector separated from the DTE - Requester does not explain "how" such a female RJ-45 jack would be combined with Cummings' disclosure of using tapped wires in a cable or the Maman disclosure that utilizes a micro-switch or shorting bar in a power cord. Those of ordinary skill in the art know that a female RJ-45 jack is not a cable and has no wires. Therefore, neither the tapped wires in Cummings nor the power cable of Maman, relied on by Requester, would be combinable with a female RJ-45 jack. See, McGilvra Declaration, ¶18.

Additionally, the "coupling" limitation requires a "path across the selected contacts" of the "Ethernet connector," which the claims require must be part of the "piece of Ethernet data terminal equipment." Because the Requester has not

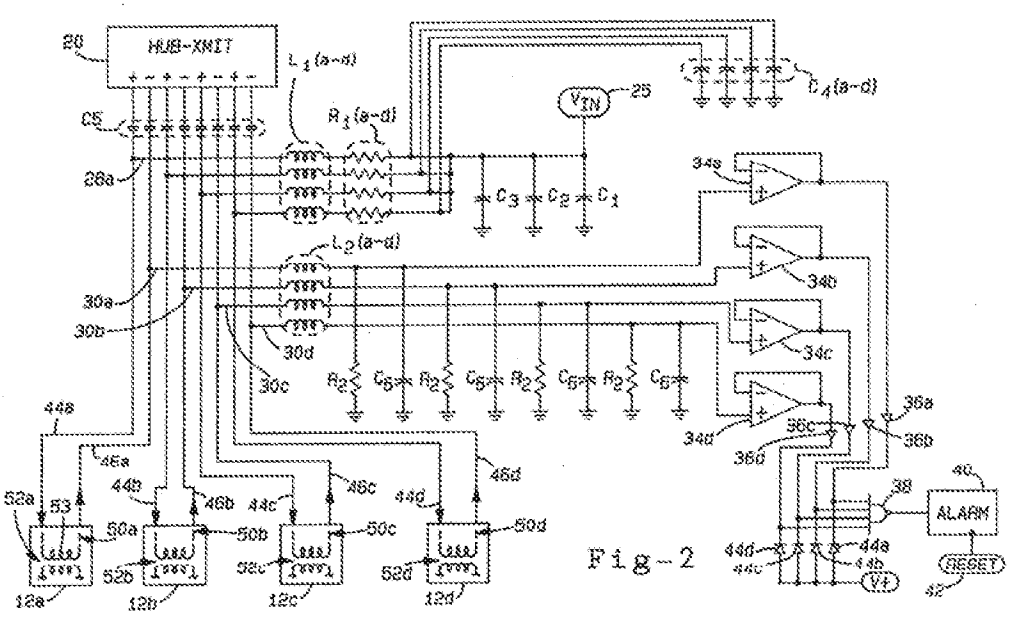
	shown that Cummings/PCnet disclose the required "contacts" of the "Ethernet connector" as part of a "piece of Ethernet data terminal equipment," Requester cannot identify any "path across" the (missing) connectors. Ignoring that flaw, however, Requester relies on the tapped transmit wires 44 through 46 to establish the "path." Whatever path Cummings discloses cannot be the claimed path because the claimed path is "across the selected contacts" of the "Ethernet connector" (which is part of the "piece of Ethernet data terminal equipment") and Cummings, whether alone or with the RJ-45 jack of PCnet Figure 3-1, does not disclose such a path.
associating distinguishing information about the piece of Ethernet data terminal equipment to impedance within the at least one path.	It is noted that the claim specifically requires that "*associating distinguishing information about the piece of Ethernet data terminal equipment to impedance within the at least one path.*" Because Requester has not shown in any reference that a path is coupled across selected contacts of the Ethernet connector of the piece of Ethernet data terminal equipment, it stands that a PHOSITA would clearly not believe that the combination of references teaches or suggests "associating" "distinguishing information" "about the piece of Ethernet data terminal equipment" to "impedance within the . . . path" as claimed. *See*, McGilvra Declaration, ¶10. However, even if one assumes that the transmit wires 44a-d and 46a-d of the data communication link 14 meet this limitation, the cited references do not teach the claimed "distinguishing information" "about the piece of Ethernet data terminal equipment" to "impedance within the . . . path." *See*, McGilvra Declaration, ¶32. That is, Requester asserts that this limitation is met when a cable is removed from the device. Request, at pages 29, 30. Specifically, regarding Cummings, Requester says, Cummings discloses "supplying a low DC current signal to each current loop so as to achieve continuous current flow through each current loop while each of said associated pieces of equipment is physically connected to said network via the data communication lines." Requester does not contend that this current flow provides the necessary "distinguishing information." Request, at page 29. Rather, Requester says that the "distinguishing information" results from "a change in current flow indicative of *disconnection* of one of said pieces of associated equipment." Request, at page 29. *See*, McGilvra Declaration, ¶28. Likewise, Requester cites Maman as disclosing the same thing—a first impedance when electrical equipment is connected and a different impedance, but only when the equipment is disconnected: ""first and second status conductors adapted to exhibit a first impedance value . . . when the electrical

	equipment is connected to the equipment and a second impedance value . . . when the electrical equipment is *disconnected* from the cable." Request, at page 29, 30. *See*, McGilvra Declaration, ¶29. However, Claim 1 does not allow for the method of adapting a piece of Ethernet data terminal equipment to include certain components to meet some limitations and then be disconnected from certain components to meet other claim limitations. In other words, the method of adapting a piece of Ethernet data terminal device cannot be defined as the computers with the wires connected to meet the connectors/contact limitations, but then be redefined as the computers with the wires disconnected to meet the "associating" limitation. Instead, to meet the claim, all method steps of the relied upon prior art must be present – disconnecting a cable, as Cummings and Maman require, necessarily eliminates components critical to the Requester's theory for the connector/contact limitations of Claim 1 and, therefore, the remaining Ethernet data terminal device after disconnection of the wires would not meet all of the claim limitations of Claim 1. *See*, McGilvra Declaration, ¶30. For example, and hypothetically, if a hardware setup included a "DTE" connected to a "RJ-45 jack" (a slightly modified version of PCnet Figure 3-1) and tapped wires forming a current loop (ala Cummings), Requester might hypothetically contend that such a setup meets the first three limitations of the claim (the preamble and the "selecting" and "coupling" limitations). But to meet the "associating" limitation, Cummings and Maman must disconnect the "RJ-45 jack" and its cable from the "DTE." Doing so changes the setup so that it matches the drawing of PCnet Figure 3-1 and no longer meets the first three claim limitations, i.e., the "DTE" is separated from, and no longer includes the connector identified by Requestor as an "RJ-45 jack" (and its "contacts"). Moreover, the "DTE" is separated from, and would no longer include the Requester's identified "path across selected contacts." This confirms that all claim limitations are not present simultaneously. *See*, McGilvra Declaration, ¶31. It is further noted that IEEE 802.3i standard does not teach, suggest, or recite a path formed over the recited pair of contacts and therefore cannot teach changing impedance within a path formed over the recited contacts.

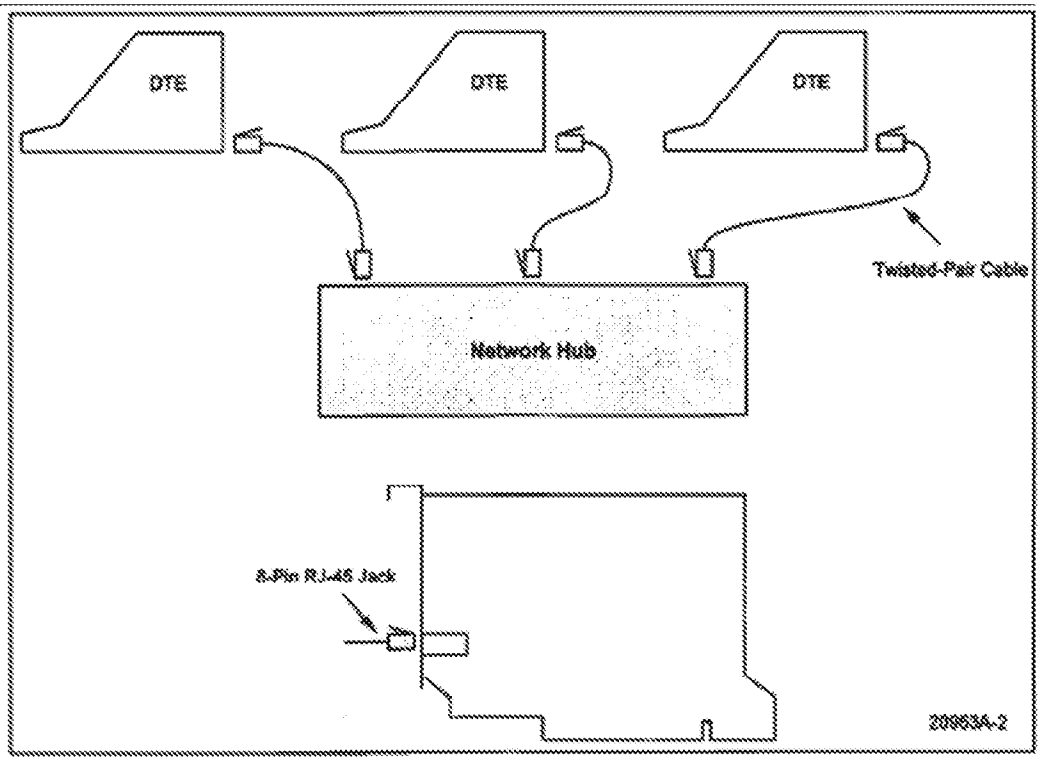
c). Independent Claim 67

Claim 67	Arguments Relating to Cummings and Maman
67. A method for adapting a piece of terminal equipment, the piece of terminal equipment having an Ethernet connector, the method comprising:	Based on the analysis above, it should be understood that the present claim is directed to, specifically, a method of "adapting a piece of terminal equipment, the piece of terminal equipment having an Ethernet connector." That is, as understood by a PHOSITA, terminal equipment having an Ethernet connector as claimed is a device at which *Ethernet data transmission can originate or terminate*. Accordingly, the method of "adapting a piece of terminal equipment" must be directed to the terminal equipment to have the recited structure according to the recited method. *See*, McGilvra Declaration, ¶12. With particular regard to Cummings, it is worth noting that the Requester merely uses Cummings to "teach[] Ethernet." Request, at page 79. Indeed, Cummings does not adapt, configure, modify, or design the computer 12 ("These approaches, however, are generally undesirable since they require the incorporation of additional components into each machine." Cummings, at 1:61-64.). With particular regard to Maman, the Requester correctly notes that Maman does not teach Ethernet. Request, at page 79. However, Patent Owner also notes that Maman fails to even teach or suggest any terminal equipment having an Ethernet connector (i.e. a device at which *Ethernet data transmission can originate or terminate*). Maman merely teaches "electronic equipment 2, in this case shown as a computer" that is monitored via disconnection of its AC power plug. Maman, at 3:5-20, McGilvra Declaration, ¶29. . However, the electronic equipment 2 of Maman is NOT described as having *any* Ethernet, much less data terminal equipment. *See*, McGilvra Declaration, ¶¶25, 26. Maman NEVER teaches or envisions use of Ethernet in any form and provides no structure related thereto. In fact, it is improper to infer that the electrical equipment (computer) of March 1, 1990 (Maman's filing date) had any Ethernet components or functionality. Therefore, Maman does not actually teach "adapting a piece of terminal equipment" as alleged by the Requester, because the computer of Maman cannot even be considered "terminal equipment" as that term is used in Ethernet systems. Moreover, a PHOSITA would not rely on Maman for any teachings relating to Ethernet, as Maman is

