

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EMERSON ELECTRIC CO.,
Petitioner,

v.

SIPCO, LLC,
Patent Owner.

IPR2019-00545
Patent 8,964,708 B2

Before JONI Y. CHANG, BRYAN F. MOORE, and CHRISTA P. ZADO,
Administrative Patent Judges.

MOORE, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C § 318(a)

I. INTRODUCTION

Emerson Electric Co. (“Petitioner”) filed a Petition (“Pet.,” Paper 1) pursuant to 35 U.S.C. § 311 to institute an *inter partes* review of claims 1–24 of U.S. Patent No. 8,964,708 B2 (“the ’708 patent,” Ex. 1001). The Petition is supported by the Declaration of Vijay K. Madiseti, Ph.D. (Ex. 1003). Sipco, LLC (“Patent Owner”) filed a preliminary response. Paper 9 (“Prelim. Resp.”). In an August 30, 2019 Institution Decision, we determined that Petitioner had a reasonable likelihood of prevailing as to at least one of the challenged claims of the ’708 patent. Paper 16 (“Inst. Dec.”). Accordingly, we instituted an *inter partes* review pursuant to 37 C.F.R. § 42.108. Inst. Dec. 51.

Patent Owner filed a Patent Owner Response (Paper 20, “PO Resp.”) to which Petitioner filed a Reply (Paper 23, “Reply”). Patent Owner also filed a Sur-Reply. Paper 25. Patent Owner relies on the testimony of Dr. Ghobad Heidari. Ex. 2004.

Both parties requested a hearing for oral argument (Papers 27, 29), and a hearing was held May 29, 2020. *See* Paper 35 (“Tr.”).

A. Related Matters

Petitioner advises us that several district court lawsuits may affect or be affected by this proceeding. Pet. 3–4.¹ The ’708 patent is the subject of co-pending IPR2019-00547.

¹ The Petition’s Table of Contents is labeled with pages 1–6 and then the Petition starts again at page 1 for the body of the Petition. Citations herein are to the body of the Petition.

B. The '708 Patent

The '708 patent is directed to a system and method for remotely operated systems, and more particularly to a system for monitoring, controlling, and reporting on remote systems utilizing radio frequency (RF) transmissions. Ex. 1001, Abstract.

C. Illustrative Claim

Challenged claims 1, 11, 16, and 22 are independent claims. Challenged claims 2–10, 12–15, 17–21, 23, and 24 depend from claims 1, 11, 16, or 22. Claim 1, reproduced below, is illustrative.

1. A wireless communication device for use in a wireless communication system configured to communicate command and sensed data within the wireless communication systems, the wireless communication device comprising:
 - a transceiver configured to send and receive wireless communications;
 - and a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to format a message comprising a receiver address comprising an address of at least one remote wireless device; a command indicator comprising a command code; a data value comprising a message, wherein the controller is configured to receive a preformatted message from another wireless communication device, and based on a command code provided in the preformatted message, implement a certain function corresponding to the command code.

Ex. 1001, 14:6–23.

D. Prior Art Relied Upon

Petitioner relies upon the following prior art references:

Patents

Mason	US 6,100,817	Aug. 8, 2000 ²	(Ex. 1004)
Shuey	US 5,874,903	Feb. 23, 1999 ³	(Ex. 1005)
Ardalan	US 6,396,839 B1	May 28, 2002 ⁴	(Ex. 1008)
Lee	US 5,477,216	Dec. 19, 1995 ⁵	(Ex. 1009)
Lyons	US 6,208,266 B1	Aug. 23, 1995 ⁶	(Ex. 1010)
Ehlers	US 5,696,695	Aug. 27, 2001 ⁷	(Ex. 1011)

Other References

Control Network Protocol Specification, EIA STANDARD, EIA-709.1 (MAR. 1998) (Ex. 1014, “EIA 709.1”)⁸

Protocol Specification for ANSI Type 2 Optical Port, NEMA, ANSI C12.18-1996 (1996) (Ex. 1012, “C12.18”)

² Filed March 17, 1998.

³ Filed June 6, 1997.

⁴ Filed February 12, 1998.

⁵ Filed October 30, 1992.

⁶ Filed April 28, 1997.

⁷ Filed June 7, 1995.

⁸ Referred to in the Petition as LonTalk. Pet. 6.

E. Instituted Grounds of Unpatentability

Petitioner contends that claims 1–24 are unpatentable based on the following grounds (Pet. 6):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 5–9, 11–13, 15–20, 22, 24	103	Mason, Shuey, C12.18
3, 4, 14, 21	103	Mason, Shuey, C12.18, Ardalan
5, 11–13, 15, 19, 22	103	Mason, Shuey, C12.18, Lee
6	103	Mason, Shuey, C12.18, EIA 709.1
9, 11–13, 15, 17, 23	103	Mason, Shuey, C12.18, Ehlers
10, 24	103	Mason, Shuey, C12.18, Lyons
11–15	103	Mason, Shuey, C12.18, Lee, Ardalan, Ehlers

II. DISCUSSION

A. Relevant Law

1. Evidentiary Burden

Petitioner bears the burden of proving unpatentability of the challenged claims, and the burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail in its challenges, Petitioner must demonstrate by a preponderance of the evidence that the challenged claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

2. Obviousness

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and, (4) where in evidence, objective indicia of non-obviousness (i.e., so-called secondary considerations), including commercial success, long-felt but unsolved needs, failure of others, and unexpected results.⁹ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

3. Level of Skill

The level of ordinary skill in the art usually is evidenced by the references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978). For an obviousness analysis, prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quoting *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)). Moreover, “it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.” *In re Preda*, 401 F.2d 825, 826

⁹ Patent Owner does not put forth evidence it alleges tends to show secondary considerations of non-obviousness in its Patent Owner Response.