	only focused on a power cable solution and power cables and Ethernet are not compatible. See, McGilvra Declaration, ¶18. As established herein, the Requester has failed to provide *any* support for establishing a motivation to combine Maman with Cummings or any other reference. Notwithstanding, Patent Owner notes that a PHOSITA would not be motivated to combine Maman with Cummings because, at least, 1) any combination is fatal to Ethernet communications (*See*, McGilvra Declaration, ¶48), and 2) Maman or Cummings would not require the theft detection solution of the other as they are mutually exclusive and provide a separate and distinct solution to the same problem. Finally, Cummings, PCnet, and Maman fail to teach any workable combination of the micro-switch or shorting bar of Maman within an Ethernet system.
coupling at least one path across specific contacts of the Ethernet connector, the at least one path permits use of the specific contacts for Ethernet communication, the Ethernet connector comprising the contact 1 through the contact 8, the specific contacts of the Ethernet connector comprising at least one of the	It is noted that the method claims "coupling at least one path across specific contacts" and these contacts are "of the Ethernet connector." Moreover, "the at least one path permits use of the specific contacts for Ethernet communication." The Requester relies on Cummings to teach this element. As noted above, the Requester does not specifically identify where in Cummings, Maman, or PCnet an "Ethernet connector" is located, much less "coupling . . . a path across specific contacts" of the Ethernet connector. However, again, it appears from the Requesters arguments that the Requester reads the "transmit wires 44a through 44d and 46a through 46d" of the "data communication link 14" to apply to the present claim element. However, it is noted that these transmit wires transmit wires 44a through 44d and 46a through 46d of the data communication link 14 are NOT part of any *terminal equipment*, much less an Ethernet connector of a piece of terminal equipment. As understood by a PHOSITA, data communication links or lines are used to connect a terminal device to a central device, but are never "part of" either the central device or the terminal device. Here, in Cummings, the transmit wires of the data communication link are not part of the computer 12a through 12d.

contacts of the Ethernet connector and at least another one of the contacts of the Ethernet connector; and	 Fig-2 Accordingly, a PHOSITA would not conclude that the data communication link/lines and the transmit wires of Cummings would read on the Ethernet connector of a piece of terminal equipment having a plurality of contacts. *See*, McGilvra Declaration, ¶14, To a PHOSITA, transmit wires are wires of a data cable, not the "contacts" of an "Ethernet connector." *See*, McGilvra Declaration, ¶15. As established herein, it is noted that the path is specifically claimed as being across specific contacts of the Ethernet connector *of the* piece of terminal equipment as understood by a PHOSITA. *See*, McGilvra Declaration, ¶19. The Requester and the Office (during the interview conducted on May 3, 2017) rely on the *transmit wires of the data communication link* to read on the "path" across the specific contacts. This would permit the transmit wires 44a-44d and 46a-46d of the data communication link 14 to be plugged *into and out of* the computer 12a through 12d. This fact clearly establishes that the transmit wires of the data communication link are *definitionally separate* from the terminal equipment (computer). Therefore, a PHOSITA could only conclude that this alleged "path" is NOT part of any Ethernet connector, much less a piece of terminal equipment. Moreover, the Requester's attempt to read the transmit wires of the data communication link on the present claim limitation is not in harmony with the specific claim language requiring that the "coupling at least one path across specific contacts of the Ethernet connector," which is specially claimed as being part of the "piece of terminal equipment." Accordingly, it is improper to

	attempt to apply connecting across transmit wires of *a data communication link* to the specifically recited method of adapting a piece of *terminal equipment* of the present claim. Again, the Requester appears to rely on transmit wires 44a-44d and 46a-46d of data communication link 14 to teach "specific contacts." However, in its Request, the Requester also points to the 802.3i standard for the limitation regarding "specific contacts." Request, at page 81. Specifically, the Requester states: "The 'specific contacts' therefore comprise at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the Ethernet connector (i.e., the pair). A path is coupled across contact pairs, and specifically across the 'specific contacts.'" Request, at page 81. However, the Requester merely restates the claim language, but does not explain how one is to bridge the gap between Cummings and IEEE 802.3i with respect to the claim language. *See*, McGilvra Declaration, ¶¶15, 19. IEEE 802.3i represents a cable, but it does not represent the Ethernet connector at the terminal equipment as required by the claims. It also does not represent the contacts that are specifically located at the terminal equipment. IEEE 802.3i does not meet the limitations of "specific contacts" nor does it meet the limitation of coupling a path across specific contacts for impedance across the specific contacts of the Ethernet connector. *See*, McGilvra Declaration, ¶¶46. In connection with the "specific contacts" limitation, the Requester alleges that PCnet discloses an "8-pin RJ-45 Jack" on page "3-1." The "8-pin RJ-45 Jack" from page 3-1 is shown and identified in Figure 3-1, reproduced below:



Each "RJ-45 jack" shown in PCnet Figure 3-1 is a male connector that is physically separated from each "DTE.." So, PCnet's "RJ-45 jack" cannot be the "Ethernet connector" of the claim because the claimed "Ethernet connector" must be part of the "*terminal equipment*," not a jack separate and distinct from the terminal equipment. Figure 3-1 confirms that is not the case with respect to the "RJ-45 jack" on which Requester relies. See Request, at pages 79-80. *See*, McGilvra Declaration, ¶17.

Even if the RJ-45 jack were a female connector on the DTE – as opposed to a male connector separated from the DTE - Requester does not explain "how" such a female RJ-45 jack would be combined with Cummings' disclosure of using tapped wires in a cable or the Maman disclosure that utilizes a micro-switch or shorting bar in a power cord. Those of ordinary skill in the art know that a female RJ-45 jack is not a cable and has no wires. Therefore, neither the tapped wires in Cummings nor the power cable of Maman, relied on by Requester, would be combinable with a female RJ-45 jack. See, McGilvra Declaration, ¶18.

Additionally, the "coupling" limitation requires a "path across the specific contacts" of the "Ethernet connector," which the claims require must be part of the "piece of terminal equipment." Because the Requester has not shown that Cummings/PCnet disclose the required "contacts" of the "Ethernet connector" as part of a "piece of terminal equipment," Requester cannot identify any "path across" the (missing) connectors. Ignoring that flaw, however, Requester

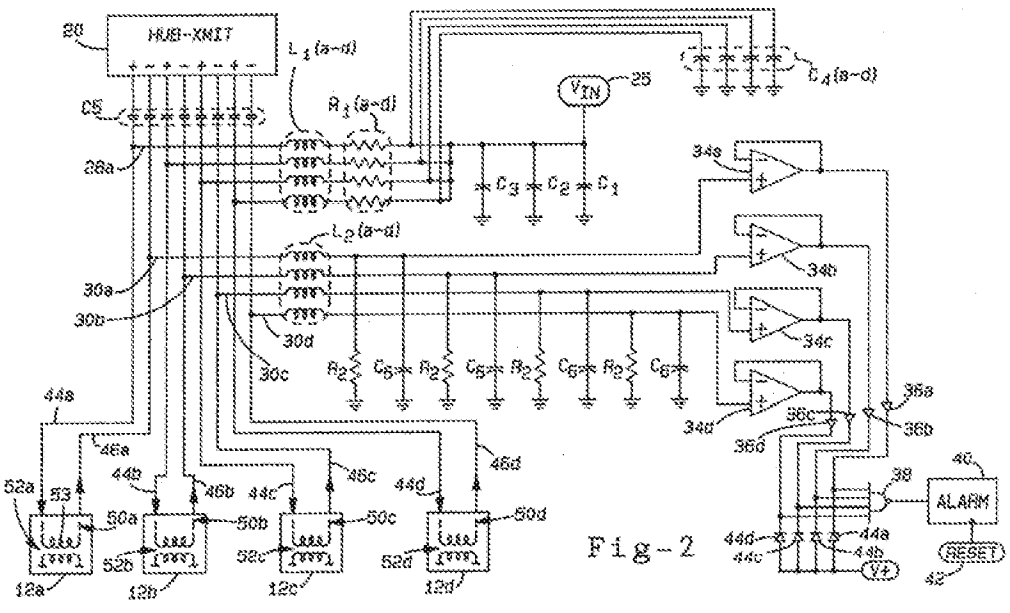
	relies on the tapped transmit wires 44 through 46 to establish the "path." Whatever path Cummings discloses cannot be the claimed path because the claimed path is "across the specific contacts" of the "Ethernet connector" (which is part of the "piece of terminal equipment") and Cummings, whether alone or with the RJ-45 jack of PCnet Figure 3-1, does not disclose such a path.
arranging impedance within the at least one path to distinguish the piece of terminal equipment.	It is noted that the claim specifically requires that "*arranging impedance within the at least one path to distinguish the piece of terminal equipment*" Because Requester has not shown in any reference that a path is coupled across specific contacts of the Ethernet connector of the piece of terminal equipment, it stands that a PHOSITA would clearly not believe that the combination of references teaches or suggests "arranging" "impedance" "within the . . . path" "to distinguish" "the piece of terminal equipment" as claimed. *See*, McGilvra Declaration, ¶10. However, even if one assumes that the transmit wires 44a-d and 46a-d of the data communication link 14 meet this limitation, the cited references do not teach the claimed "distinguishing the piece of terminal equipment" and how such relates to "arranging impedance within the . . . path." *See*, McGilvra Declaration, ¶32. That is, Requester asserts that this limitation is met when a cable is removed from the device. Request, at page 80. Specifically, regarding Cummings, Requester says, Cummings discloses "supplying a low DC current signal to each current loop so as to achieve continuous current flow through each current loop while each of said associated pieces of equipment is physically connected to said network via the data communication lines." Requester does not contend that this current flow provides the necessary "distinguishing." Request, at page 79. Rather, Requester says that the "distinguishing information" results from Cummings "knowing the impedance." Request, at page 80. *See*, McGilvra Declaration, ¶28. Likewise, Requester cites Maman as disclosing the same thing—a first impedance when electrical equipment is connected and a different impedance, but only when the equipment is disconnected: ""first and second status conductors adapted to exhibit a first impedance value . . . when the electrical equipment is connected to the equipment and a second impedance value . . . when the electrical equipment is *disconnected* from the cable." Request, at page 79. *See*, McGilvra Declaration, ¶29. However, Claim 67 does not allow for the method of adapting a piece of

	terminal equipment to include certain components to meet some limitations and then be disconnected from certain components to meet other claim limitations. In other words, the method of adapting a piece of Ethernet data terminal device cannot be defined as the computers with the wires connected to meet the connectors/contact limitations, but then be redefined as the computers with the wires disconnected to meet the "coupling" limitation. Instead, to meet the claim, all method steps of the relied upon prior art must be present – disconnecting a cable, as Cummings and Maman require, necessarily eliminates components critical to the Requester's theory for the connector/contact limitations of Claim 1 and, therefore, the remaining terminal device after disconnection of the wires would not meet all of the claim limitations of Claim 67. *See*, McGilvra Declaration, ¶30. For example, and hypothetically, if a hardware setup included a "DTE" connected to a "RJ-45 jack" (a slightly modified version of PCnet Figure 3-1) and tapped wires forming a current loop (ala Cummings), Requester might hypothetically contend that such a setup meets the first three limitations of the claim (the preamble and the "selecting" and "coupling" limitations). But to meet the "arranging" limitation, Cummings and Maman must disconnect the "RJ-45 jack" and its cable from the "DTE." Doing so changes the setup so that it matches the drawing of PCnet Figure 3-1 and no longer meets the first three claim limitations, i.e., the "DTE" is separated from, and no longer includes the connector identified by Requestor as an "RJ-45 jack" (and its "contacts"). Moreover, the "DTE" is separated from, and would no longer include the Requester's identified "path across specific contacts." This confirms that all claim limitations are not present simultaneously. *See*, McGilvra Declaration, ¶31. It is further noted that IEEE 802.3i standard does not teach, suggest, or recite a path formed over the recited pair of contacts and therefore cannot teach changing impedance within a path formed over the recited contacts.

d). Independent Claim 108

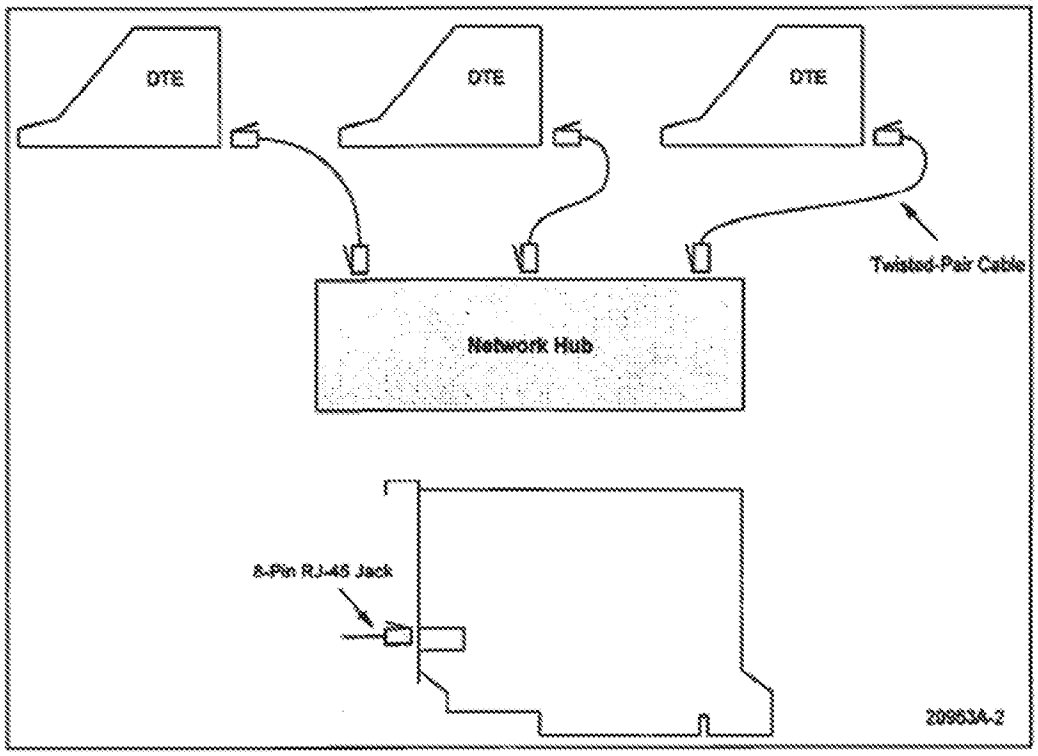
Claim 108	Arguments Relating to Cummings and Maman
108. An adapted piece	Based on the analysis above, it should be understood that the present claim is directed to, specifically, a "piece of terminal equipment having an Ethernet

of terminal equipment having an Ethernet connector, the piece of terminal equipment comprising:	connector." That is, as understood by a PHOSITA, terminal equipment having an Ethernet connector is a device at which *Ethernet data transmission can originate or terminate*. Accordingly, the "piece of terminal equipment" must, itself, include the recited structure of the claim. See, McGilvra Declaration, ¶12. With particular regard to Cummings, it is worth noting that the Requester merely uses Cummings to "teach[] Ethernet." Request, at page 114. Indeed, Cummings does not adapt, configure, modify, or design the computer 12 ("These approaches, however, are generally undesirable since they require the incorporation of additional components into each machine." Cummings, at 1:61-64.). With particular regard to Maman, the Requester correctly notes that Maman does not teach Ethernet. Request, at page 114. However, Patent Owner also notes that Maman fails to even teach or suggest any terminal equipment (i.e. a device at which *Ethernet data transmission can originate or terminate*). Maman merely teaches "electronic equipment 2, in this case shown as a computer" that is monitored via disconnection of its AC power plug. Maman, at 3:5-20, *See*, McGilvra Declaration, ¶29. However, the electronic equipment 2 of Maman is NOT described as having *any* Ethernet, much less data terminal equipment. *See*, McGilvra Declaration, ¶¶25, 26. Maman NEVER teaches or envisions use of Ethernet in any form and provides no structure related thereto. In fact, it is improper to infer that the electrical equipment (computer) of March 1, 1990 (Maman's filing date) had any Ethernet components or functionality. Therefore, Maman does not actually teach "a piece of terminal equipment" as alleged by the Requester, because the computer of Maman cannot even be considered "terminal equipment" as that term is used in Ethernet systems. Moreover, a PHOSITA would not rely on Maman for any teachings relating to Ethernet, as Maman is only focused on a power cable solution and power cables and Ethernet are not compatible. See, McGilvra Declaration, ¶18. As established herein, the Requester has failed to provide *any* support for establishing a motivation to combine Maman with Cummings or any other reference. Notwithstanding, Patent Owner notes that a PHOSITA would not be motivated to combine Maman with Cummings because, at least, 1) any

	combination is fatal to Ethernet communications (*See*, McGilvra Declaration, ¶48), and 2) Maman or Cummings would not require the theft detection solution of the other as they are mutually exclusive and provide a separate and distinct solution to the same problem. Finally, Cummings, PCnet, and Maman fail to teach any workable combination of the micro-switch or shorting bar of Maman within an Ethernet system.
at least one path coupled across specific contacts of the Ethernet connector, the at least one path permits use of the specific contacts for Ethernet communication, the Ethernet connector comprising the contact 1 through the contact 8, the specific contacts comprising at least one of the contacts of the Ethernet connector and at least another one of the contacts of the Ethernet connector,	It is noted that the piece of terminal equipment is claimed as having an "Ethernet connector" and the Ethernet connector having "specific contacts." The Requester relies on Cummings to teach this element. As noted above, the Requester does not specifically identify where in Cummings a "piece of terminal equipment" is located. However, it appears from the Requesters arguments that the Requester reads the "transmit wires 44a through 44d and 46a through 46d" of the "data communication link 14" to apply to the present claim element. However, it is noted that these transmit wires transmit wires 44a through 44d and 46a through 46d of the data communication link 14 are NOT part of any *terminal equipment*. As understood by a PHOSITA, data communication links or lines are used to connect a terminal device to a central device, but are never "part of" either the central device or the terminal device. Here, in Cummings, the transmit wires of the data communication link are not part of the computer 12a through 12d.  Fig-2 Accordingly, a PHOSITA would not conclude that the data communication link/lines and the transmit wires of Cummings would read on the Ethernet

	connector of a piece of terminal equipment having a plurality of contacts. *See*, McGilvra Declaration, ¶14, To a PHOSITA, transmit wires are wires of a data cable, not the "contacts" of an "Ethernet connector." *See*, McGilvra Declaration, ¶15. As established herein, it is noted that the path is specifically claimed as being across specific contacts of the Ethernet connector *of the* piece of terminal equipment as understood by a PHOSITA. *See*, McGilvra Declaration, ¶19. The Requester and the Office (during the interview conducted on May 3, 2017) rely on the *transmit wires of the data communication link* to read on the "path" across the specific contacts. This would permit the transmit wires 44a-44d and 46a-46d of the data communication link 14 to be plugged into and out of the computer 12a through 12d. This fact clearly establishes that the transmit wires of the data communication link are *definitionally separate* from the terminal equipment (computer). Therefore, a PHOSITA could only conclude that this alleged "path" is NOT part of any Ethernet connector. Moreover, the Requester's attempt to read the transmit wires of the data communication link on the present claim limitation is not in harmony with the specific claim language requiring that the "path [is] coupled across specific contacts of the Ethernet connector," which is specially claimed as being part of the "piece of terminal equipment." Accordingly, it is improper to attempt to apply connecting across transmit wires of *a data communication link* to the specifically recited *terminal equipment* of the present claim. Again, the Requester appears to rely on transmit wires 44a-44d and 46a-46d of data communication link 14 to teach "specific contacts." However, in its Request, the Requester also points to the 802.3i standard for the limitation regarding "selected contacts." Request, at page 116. Specifically, the Requester states: "The 'selected contacts' therefore comprise at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the Ethernet connector (i.e., the pair). A path is coupled across contact pairs, and specifically across the 'selected contacts.'" Request, at pages 115, 116. However, the Requester merely restates the claim language (albeit incorrectly), but does not explain how one is to bridge the gap between Cummings and IEEE 802.3i with respect to the claim language. *See*, McGilvra Declaration, ¶¶15, 19. IEEE 802.3i represents a cable, but it does not represent the connector at the terminal equipment as required by the claims. It also does not represent the contacts that are specifically located at the terminal. IEEE 802.3i does not meet the limitations of "specific contacts." *See*, McGilvra Declaration, ¶¶46.

In connection with the "specific contacts" limitation, the Requester alleges that PCnet discloses an "8-pin RJ-45 Jack" on page "3-1." The "8-pin RJ-45 Jack" from page 3-1 is shown and identified in Figure 3-1, reproduced below:



Each "RJ-45 jack" shown in PCnet Figure 3-1 is a male connector that is physically separated from each "DTE.." So, PCnet's "RJ-45 jack" cannot be the "Ethernet connector" of the claim because the claimed "Ethernet connector" must be part of the "*terminal equipment*," not a jack separate and distinct from the terminal equipment. Figure 3-1 confirms that is not the case with respect to the "RJ-45 jack" on which Requester relies. See Request, at pages 29-30. *See*, McGilvra Declaration, ¶17.

Even if the RJ-45 jack were a female connector on the DTE – as opposed to a male connector separated from the DTE - Requester does not explain "how" such a female RJ-45 jack would be combined with Cummings' disclosure of using tapped wires in a cable or the Maman disclosure that utilizes a micro-switch or shorting bar in a power cord. Those of ordinary skill in the art know that a female RJ-45 jack is not a cable and has no wires. Therefore, neither the tapped wires in Cummings nor the power cable of Maman, relied on by Requester, would be combinable with a female RJ-45 jack. See, McGilvra Declaration, ¶18.