(CCPA 1968). That is because an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418.

Petitioner contends a person of ordinary skill in the art of the subject matter of the ’708 patent

would have had a minimum of a bachelor’s degree in electrical engineering, computer engineering, computer science, or a related field, and two or more years of experience in the development or design of wireless communication systems, or the equivalent. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education. A person having this background would have understood how to design and build wireless, multi-hop communications systems for monitoring and controlling remote devices.

Pet. 9–10 (citing Ex. 1103 ¶¶ 26–30). Patent Owner does not offer a proposed level of skill in its Patent Owner Response and does not address Petitioner’s assertions regarding the education or experience of an ordinarily skilled artisan at the time of the invention. *See generally* PO Resp. We adopt Petitioner’s articulation of the level of skill and acknowledge that the level of ordinary skill in the art is also reflected by the prior art of record. *See Okajima*, 261 F.3d at 1355; *GPAC Inc.*, 57 F.3d at 1579; *Oelrich*, 579 F.2d at 91.

B. Priority

The application leading to the ’708 patent, U.S. Application No. 12/758,590, was filed on April 12, 2010. Ex. 1001, code (22). However, the ’708 patent indicates, on its face, that it is the result of a chain of

applications, including continuations and continuations-in-part, dating back to the filing of U.S. Application No. 09/412,895, filed on October 5, 1999. *Id.* at [63]. In addition, the '708 patent identifies Provisional Application No. 60/224,043, filed on August 9, 2000, in its ancestral chain. *Id.* at [60], 1:8–38.

Petitioner argues the claims are not entitled to claim priority to two of the applications in the chain on the grounds that several claim limitations are not supported by the applications. Pet. 10. The earliest effective date of C12.18 is the only reference challenged by Patent Owner. PO Resp. 62–69. Because we find, as explained below C12.18 pre-dates the earliest date to which Patent Owner potentially could claim priority, i.e., October 5, 1999, we need not and do not reach the issue of the priority date of the '708 patent for purposes of this decision.

C. Prior Art Status of C12.18

“Public accessibility” has been called the touch-stone in determining whether a prior art reference constitutes a printed publication. *In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986). A reference is considered publicly accessible if it was disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter can locate it with exercise of reasonable diligence. *Jazz Pharm., Inc. v. Amneal Pharm., LLC*, 895 F.3d 1347, 1355–1356 (Fed. Cir. 2018). “Whether a reference qualifies as a printed publication under § 102 is a legal conclusion based on underlying fact findings.” *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 772 (Fed. Cir. 2018). Patent Owner contends that “The Petition contains only one parenthetical discussing whether C12.18 is a printed publication: ‘C12.18 (dated 4/8/1996; §102(b) art—see

Ex. 1023, 477)’ (Petition at 15), [which] is insufficient to meet Petitioner’s burden” to show that C12.18 is prior art.” PO Resp. 63. We are not convinced that Petitioner has failed to satisfy its burden.

Petitioner’s support for the public accessibility of C12.18 includes the date April 8, 1996 that the document was “approved by ANSI [American National Standards Institute, Inc.]” Pet. 15; Ex. 1012. Patent Owner argues this is insufficient to show public accessibility. PO Resp. 64. Petitioner’s citation to Exhibit 1023 in the parenthetical refers to an Information Disclosure Statement (IDS) for U.S. Patent No. 9,439,126, another patent owned by Patent Owner. *Id.* (citing Pet. 15). The IDS states ““AMERICAN NATIONAL STANDARDS INSTITUTE, INC., ‘ANSI C12.18-1996: Protocol Specification for ANSI Type 2 Optical Port,’ National Electrical Manufactures Association, 1996.” Ex. 1023, 477. Patent Owner argues this is insufficient to show public accessibility. PO Resp. 64–65. Patent Owner points out that C12.18 limits dissemination stating “[n]o part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without prior written permission of the publisher.” PO Resp. 65 (citing Ex. 1012, 3). Patent Owner also argues a declaration (Ex. 1035), which is uncited in the Petition and recites that C12.18 was obtained on an unspecified date by “Clarivate Analytics” at the direction of Petitioner’s counsel, is also insufficient to show public accessibility. PO Resp. 65–66.