	Additionally, the "coupled" limitation requires a "path coupled across the specific contacts" of the "Ethernet connector," which the claims require must be part of the "piece of terminal equipment." Because the Requester has not shown that Cummings/PCnet disclose the required "contacts" of the "Ethernet connector" as part of a "piece of terminal equipment," Requester cannot identify any "path across" the (missing) connectors. Ignoring that flaw, however, Requester relies on the tapped transmit wires 44 through 46 to establish the "path." Whatever path Cummings discloses cannot be the claimed path because the claimed path is "across the specific contacts" of the "Ethernet connector" (which is part of the "piece of terminal equipment") and Cummings, whether alone or with the RJ-45 jack of PCnet Figure 3-1, does not disclose such a path.
impedance within the at least one path arranged to distinguish the piece of terminal equipment.	It is noted that the claim specifically requires that "*impedance within the at least one path*" is "*arranged to distinguish the piece of terminal equipment*." Because Requester has not shown in any reference that a path is coupled across specific contacts of the Ethernet connector of the piece of terminal equipment, it stands that a PHOSITA would clearly not believe that the combination of references teaches or suggests "arranging" "impedance within the . . . path" "to distinguish the piece of terminal equipment" as claimed. *See*, McGilvra Declaration, ¶10. However, even if one assumes that the transmit wires 44a-d and 46a-d of the data communication link 14 meet this limitation, the cited references do not teach the claimed "impedance within the . . . path" being "arranged to distinguish" "the piece of terminal equipment." *See*, McGilvra Declaration, ¶32. That is, Requester asserts that this limitation is met when a cable is removed from the device. Request, at pages 114, 115. Specifically, regarding Cummings, Requester says, Cummings discloses "supplying a low DC current signal to each current loop so as to achieve continuous current flow through each current loop while each of said associated pieces of equipment is physically connected to said network via the data communication lines." Requester does not contend that this current flow provides the necessary "distinguishing information." Request, at page 114. Rather, Requester says that the "distinguishing information" results from "a change in current flow indicative of *disconnection* of one of said pieces of associated equipment." Request, at page 115. *See*, McGilvra Declaration, ¶28. Likewise, Requester cites Maman as disclosing the same thing—a first impedance when electrical equipment is connected and a different impedance,

	but only when the equipment is disconnected: ""first and second status conductors adapted to exhibit a first impedance value . . . when the electrical equipment is connected to the equipment and a second impedance value . . . when the electrical equipment is *disconnected* from the cable." Request, at page 115. *See*, McGilvra Declaration, ¶29. However, Claim 108 does not allow for the Ethernet data terminal device to include certain components to meet some limitations and then be disconnected from certain components to meet other claim limitations. In other words, the Ethernet data terminal device cannot be defined as the computers with the wires connected to meet the connectors/contact limitations, but then be redefined as the computers with the wires disconnected to meet the "arranged to distinguish" limitation. Instead, to meet the claim, all components of the relied upon prior art must be present – disconnecting a cable, as Cummings and Maman require, necessarily eliminates components critical to the Requester's theory for the connector/contact limitations of Claim 108 and, therefore, the remaining Ethernet data terminal device after disconnection of the wires would not meet all of the claim limitations of Claim 108. *See*, McGilvra Declaration, ¶30. For example, and hypothetically, if a hardware setup included a "DTE" connected to a "RJ-45 jack" (a slightly modified version of PCnet Figure 3-1) and tapped wires forming a current loop (ala Cummings), Requester might hypothetically contend that such a setup meets the first three limitations of the claim (the preamble and the "selecting" and "coupling" limitations). But to meet the "associating" limitation, Cummings and Maman must disconnect the "RJ-45 jack" and its cable from the "DTE." Doing so changes the setup so that it matches the drawing of PCnet Figure 3-1 and no longer meets the first three claim limitations, i.e., the "DTE" is separated from, and no longer includes the connector identified by Requestor as an "RJ-45 jack" (and its "contacts"). Moreover, the "DTE" is separated from, and would no longer include the Requester's identified "path across specific contacts." This confirms that all claim limitations are not present simultaneously. *See*, McGilvra Declaration, ¶31. It is further noted that IEEE 802.3i standard does not teach, suggest, or recite a path formed over the recited "pair" of contacts and therefore cannot teach changing impedance within a path formed over the recited contacts.

e). Dependent Claims

It is noted that each of the recited dependent claims depend directly or indirectly from independent Claims 1, 31, 67, and 108. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet, and submits that at least for the reasons set forth herein, the dependent claims, like the independent claims, remain patentable.

(1). Dependent Claims 3, 15, 16, 17, 45, 46, 47, 70, 71 111, 112 – 'Identifying Information'

Claims 3, 15, 16, 17, 45, 46, 47, 70, 71 111, 112 each claims:

> 3. The method according to claim 1 wherein the associating distinguishing information about the piece of Ethernet data terminal equipment to impedance within the at least one path comprises *associating identifying information about the piece of Ethernet data terminal equipment to impedance within the at least one path.*
>
> 15. The method according to claim 1 wherein the Ethernet connector is an RJ45 jack comprising the contact 1 through the contact 8 and the associating distinguishing information about the piece of Ethernet data terminal equipment to impedance within the at least one path comprises *associating identifying information about the piece of Ethernet data terminal equipment to impedance within the at least one path.*
>
> 16. The method according to Claim 1 wherein the associating distinguishing information about the piece of Ethernet data terminal equipment to impedance within the at least one path comprises *associating identifying information about the piece of Ethernet data terminal equipment to impedance within the at least one path* and the piece of Ethernet data terminal equipment is a piece of BaseT Ethernet data terminal equipment.

17. The method according to Claim 1 wherein the Ethernet connector is an RJ45 jack comprising the contact 1 through the contact 8, the piece of Ethernet data terminal equipment is a piece of BaseT Ethernet data terminal equipment and the *associating distinguishing information about the piece of Ethernet data terminal equipment to impedance within the at least one path* comprises associating identifying information about the piece of Ethernet data terminal equipment to impedance within the at least one path.

33. The piece of Ethernet data terminal equipment according to claim 31 wherein the distinguishing information about the piece of Ethernet data terminal equipment associated to impedance within the at least one path *comprises identifying information about the piece of Ethernet data terminal equipment.*

45. The piece of Ethernet data terminal equipment according to claim 31 wherein the Ethernet connector is an RJ45 jack comprising the contact 1 through the contact 8 and the distinguishing information about the piece of Ethernet data terminal equipment associated to impedance within the at least one path comprises *identifying information about the piece of Ethernet data terminal equipment.*

46. The piece of Ethernet data terminal equipment according to Claim 31 wherein the distinguishing information about the piece of Ethernet data terminal equipment associated to impedance within the at least one path comprises *identifying information about the piece of Ethernet data terminal equipment* and the piece of Ethernet data terminal equipment is a piece of BaseT Ethernet data terminal equipment.

47. The piece of Ethernet data terminal equipment according to Claim 31 wherein the Ethernet connector is an RJ45 jack comprising the contact 1 through the contact 8, the piece of Ethernet data terminal equipment is a piece of BaseT Ethernet data terminal equipment and the distinguishing information about the piece of Ethernet data terminal equipment associated to impedance

> within the at least one path comprises *identifying information about the piece of Ethernet data terminal equipment.*
>
> 70. The method according to claim 67 wherein the arranging impedance within the at least one path to distinguish the piece of terminal equipment comprises *arranging impedance within the at least one path to identify the piece of terminal equipment.*
>
> 71. The method according to claim 67 wherein the arranging impedance within the at least one path to distinguish the piece of terminal equipment comprises *arranging impedance within the at least one path to uniquely identify the piece of terminal equipment.*
>
> 111. The piece of terminal equipment according to claim 108 wherein *the impedance within the at least one path is arranged to identify the piece of terminal equipment.*
>
> 112. The piece of terminal equipment according to claim 108 wherein *the impedance within the at least one path is arranged to uniquely identify the piece of terminal equipment.*

Claims 3, 15, 16, 17 each depends from independent Claim 1, Claims 33, 45, 46, 47 each depends from independent Claim 31, Claims 70, 71 each depends from independent Claim 67, and Claims 111, 112 each depends from independent Claim 108. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that Cummings, Maman, and PCnet, singly or in combination, fail to teach or suggest associating or arranging "*identifying information* about the piece of Ethernet data terminal equipment to impedance within the at least one path" as claimed.

The '012 Patent explains:

> [The prior art was] generally incapable of detecting the electrical connection status of equipment[;] *it cannot detect the physical*

> *location of equipment, the identifying name of equipment is not permanent, and the monitored assets must be powered-up.*
>
> Therefore, a method for *permanently identifying an asset by attaching an external or internal device to the asset and communicating with that device using existing network wiring or cabling is desirable. . . . Such a device would allow a company to track its assets, locate any given asset, and count the total number of identified assets at any given time, thus significantly reducing its [total cost of ownership] of identified assets.*[45]

In short, the patentees provided a solution to *identify*, communicate with, and manage distributed assets in a BaseT Ethernet network, over existing network wires, even when the assets (e.g., PCs, workstations) were operationally turned off. This *identification*, especially when interpreted in light of the specification, permanently identifies an asset and permits tracking of the asset.

In contrast, Cummings, Maman, nor PCnet provide any teaching or suggestion regarding "distinguishing information", let alone "identifying information." Cummings is silent with regard to "identifying" any Ethernet data terminal equipment. Moreover, continuity information about the entire current loop of Cummings (which extends along data communication links 14, personal computers 12a-12d, etc.) does not and cannot associate or arrange "*identifying information* about the piece of Ethernet data terminal equipment to impedance within the at least one path." Because each personal computer 12a-12d is identical, connection/disconnection of a personal computer does not permit one to gain "identifying information about the piece of Ethernet data terminal equipment" or "uniquely identify" the piece of terminal equipment. Moreover, there is no teaching or suggestion in Cummings, Maman, or PCnet where any

[45] '012 Patent at 1:63–2:11.

"identifying information" is associated or arranged relative to impedance within the claimed path.

Accordingly, Patent Owner submits that like independent Claims 1, 31, 67, 108, dependent Claims 3, 9, 39, 105, 107, 146, 148 remain patentable.

(2). Dependent Claims 5, 35, 73, 114—'Detection Protocol'

Claims 5, 35, 73, and 114 each claims:

> 5. The method according to claim 1 wherein the impedance within the at least one path is part of a *detection protocol*.
>
> 35. The piece of Ethernet data terminal equipment according to claim 31 wherein the impedance within the at least one path is part of a *detection protocol*.
>
> 73. The method according to claim 67 wherein the arranging impedance within the at least one path comprises arranging impedance within the at least one path to be part of a *detection protocol*.
>
> 114. The piece of terminal equipment according to claim 108 wherein the impedance within the at least one path is arranged to be part of a *detection protocol*.

Claim 5 depends from independent Claim 1, Claim 35 depends from independent Claim 31, Claim 73 depends from independent Claim 67, and Claim 114 depends from independent Claim 108. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that Cummings, Maman, and PCnet, singly or in combination, fail to teach or suggest the "path is part of a detection protocol", "impedance within the . . . path is part of a detection protocol", "arranging impedance within the . . . path to be part of a detection protocol", or "impedance

within the . . . path is arranged to be part of a detection protocol" as claimed. These claims specifically require that the path and/or impedance within the path is part of a "detection protocol." The word "protocol" has a well understood meaning in the networking field. A protocol, as defined in the computer networking field, is "a mutually agreed upon method of communication." See the Internet Engineering Task Force 1993 paper titled "FYI on 'What is the Internet?'" (available at https://tools.ietf.org/html/rfc1462.) However, the Requester's theory on unpatentability is predicated on disconnection of the claimed path and does not provide any alleged teaching for "protocol," as that term is understood in the networking field. Therefore, no "protocol" can be implemented in a disconnected path.

Accordingly, Patent Owner submits that like independent Claims 1, 31, 67, and 108, dependent Claims 5, 35, 73, and 114 remains patentable.

(3). Dependent Claims 7, 8, 9, 37, 38, 39—"Two Contacts"

Claims 7, 8, 9, 37, 38, 39 each claims:

> 7. The method according to claim 1 wherein *the at least one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts* of the Ethernet connector.
>
> 8. The method according to claim 1 wherein *the at least another one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts* of the Ethernet connector.
>
> 9. The method according to claim 1 wherein the Ethernet connector is an RJ45 jack comprising the contact 1 through the contact 8, the *at least one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts* of the Ethernet connector and the two of the plurality of contacts comprise the contact 3 and the contact 6.

> 37. The piece of Ethernet data terminal equipment according to claim 31 wherein *the at least one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts* of the Ethernet connector.
>
> 38. The piece of Ethernet data terminal equipment according to claim 31 wherein *the at least another one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts* of the Ethernet connector.
>
> 39. The piece of Ethernet data terminal equipment according to claim 31 wherein the Ethernet connector is an RJ45 jack comprising the contact 1 through the contact 8, *the at least one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts* of the Ethernet connector and the two of the plurality of contacts comprise the contact 3 and the contact 6.

Claims 7, 8, and 9 depend from independent Claim 1, and Claims 37, 38, and 39 depend from independent Claim 31. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that Cummings, Maman, and PCnet, singly or in combination, fail to teach or suggest that the claimed "at least one" or the claimed "at least another one" of the contacts of the Ethernet connection comprises "two of the plurality of contacts" as claimed. That is, the claimed path is defined as being coupled across "at least one" and "at least another one" of the contacts of the Ethernet connector, but by Claims 7, 8, 9, 37, 38, and 39, the "at least one" or the "at least another one" is now claimed as "two." However, this arrangement is impossible in Cummings as the field winding 53 of the isolation transformer 52 is *only* illustrated across a single pair of transmit wires. In order for Cummings to teach a path across "two" contacts and

"at least another one" of the contacts, there would be no return through the isolation transformer 52. Cummings does not, and could not, envision such an arrangement.

Accordingly, Patent Owner submits that like independent Claims 1 and 31, dependent Claims 7, 8, 9, 37, 38, and 39 remain patentable.

(4). Dependent Claim 9—'Contact 3 and Contact 6'

Claim 9 claims:

> 9. The method according to claim 1 wherein the *Ethernet connector is an RJ45 jack comprising the contact 1 through the contact 8, the at least one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts of the Ethernet connector and the two of the plurality of contacts comprise the contact 3 and the contact 6.*

Claim 9 depends from independent Claim 1. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that Cummings, Maman, and PCnet, singly or in combination, fail to teach or suggest the "*Ethernet connector is an RJ45 jack comprising the contact 1 through the contact 8, the at least one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts of the Ethernet connector and the two of the plurality of contacts comprise the contact 3 and the contact 6*" as claimed. Specifically, Cummings and Maman provide no teaching or suggestion regarding the Ethernet connector of the Ethernet data terminal equipment being an "RJ45 jack." Moreover, it is noted that according to Claim 1, the method comprises "coupling at least one path across the selected contacts of the Ethernet connector" where "the selected contacts comprising at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the

Ethernet connector." Claim 9 claims that "the at least one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts of the Ethernet connector and the two of the plurality of contacts comprise the contact 3 and the contact 6." That is, the method requires coupling at least one path across the combination of contact 3 and the contact 6 and the claimed "at least another one of the plurality of contacts."

The Requester's argues that "Cummings teaches: 'Transmit wires 44a through 44d and 46a through 46d are existing wires found within data communication link 14 that are selectively tapped as pairs in accordance with the present invention to provide current loops 50a through 50d." Cummings, col. 4 ll. 20-24."[46] However, this misconstrues the teachings of Cummings. Cummings in fact teaches an existing field winding 53 extending across a single pair of transmit wires (e.g. 44a and 46a) or a single pair of receive wires (not shown in Cummings) (i.e. an intra-pair loop). However, Cummings does not teach or suggest a path across contacts 3 and 6 and "at least another one of the plurality of contacts" (i.e. an inter-pair loop).

It is noted that the Office, in the Notice of Intent to Issue a Reexamination Certificate mailed August 9, 2017 in the related reexamination of the '760 Patent, confirmed this interpretation of Cummings and stated "Cummings fails to teach 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" as recited (e.g., between 44a and 44b/46b) (i.e., an inter-pair loop)."[47]

Accordingly, Patent Owner submits that like independent Claim 1, dependent Claim 9 remains patentable.

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[46] Request, page 37.
[47] Notice of Intent to Issue a Reexamination Certificate (see Control No. 90/013,802; U.S. Patent No. 8,902,760, mailed August 9, 2017, page 6.

(5). Dependent Claim 11, 41—'Two Paths'

Claims 11 and 41 each claims:

> 11. The method according to claim 1 wherein the coupling at least one path across the selected contacts comprises coupling *two paths* across the selected contacts.
>
> 41. The piece of Ethernet data terminal equipment according to claim 31 wherein the at least one path comprises *two paths*.

Claim 11 depends from independent Claim 1, and Claim 41 depends from independent Claim 31. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that Cummings, Maman, and PCnet, singly or in combination, fail to teach or suggest the claimed path being "two paths" as claimed. This arrangement is impossible in Cummings as the field winding 53 of the isolation transformer 52 is *only* illustrated across a single pair of transmit wires and represents only a single path. In order for Cummings to teach two paths the contacts would contravene the operation and purpose of the isolation transformer 52. Cummings does not, and could not, envision such an arrangement.

Accordingly, Patent Owner submits that like independent Claims 1 and 31, dependent Claims 11 and 41 remain patentable.

(6). Dependent Claim 22, 52, 80, 121—"Impedance Function of Voltage"

Claims 22, 52, 80, 121 each claims:

> 22. The method according to claim 1 wherein *the impedance within the at least one path is a function of voltage* across the selected contacts.

> 52. The piece of Ethernet data terminal equipment according to claim 31 wherein *the impedance within the at least one path is a function of voltage* across the selected contacts.
>
> 80. The method according to claim 67 wherein the arranging impedance within the at least one path comprises arranging *impedance within the at least one path to be a function of voltage* across the specific contacts.
>
> 121. The piece of terminal equipment according to claim 108 wherein the *impedance within the at least one path is arranged to be a function of voltage* across the specific contacts.

Claim 22 depends from independent Claim 1, Claim 52 depends from independent Claim 31, Claim 80 depends from independent Claim 67, and Claim 121 depends from independent Claim 108. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that Cummings, Maman, and PCnet, singly or in combination, fail to teach or suggest the claimed "impedance within the . . . path is a function of voltage across the . . . contacts" or "arranging impedance within the . . . path to be a function of voltage across the . . . contacts" as claimed. The impedance within the isolations transformer 52 of Cummings is not a function of voltage and cannot change as a function of anything, much less voltage. Variation of impedance of the isolation transformer 52 of Cummings would disrupt the Ethernet signal. The impedance (actually, admittance) within isolation transformer 52 does not change and no evidence is presented by Requester that suggests otherwise. Requester merely argues that "this function is inherent in any of the electrical engineering references included in this request."[48] However, Ohm's law does not suggest that impedance must vary or be a function of voltage.

[48] Request, page 48.

Accordingly, Patent Owner submits that like independent Claims 1, 31, 67, and 108, dependent Claims 22, 52, 80, 121 remain patentable.

(7). Dependent Claim 39—'Contact 3 and Contact 6'

Claim 39 claims:

> 39. The piece of Ethernet data terminal equipment according to claim 31 wherein the Ethernet connector is an RJ45 jack comprising the contact 1 through the contact 8, *the at least one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts of the Ethernet connector and the two of the plurality of contacts comprise the contact 3 and the contact 6.*

Claim 39 depends from independent Claim 31. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that Cummings, Maman, and PCnet, singly or in combination, fail to teach or suggest the "*Ethernet connector is an RJ45 jack comprising the contact 1 through the contact 8, the at least one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts of the Ethernet connector and the two of the plurality of contacts comprise the contact 3 and the contact 6*" as claimed. Specifically, Cummings and Maman provide no teaching or suggestion regarding the Ethernet connector of the Ethernet data terminal equipment being an "RJ45 jack." Moreover, it is noted that according to Claim 1, the piece of Ethernet data terminal equipment comprises "at least one path coupled across selected contacts" where "the selected contacts comprising at least one of the plurality of contacts of the Ethernet connector and at least another one of the plurality of contacts of the Ethernet connector." Claim 39 claims that "the at least one of the plurality of contacts of the Ethernet connector comprises two of the plurality of contacts of the Ethernet connector and the

two of the plurality of contacts comprise the contact 3 and the contact 6." That is, the Ethernet data terminal equipment requires at least one path coupled across the combination of contact 3 and the contact 6 and the claimed "at least another one of the plurality of contacts."

The Requester's argues that "Cummings teaches: 'Transmit wires 44a through 44d and 46a through 46d are existing wires found within data communication link 14 that are selectively tapped as pairs in accordance with the present invention to provide current loops 50a through 50d." Cummings, col. 4 ll. 20-24."[49] However, this misconstrues the teachings of Cummings. Cummings in fact teaches an existing field winding 53 extending across a single pair of transmit wires (e.g. 44a and 46a) or a single pair of receive wires (not shown in Cummings). However, Cummings does not teach or suggest a path across contacts 3 and 6 and "at least another one of the plurality of contacts" (i.e. an inter-pair loop).

It is noted that the Office, in the Notice of Intent to Issue a Reexamination Certificate mailed August 9, 2017 in the related reexamination of the '760 Patent, confirmed this interpretation of Cummings and stated "Cummings fails to teach 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" as recited (e.g., between 44a and 44b/46b) (i.e., an inter-pair loop)."[50]

Accordingly, Patent Owner submits that like independent Claim 31, dependent Claim 39 remains patentable.

(8). Dependent Claims 27, 28, 57, 58—'Path Formed Through Terminal Equipment'

Claims 27, 28, 57, and 58 each claims:

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[49] Request, page 62.
[50] Notice of Intent to Issue a Reexamination Certificate (see Control No. 90/013,802; U.S. Patent No. 8,902,760, mailed August 9, 2017, page 6.

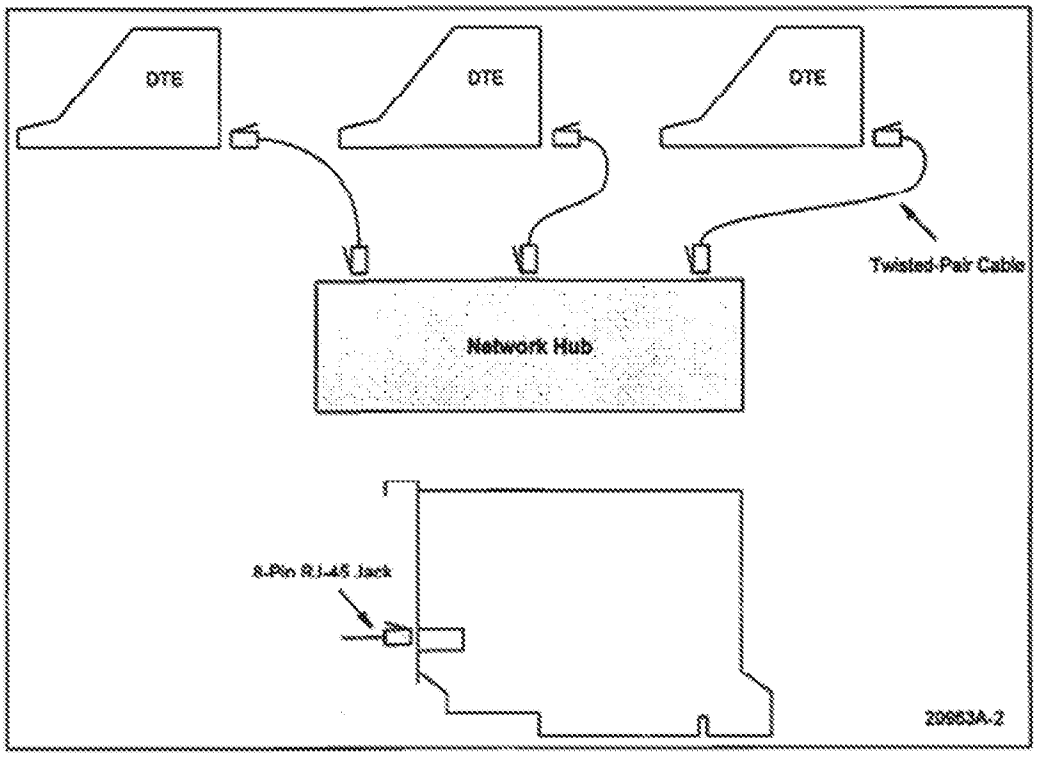
> 27. The method according to claim 1 wherein the at least one path coupled across the selected contacts *is formed through* the piece of Ethernet data terminal equipment.
>
> 28. The method according to any one of claims 1 through 26 wherein the at least one path coupled across the selected contacts *is formed through* the piece of Ethernet data terminal equipment.
>
> 57. The piece of Ethernet data terminal equipment according to claim 31 wherein the at least one path coupled across the selected contacts *is formed through* the piece of Ethernet data terminal equipment.
>
> 58. The piece of Ethernet data terminal equipment according to any one of claims 31 through 56 wherein the at least one path coupled across the selected contacts *is formed through* the piece of Ethernet data terminal equipment.

Claim 27 depends from independent Claim 1, and Claim 28 is a multiple-dependent claim depending from any one of Claims 1-26. Claim 57 depends from independent Claim 31, and Claim 58 is a multiple-dependent claim depending from any one of Claims 31-56. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that Cummings, Maman, and PCnet, singly or in combination, fail to teach or suggest "at least one path coupled across the selected contacts *is formed through* the piece of Ethernet data terminal equipment" as claimed. These claims specifically require that the path coupled across the selected contacts is actually "*formed through* the piece of Ethernet data terminal equipment." The explicit language of the claim does not permit a reading of the claim to allow the path to be formed through ancillary componentry.

The Requester argues that "Cummings teaches: '[t]he low current power signal flows through an internal path provided by existing circuitry in personal computer 12a.' Cummings, col. 4 ll. 27-30."[51] However, this overlooks the fact that the Requester's alleged path (i.e. the field winding 53 of the isolation transformer 52, in addition to the data communication links 14 and current loops 50a through 50d) does not meet the claimed definition of a "path," which requires associating "distinguishing information about the piece of Ethernet data terminal equipment *to impedance within the at least one path*." As one will recall, the field winding 53 of Cummings is an existing current loop that provides no impedance (in fact, it is merely admittance) and certainly does not provide impedance within the path to be associated to distinguishing information about the piece of Ethernet data terminal equipment. The field winding 53 of Cummings is identical in every personal computer 12a and, thus, provides no distinguishing information. Accordingly, the Requester's alleged "path" is not "formed through" the piece of Ethernet data terminal equipment and Cummings fails to teach the claimed path being "formed through" the piece of Ethernet data terminal equipment.

The Requester further cursorily states that "PCnet illustrates an 8-pim RJ-45 Jack that illustrates the path being formed through a DTE:

[51] Request, pages 51, 52, and 77.



PCnet, 3-1, Figure 3-1."[52] However, it should be abundantly clear that no such "path" is taught, suggested, or illustrated in PCnet, much less a path "formed through" the piece of Ethernet data terminal equipment. PCnet merely illustrates blank structures devoid of any circuitry detail. PCnet, in contrast to Cummings, does not teach the use of existing BaseT wiring and/or a path *formed through* a piece of terminal equipment to form an associated current loop for any purpose - at least because, as a core tenet of Ethernet, *Ethernet communications signals do not travel through a current loop.*

Accordingly, Patent Owner submits that like independent Claims 1 and 31, dependent Claims 27, 28, 57, and 58 remain patentable.

(9). Dependent Claims 105 and 107—'Contacts 1 and 2 and Contacts 3 and 6'

[52] Request, pages 52 and 77.

Claim 105 claims:

> 105. The method according to claim 67 wherein *the at least one of the specific contacts comprises the contact 1 and the contact 2 and the at least another one of the specific contacts comprises the contact 3 and the contact 6.*

Claim 107 claims:

> 107. The method according to claim 106 wherein *the at least one of the specific contacts comprises the contact 1 and the contact 2 and the at least another one of the specific contacts comprises the contact 3 and the contact 6.*

Claim 105 depends from independent Claim 67, and Claim 107 depends from multiple-dependent Claim 106 that depends from any one of Claims 67-104. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that Cummings, Maman, and PCnet, singly or in combination, fail to teach or suggest "*the at least one of the specific contacts comprises the contact 1 and the contact 2 and the at least another one of the specific contacts comprises the contact 3 and the contact 6*" as claimed. Specifically, the method of Claim 67 comprises "coupling at least one path across specific contacts of the Ethernet connector" where "the Ethernet connector comprising the contact 1 through the contact 8, the specific contacts of the Ethernet connector comprising at least one of the contacts of the Ethernet connector and at least another one of the contacts of the Ethernet connector." Claims 105 and 107 each claims that "*the at least one of the specific contacts comprises the contact 1 and the contact 2 and the at least another one of the specific contacts comprises the contact 3 and the contact 6.*" That is, the method requires coupling at least one path across *the contacts 1 and 2 and the contacts 3 and 6* of the Ethernet connector.

The Requester's argues that "Cummings teaches: 'Transmit wires 44a through 44d and 46a through 46d are existing wires found within data communication link 14 that are selectively tapped as pairs in accordance with the present invention to provide current loops 50a through 50d." Cummings, col. 4 ll. 20-24."[53] However, this misconstrues the teachings of Cummings. Cummings in fact teaches an existing field winding 53 extending across a single pair of transmit wires (e.g. 44a and 46a) or a single pair of receive wires (not shown in Cummings) (i.e. an intra-pair loop). However, Cummings does not teach or suggest a path coupled across contacts 1 and 2 and contacts 3 and 6 (i.e. an inter-pair loop).

It is noted that the Office, in the Notice of Intent to Issue a Reexamination Certificate mailed August 9, 2017 in the related reexamination of the '760 Patent, confirmed this interpretation of Cummings and stated "Cummings fails to teach 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" as recited (e.g., between 44a and 44b/46b) (i.e., an inter-pair loop)."[54]

Accordingly, Patent Owner submits that like independent Claim 67, dependent Claims 105 and 107 remain patentable.

(10). Dependent Claims 146 and 148—'Contacts 1 and 2 and Contacts 3 and 6'

Claim 146 claims:

> 146. The piece of terminal equipment according to claim 108 wherein *the at least one of the specific contacts comprises the contact 1 and the contact 2 and the at least another one of the specific contacts comprises the contact 3 and the contact 6.*

[53] Request, page 111.
[54] Notice of Intent to Issue a Reexamination Certificate (see Control No. 90/013,802; U.S. Patent No. 8,902,760, mailed August 9, 2017, page 6.

Claim 148 claims:

> 148. The piece of terminal equipment according to claim 147 wherein *the at least one of the specific contacts comprises the contact 1 and the contact 2 and the at least another one of the specific contacts comprises the contact 3 and the contact 6.*

Claim 146 depends from independent Claim 108, and Claim 148 depends from multiple-dependent Claim 147 that depends from any one of Claims 108-145. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that Cummings, Maman, and PCnet, singly or in combination, fail to teach or suggest "*the at least one of the specific contacts comprises the contact 1 and the contact 2 and the at least another one of the specific contacts comprises the contact 3 and the contact 6*" as claimed. Specifically, the adapted piece of terminal equipment of Claim 108 comprises "at least one path coupled across specific contacts of the Ethernet connector" where "the Ethernet connector comprising the contact 1 through the contact 8, the specific contacts comprising at least one of the contacts of the Ethernet connector and at least another one of the contacts of the Ethernet connector." Claims 146 and 148 each claims that "*the at least one of the specific contacts comprises the contact 1 and the contact 2 and the at least another one of the specific contacts comprises the contact 3 and the contact 6.*" That is, the adapted piece of terminal equipment requires at least one path coupled across *the contacts 1 and 2 and the contacts 3 and 6* of the Ethernet connector.

The Requester's argues that "Cummings teaches: 'Transmit wires 44a through 44d and 46a through 46d are existing wires found within data communication link 14 that are selectively tapped as pairs in accordance with the present invention to provide current loops 50a through

50d." Cummings, col. 4 ll. 20-24."[55] However, this misconstrues the teachings of Cummings. Cummings in fact teaches an existing field winding 53 extending across a single pair of transmit wires (e.g. 44a and 46a) or a single pair of receive wires (not shown in Cummings) (i.e. an intra-pair loop). However, Cummings does not teach or suggest a path coupled across contacts 1 and 2 and contacts 3 and 6 (i.e. an inter-pair loop).

It is noted that the Office, in the Notice of Intent to Issue a Reexamination Certificate mailed August 9, 2017 in the related reexamination of the '760 Patent, confirmed this interpretation of Cummings and stated "Cummings fails to teach 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" as recited (e.g., between 44a and 44b/46b) (i.e., an inter-pair loop)."[56]

Accordingly, Patent Owner submits that like independent Claim 108, dependent Claims 146 and 148 remain patentable.

5. Rejection under 35 U.S.C. §103 over Cummings in view of Maman and Annunziata

a). Dependent Claims 12, 42, 89

REJ 15) Claims 12, 42, and 89 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman and Annunziata et al.

This rejection is traversed.

Claims 12, 42, and 89 depend from independent Claims 1, 31, and 67, respectively. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings and Maman. The Patent Owner further notes that Annunziata et al.

[55] Request, page 111.
[56] Notice of Intent to Issue a Reexamination Certificate (see Control No. 90/013,802; U.S. Patent No. 8,902,760, mailed August 9, 2017, page 6.

fails to overcome the deficiencies of Cummins and Maman as specifically outlined herein, including, but not limited to, failing to teach or suggest that a piece of (Ethernet data) terminal equipment having an Ethernet connector having contacts is adapted to include a path coupled across selected or specific contacts of the Ethernet connector, and that "distinguishing information" about the piece of terminal equipment is associated to impedance within this path.

More particularly, Annunziata merely teaches "[a] device, method and system for testing in situ the wiring between a data terminal equipment and a ring or similar type local area network having a loop conduction path with a plurality of data terminal equipment (DTE) coupled to said loop conduction path. The DTE is provided with a mechanism for generating DC current. The DC currents flow from the DTE through a length of interconnecting conductors and self-shorting connectors towards the loop conduction path."[57] The Requester indicates that "Annunziata is provided for the sole purpose of illustrating a Zener diode in a media wire fault detect mechanism."[58]

However, the Requester's allegations are fraught with errors. First, the DTE of Annunziata is never an "Ethernet data terminal equipment." A stated above, Annunziata was used for certain *ring topology networks*, which Ethernet is not a ring topology network—it is a star topology network. Secondly, BaseT Ethernet data terminal equipment never put power to an Ethernet cable. Thirdly, there would be no use of the DC current if there was a DC current provided by the DTE. Fourth, the reason for the DC signal in Token Ring was directed to the use of wrapback connector on shielded twisted pair cabling used by Token Ring networks. As there are no such connectors used in Ethernet, there would be no basis to have a DC current on

[57] Annunziata, Abstract.
[58] Request, page 16.

the lines. In fact, self-shorting (wrapback) connector necessary to seal the ring and to detect broken wires in Token Ring networks are fatal to Ethernet communications because it would cause a broadcast storm. Fifth, Annunziata nowhere teaches the use of a Zener diode with his invention—the only occurrence of the term "Zener diode" appears in the Background of the Invention in the Prior Art Section. Annunziata does not provide any teachings on the use of Zener diodes or how one would be used as claimed in the '012 Patent. Finally, Annunziata is unable to detect or otherwise determine any distinguishing information about the data terminal equipment because impedance of each data terminal equipment would be identical.

Moreover, the *only* motivation provided by the Requester to establish why a PHOSITA would combine the teachings of Annunziata with either of Cummings or Maman is, *in toto*, "Cummings and each of the described references [Annunziata is only identified in the section title] utilize circuits with similar elements that would be expected to maintain their functions if implemented in other circuits."[59]

Requester clearly fails to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*. Moreover, the Requester's alleged motivation clearly overlooks the fact that Annunziata is not applicable to "Ethernet data terminal equipment" and, furthermore, does not even use a Zener diode in its own invention.

Accordingly, Patent Owner submits that like independent Claims 1, 31, and 67, dependent Claims 12, 42, and 89 remain patentable.

[59] Request, page 28.

6. Rejection under 35 U.S.C. §103 over Cummings in view of Maman and Johnson

a). Dependent Claims 20, 50, 77, and 78

REJ 16) Claims 20, 50, 77, and 78 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman and Johnson.

This rejection is traversed.

Claims 20, 50, and 77-78 depend from independent Claims 1, 31, and 67, respectively. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings and Maman. The Patent Owner further notes that Johnson fails to overcome the deficiencies of Cummins and Maman as specifically outlined herein, including, but not limited to, failing to teach or suggest that a piece of (Ethernet data) terminal equipment having an Ethernet connector having contacts is adapted to include a path coupled across selected or specific contacts of the Ethernet connector, and that "distinguishing information" about the piece of terminal equipment is associated to impedance within this path.

The Requester argues that Johnson allegedly teaches "baud rate analysis" in connection with barcode printers.[60] The Requester further indicates that "Johnson is provided for the purpose of illustrating signal durations based on baud rate."[61]

However, Johnson merely teaches "[a]n on-line barcode printer is shown for communicating with one of a number of host computers having various communication parameters."[62] However, Johnson is unable to detect or otherwise determine any "distinguishing information" about data terminal equipment. In fact, Johnson is *completely silent* with regard to "Ethernet" and does not provide sufficient motivation to combine with Cummings or Maman.

[60] Request, pages 44, 45, 69, 70, and 89-92.
[61] Request, page 19.
[62] Johnson, Abstract.

The *only* motivation provided by the Requester to establish why a PHOSITA would combine the teachings of Johnson with either of Cummings or Maman is, *in toto*, "Johnson . . . is applicable at least to Ethernet network connections."[63]

Requester clearly fails to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*. Moreover, the Requester's alleged motivation clearly overlooks the fact that Johnson is *completely silent* with regard to "Ethernet," and, in fact, never uses the term "Ethernet."

Accordingly, Patent Owner submits that like independent Claims 1, 31, and 67, dependent Claims 20, 50, and 77-78 remain patentable.

7. Rejection under 35 U.S.C. §103 over Cummings in view of Maman and Bloch

a). Dependent Claims 21, 23, 51, 53, 79, and 97

REJ 17) Claims 21, 23, 51, 53, 79, and 97 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman and Bloch et al.

This rejection is traversed.

Claims 21, 23, 51, 53, 79, and 97 depend from independent Claims 1, 31, and 67. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings and Maman. The Patent Owner further notes that Bloch fails to overcome the deficiencies of Cummins and Maman as specifically outlined herein, including, but

[63] Request, page 27.

not limited to, failing to teach or suggest that a piece of (Ethernet data) terminal equipment having an Ethernet connector having contacts is adapted to include a path coupled across selected or specific contacts of the Ethernet connector, and that "distinguishing information" about the piece of terminal equipment is associated to impedance within this path.

Bloch merely teaches "a circuit arrangement in which first and second communication channels are provided over two conductor pairs which are simultaneously used for power feed and bi-directional signaling (sic) between first and second equipment units. These first and second equipment units are a control unit and key telephone station sets in a key telephone system."[64] There is no Ethernet anything that existed at the time of Bloch and Bloch is unable to detect or otherwise determine any distinguishing information about the data terminal equipment as any impedance would be fatal to sending keystrokes.

Moreover, the *only* motivation provided by the Requester to establish why a PHOSITA would combine the teachings of Bloch with either of Cummings or Maman is, *in toto*, "Cummings and each of the described references [Bloch is only identified in the section title] utilize circuits with similar elements that would be expected to maintain their functions if implemented in other circuits."[65] However, this overlooks that Bloch predates Ethernet and is not aware of the particular considerations necessary in Ethernet.

Requester clearly fails to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence

[64] Bloch, at 2:54-61.
[65] Request, page 28.

presented as required by *In re Lee*. Moreover, the Requester's alleged motivation clearly overlooks the fact that Bloch is not applicable to "Ethernet" and does not even envision Ethernet.

Accordingly, Patent Owner submits that like independent Claims 1, 31, and 67, dependent Claims 21, 23, 51, 53, 79, and 97 remain patentable.

8. Rejection under 35 U.S.C. §103 over Cummings in view of Maman and Sutterlin

a). Dependent Claims 74, 75, 81-86, and 90

REJ 18) Claims 74, 75, and 81-86 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman and Sutterlin et al.

REJ 19) Claim 90 is allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman and Sutterlin.

There rejections are traversed.

Claims 74, 75, 81-86, and 90 depend from independent Claim 67. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings and Maman. The Patent Owner further notes that Sutterlin fails to overcome the deficiencies of Cummins and Maman as specifically outlined herein, including, but not limited to, failing to teach or suggest that a piece of (Ethernet data) terminal equipment having an Ethernet connector having contacts is adapted to include a path coupled across selected or specific contacts of the Ethernet connector, and that "distinguishing information" about the piece of terminal equipment is associated to impedance within this path.

Sutterlin merely teaches a "data communications network for delivering power and communications over the same cable bundle includes a plurality of communications nodes

wherein associated with each of the nodes is a transformer having a core, a primary winding and a secondary winding. The secondary winding has a centertap connection which either splits or merges the current in the secondary winding to eliminate net DC flux within the transformer. A DC/DC converter is also included for transforming the relatively high DC voltage of the cable down to a regulated supply potential for use by that node. The converter is coupled between the centertap of the transformer and the cable bundle. A power source provides the DC voltage distributed across the network and is coupled to the cable bundle via a centertap connection of another winding."[66]

However, Sutterlin is completely silent with regard to determination of any physical connection of a piece of terminal equipment to a data network via a flow of current through an associated current loop and is unable to determine any distinguishing information about the piece of terminal equipment.

Moreover, the *only* motivation provided by the Requester to establish why a PHOSITA would combine the teachings of Sutterlin with either of Cummings or Maman is, *in toto*, "Cummings and each of the described references [Sutterlin is only identified in the section title] utilize circuits with similar elements that would be expected to maintain their functions if implemented in other circuits."[67] However, this overlooks that Sutterlin is completely silent with regard to determination of any physical connection of a piece of terminal equipment to a data network via a flow of current through an associated current loop.

Requester clearly fails to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would combine the prior art references; (2)

[66] Sutterlin, Abstract.
[67] Request, page 28.

have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*.

Accordingly, Patent Owner submits that like independent Claim 67, dependent Claims 74, 75, 81-86, and 90 remain patentable.

9. Rejection under 35 U.S.C. §103 over Cummings in view of Maman and Libby

a). Dependent Claims 115, 116, and 122-127

REJ 20) Claims 115, 116, and 122-127 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Libby.

This rejection is traversed.

Claims 115, 116, and 122-127 depend from independent Claim 108. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that PCnet and Libby each fails to overcome the deficiencies of Cummins and Maman as specifically outlined herein, including, but not limited to, failing to teach or suggest that a piece of (Ethernet data) terminal equipment having an Ethernet connector having contacts is adapted to include a path coupled across selected or specific contacts of the Ethernet connector, and that "distinguishing information" about the piece of terminal equipment is associated to impedance within this path.

Libby merely teaches "an electric motor with a spherical air gap, wherein the rotor is supported by a bearing permitting rotation and rocking about the center of curvature of this gap. Both the stator and the rotor have elements with concentric surfaces of revolution in relation to the axis of rotation and facing each other which so overlap each other that they prevent a

separation between rotor and stator."[68] The Requester indicates that "Libby is provided for the purpose of illustrating continuously variable impedance."[69] However, Libby is silent with regard to Ethernet.

Moreover, the *only* motivation provided by the Requester to establish why a PHOSITA would combine the teachings of Libby with either of Cummings or Maman is, *in toto*, "Cummings and each of the described references [Libby is only identified in the section title] utilize circuits with similar elements that would be expected to maintain their functions if implemented in other circuits."[70] However, this overlooks that Libby is completely silent with regard to determination of any physical connection of a piece of terminal equipment to a data network via a flow of current through an associated current loop.

Requester clearly fails to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*. Again, Libby is completely silent with regard to Ethernet.

Accordingly, Patent Owner submits that like independent Claim 108, dependent Claims 115, 116, and 122-127 remain patentable.

10. Rejection under 35 U.S.C. §103 over Cummings in view of Maman, PCnet, and Johnson

a). Dependent Claims 20, 50, 77, 78, 118, and 119

[68] Libby, Abstract.
[69] Request, page 18.
[70] Request, page 28.

REJ 21) Claims 118 and 119 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Johnson.

REJ 27) Claims 20, 50, 77, 78, 118, and 119 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Johnson.

There rejections are traversed.

Claims 20, 50, 77, 78, 118, and 119 depend from independent Claims 1, 31, 67, and 108. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that PCnet and Johnson each fails to overcome the deficiencies of Cummins and Maman as specifically outlined herein, including, but not limited to, failing to teach or suggest that a piece of (Ethernet data) terminal equipment having an Ethernet connector having contacts is adapted to include a path coupled across selected or specific contacts of the Ethernet connector, and that "distinguishing information" about the piece of terminal equipment is associated to impedance within this path.

The Requester argues that Johnson allegedly teaches "baud rate analysis" in connection with barcode printers.[71] The Requester further indicates that "Johnson is provided for the purpose of illustrating signal durations based on baud rate."[72]

However, Johnson merely teaches "[a]n on-line barcode printer . . . shown for communicating with one of a number of host computers having various communication parameters."[73] However, Johnson is unable to detect or otherwise determine any "distinguishing information" about data terminal equipment. In fact, Johnson is *completely silent* with regard to "Ethernet" and does not provide sufficient motivation to combine with Cummings, Maman,

[71] Request, pages 44, 45, 69, 70, and 89-92.
[72] Request, page 19.
[73] Johnson, Abstract.

and/or PCnet. The *only* motivation provided by the Requester to establish why a PHOSITA would combine the teachings of Johnson with any of Cummings, Maman, or PCnet is, *in toto*, "Johnson . . . is applicable at least to Ethernet network connections."[74]

Requester clearly fails to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*. Moreover, the Requester's alleged motivation clearly overlooks the fact that Johnson is *completely silent* with regard to "Ethernet," and, in fact, never uses the term "Ethernet."

Accordingly, Patent Owner submits that like independent Claims 1, 31, 67, and 108, dependent Claims 20, 50, 77, 78, 118, and 119 remain patentable.

11. Rejection under 35 U.S.C. §103 over Cummings in view of Maman, PCnet, and Bloch

a). Dependent Claims 21, 23, 51, 53, 79, 97, 120, and 138

REJ 22) Claims 120 and 138 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Bloch.

REJ 28) Claims 21, 23, 51, 53, 79, 97, 120, and 138 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Bloch.

There rejections are traversed.

Claims 21, 23, 51, 53, 79, 97, 120, and 138 depend from independent Claims 1, 31, 67, and 108. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth

[74] Request, page 27.

herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that PCnet and Bloch each fails to overcome the deficiencies of Cummins and Maman as specifically outlined herein, including, but not limited to, failing to teach or suggest that a piece of (Ethernet data) terminal equipment having an Ethernet connector having contacts is adapted to include a path coupled across selected or specific contacts of the Ethernet connector, and that "distinguishing information" about the piece of terminal equipment is associated to impedance within this path.

Bloch merely teaches "a circuit arrangement in which first and second communication channels are provided over two conductor pairs which are simultaneously used for power feed and bi-directional signaling (sic) between first and second equipment units. These first and second equipment units are a control unit and key telephone station sets in a key telephone system."[75] There is no Ethernet anything that existed at the time of Bloch and Bloch is unable to detect or otherwise determine any distinguishing information about the data terminal equipment as any impedance would be fatal to sending keystrokes.

Moreover, the *only* motivation provided by the Requester to establish why a PHOSITA would combine the teachings of Bloch with either of Cummings, Maman, or PCnet is, *in toto*, "Cummings and each of the described references [Bloch is only identified in the section title] utilize circuits with similar elements that would be expected to maintain their functions if implemented in other circuits."[76] However, this overlooks that Bloch predates Ethernet and is not aware of the particular considerations necessary in Ethernet.

[75] Bloch, at 2:54-61.
[76] Request, page 28.

Requester clearly fails to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*. Moreover, the Requester's alleged motivation clearly overlooks the fact that Bloch is not applicable to "Ethernet" and does not even envision Ethernet.

Accordingly, Patent Owner submits that like independent Claims 1, 31, 67, and 108, dependent Claims 21, 23, 51, 53, 79, 97, 120, and 138 remain patentable.

12. Rejection under 35 U.S.C. §103 over Cummings in view of Maman, PCnet, and Annunziata

a). Dependent Claims 12, 42, 89, and 130

REJ 23) Claim 130 is allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Annunziata.

REJ 26) Claims 12, 42, 89, and 130 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Annunziata.

There rejections are traversed.

Claims 12, 42, 89, and 130 depend from independent Claims 1, 31, 67, and 108. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that PCnet and Annunziata each fails to overcome the deficiencies of Cummins and Maman as specifically outlined herein, including, but not limited to, failing to teach or suggest that a piece of (Ethernet data) terminal equipment having an Ethernet connector having contacts is adapted to include a path coupled across selected or specific contacts of the Ethernet connector, and that

"distinguishing information" about the piece of terminal equipment is associated to impedance within this path.

More particularly, Annunziata merely teaches "[a] device, method and system for testing in situ the wiring between a data terminal equipment and a ring or similar type local area network having a loop conduction path with a plurality of data terminal equipment (DTE) coupled to said loop conduction path. The DTE is provided with a mechanism for generating DC current. The DC currents flow from the DTE through a length of interconnecting conductors and self-shorting connectors towards the loop conduction path."[77] The Requester indicates that "Annunziata is provided for the sole purpose of illustrating a Zener diode in a media wire fault detect mechanism."[78]

However, the Requester's allegations are fraught with errors. First, the DTE of Annunziata is never an "Ethernet data terminal equipment." A stated above, Annunziata was used for certain *ring topology networks*, which Ethernet is not a ring topology network—it is a star topology network. Secondly, BaseT Ethernet data terminal equipment never put power to an Ethernet cable. Thirdly, there would be no use of the DC current if there was a DC current provided by the DTE. Fourth, the reason for the DC signal in Token Ring was directed to the use of wrapback connector on shielded twisted pair cabling used by Token Ring networks. As there are no such connectors used in Ethernet, there would be no basis to have a DC current on the lines. In fact, self-shorting (wrapback) connector necessary to seal the ring and to detect broken wires in Token Ring networks are fatal to Ethernet communications because it would cause a broadcast storm. Fifth, Annunziata nowhere teaches the use of a Zener diode with his

[77] Annunziata, Abstract.
[78] Request, page 16.

invention—the only occurrence of the term "Zener diode" appears in the Background of the Invention in the Prior Art Section. Annunziata does not provide any teachings on the use of Zener diodes or how one would be used as claimed in the '012 Patent. Finally, Annunziata is unable to detect or otherwise determine any distinguishing information about the data terminal equipment because impedance of each data terminal equipment would be identical.

Moreover, the *only* motivation provided by the Requester to establish why a PHOSITA would combine the teachings of Annunziata with either of Cummings, Maman, or PCnet is, *in toto*, "Cummings and each of the described references [Annunziata is only identified in the section title] utilize circuits with similar elements that would be expected to maintain their functions if implemented in other circuits."[79]

Requester clearly fails to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*. Moreover, the Requester's alleged motivation clearly overlooks the fact that Annunziata is not applicable to "Ethernet data terminal equipment" and, furthermore, does not even use a Zener diode in its own invention.

Accordingly, Patent Owner submits that like independent Claims 1, 31, 67, and 108, dependent Claims 12, 42, 89, and 130 remain patentable.

13. Rejection under 35 U.S.C. §103 over Cummings in view of Maman, PCnet, and Sutterlin

a). Dependent Claims 90 and 131

[79] Request, page 28.

REJ 24) Claim 131 is allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Sutterlin.

REJ 30) Claims 90 and 131 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Sutterlin.

There rejections are traversed.

Claims 90 and 131 depend from independent Claims 67 and 108. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that PCnet and Sutterlin each fails to overcome the deficiencies of Cummins and Maman as specifically outlined herein, including, but not limited to, failing to teach or suggest that a piece of (Ethernet data) terminal equipment having an Ethernet connector having contacts is adapted to include a path coupled across selected or specific contacts of the Ethernet connector, and that "distinguishing information" about the piece of terminal equipment is associated to impedance within this path.

Sutterlin merely teaches a "data communications network for delivering power and communications over the same cable bundle includes a plurality of communications nodes wherein associated with each of the nodes is a transformer having a core, a primary winding and a secondary winding. The secondary winding has a centertap connection which either splits or merges the current in the secondary winding to eliminate net DC flux within the transformer. A DC/DC converter is also included for transforming the relatively high DC voltage of the cable down to a regulated supply potential for use by that node. The converter is coupled between the centertap of the transformer and the cable bundle. A power source provides the DC voltage

distributed across the network and is coupled to the cable bundle via a centertap connection of another winding."[80]

However, Sutterlin is completely silent with regard to determination of any physical connection of a piece of terminal equipment to a data network via a flow of current through an associated current loop and is unable to determine any distinguishing information about the piece of terminal equipment.

Moreover, the *only* motivation provided by the Requester to establish why a PHOSITA would combine the teachings of Sutterlin with either of Cummings, Maman, or PCnet is, *in toto*, "Cummings and each of the described references [Sutterlin is only identified in the section title] utilize circuits with similar elements that would be expected to maintain their functions if implemented in other circuits."[81] However, this overlooks that Sutterlin is completely silent with regard to determination of any physical connection of a piece of terminal equipment to a data network via a flow of current through an associated current loop.

Requester clearly fails to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*.

Accordingly, Patent Owner submits that like independent Claims 67 and 108, dependent Claims 90 and 131 remain patentable.

[80] Sutterlin, Abstract.
[81] Request, page 28.

14. Rejection under 35 U.S.C. §103 over Cummings in view of Maman, PCnet, and Libby

a). Dependent Claims 74, 75, 81-86, 115, 116, and 122-127

REJ 29) Claims 74, 75, 81-86, 115, 116, and 122-127 are allegedly obviated under 35 U.S.C. 103 by Cummings in view of Maman, PCnet, and Libby.

This rejection is traversed.

Claims 74, 75, 81-86, 115, 116, and 122-127 depend from independent Claims 67 and 108. Accordingly, the Patent Owner directs the Board's attention to the arguments set forth herein in connection with Cummings, Maman, and PCnet. The Patent Owner further notes that PCnet and Libby each fails to overcome the deficiencies of Cummins and Maman as specifically outlined herein, including, but not limited to, failing to teach or suggest that a piece of (Ethernet data) terminal equipment having an Ethernet connector having contacts is adapted to include a path coupled across selected or specific contacts of the Ethernet connector, and that "distinguishing information" about the piece of terminal equipment is associated to impedance within this path.

Libby merely teaches "an electric motor with a spherical air gap, wherein the rotor is supported by a bearing permitting rotation and rocking about the center of curvature of this gap. Both the stator and the rotor have elements with concentric surfaces of revolution in relation to the axis of rotation and facing each other which so overlap each other that they prevent a separation between rotor and stator."[82] The Requester indicates that "Libby is provided for the purpose of illustrating continuously variable impedance."[83] However, Libby is silent with regard to Ethernet.

[82] Libby, Abstract.
[83] Request, page 18.

Moreover, the *only* motivation provided by the Requester to establish why a PHOSITA would combine the teachings of Libby with either of Cummings, Maman, or PCnet is, *in toto*, "Cummings and each of the described references [Libby is only identified in the section title] utilize circuits with similar elements that would be expected to maintain their functions if implemented in other circuits."[84] However, this overlooks that Libby is completely silent with regard to determination of any physical connection of a piece of terminal equipment to a data network via a flow of current through an associated current loop.

Requester clearly fails to articulate a *prima facie* case of obviousness and, in particular, has failed to (1) articulate a reason *why* a PHOSITA would combine the prior art references; (2) have an adequate evidentiary basis for that finding; and (3) provide a satisfactory explanation for the *motivation* finding that includes an express and "rational" connection with the evidence presented as required by *In re Lee*. Again, Libby is completely silent with regard to Ethernet.

Accordingly, Patent Owner submits that like independent Claims 67 and 108, dependent Claims 74, 75, 81-86, 115, 116, and 122-127 remain patentable.

[84] Request, page 28.

VII. CONCLUSION

In view of the above arguments, the Board should reverse the Examiner's rejection and confirm the patentability of Claims 1-148.

Patent Owner does not believe that a fee is necessary in connection with the filing of the present Appeal Brief. However, if any fees are necessary, then such fees are hereby petitioned and authorized to be charged to our Deposit Account No. 08-0750.

Respectfully submitted,

Dated: August 16, 2017

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