Petitioner asserts that in a prior IPR, i.e., IPR2016-01895 (the ’895 IPR), the Board found C12.18 was prior art based on, among other things, that SIPCO (the same Patent Owner as in this IPR) allegedly conceded C12.18 was “prior art.” Reply 25. Petitioner contends this is an admission during prosecution. *Id.* at 25–26. We are not convinced that, on these facts,

failing to contest an issue in a previous IPR is an “admission[.]” for the purpose of proving the effective date of prior art. Petitioner also relies on SIPCO’s submission an IDS acknowledging a “1996” publication date. *Id.* at 25 (citing Ex. 1023, 477; Pet. 15). Listing on an IDS does not prove public accessibility on an alleged publication date. *In re Lister*, 583 F.3d 1307, 1316 (Fed. Cir. 2009); *cf. ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d 860, 866 (Fed. Cir. 2010) (“mere submission of an IDS to the USPTO does not constitute the patent applicant’s admission that any reference in the IDS is material prior art.”) (quoting *Abbott Labs. v. Baxter Pharm. Prods., Inc.*, 334 F.3d 1274, 1279 (Fed.Cir.2003)).

Petitioner further asserts that “C12.18 was approved by the American National Standards Institute (ANSI) and published by the National Electrical Manufacturers Association (NEMA) in 1996—both leading standards organizations—years before the ’708’s priority date.” Reply 26–27. Finally, Petitioner contends that the reference in Mason to C12.18 is sufficient to show that C12.18 was publically accessible. *Id.* at 3.

For the reasons discussed below, upon weighing the evidence regarding the public accessibility of C12.18 including the date printed on the document, we are persuaded that Petitioner has shown by a preponderance of the evidence that C12.18 was publically accessible on the relevant date.

We consider that C12.18 contained a statement limiting dissemination, as mentioned above. PO Resp. 65 (citing Ex. 1012, 3). Nevertheless, there is no evidence in the record that shows that C12.18 was only disseminated to a limited number of entities. *Cf. Cordis Corp. v. Boston Sci. Corp.*, 561 F.3d 1319, 1333–34 (Fed. Cir. 2009) (“We have held that where a distribution is made to a limited number of entities, a binding

agreement of confidentiality may defeat a finding of public accessibility.) (internal citations omitted). Thus, this fact weighs slightly against finding C12.18 was publically accessible.

The Board has previously observed that IEEE, a publisher of scientific articles is “well-known, reputable compiler and publisher of scientific and technical publications, and we take Official Notice that members in the scientific and technical communities who both publish and engage in research rely on the information published on the copyright line of IEEE publications.” *Ericsson, Inc. v. Intellectual Ventures I LLC*, Case IPR2014-00527, slip op. at 11 (PTAB May 18, 2015) (Paper 41). Further, the Board has determined that “[a]llowing IPR petitioners to rely on the IEEE publication date in an IPR proceeding, which is an administrative proceeding designed and intended to afford expedited and efficient relief, serves the interests of justice.” *Id.* at 12.

Although ANSI is not identical to IEEE, a similar logic can apply here where ANSI has been described as (“a standards ‘clearinghouse’”). Reply 26; *see also Giora George Angres, Ltd. v. Tinny Beauty & Figure, Inc.*, 1997 WL 355479, at *7 (Fed. Cir. June 26, 1997) (unpublished) (finding “no reason to suspect that [a reference published by an established publisher] was not publicly available, including to one skilled in the art” when “no evidence was presented that it was not”) (citing *Hall*, 781 F.2d at 899). Unrebutted testimony in the record indicated that (1) the ANSI and NEMA “well-known preeminent standards bodies for well-accepted industry standards” (2) “standards from ANSI and NEMA were readily available to a POSITA, and could have easily been found using resources such as IHS, which is a global standards clearinghouse that has been around for decades

(see Ex. 1081), and ANSI’s catalog, as well as by employing other traditional research aids such as libraries and online search engines.” Ex. 1076 ¶¶ 70–71; *Voter Verified, Inc. v. Premier Election Sols., Inc.*, 698 F.3d 1374, 1380–81 (Fed. Cir. 2012); see also *GoPro, Inc. v. Contour IP Holding LLC*, 908 F.3d 690, 693–95 (Fed. Cir. 2018) (“[I]nterested members of the relevant public could obtain the information if they wanted to.”). This un rebutted testimony alone may not be sufficient to show public accessibility but it weighs in favor of such a determination.^{10, 11}

Mason, which the parties do not dispute was publically available prior to the critical date, cites to and advises members of the interested public of

¹⁰ In its Sur-Reply, Patent Owner asserts “Petitioner continues to raise new arguments and evidence not presented in the Petition . . . [and such] late evidence and arguments should be disregarded as untimely. Sur-Reply 27. We are not convinced by this argument, “[w]hile the petitioner must submit evidence sufficient to meet the reasonable likelihood standard, some limited opportunities exist for the petitioner to present new evidence later, including: . . . in a reply to the patent owner response” *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 14 (PTAB Dec. 20, 2019) (precedential) (citing 37 C.F.R. §§ 42.108(c), 42.23, 42.123).

¹¹ Patent Owner also argues because Petitioner’s only support for the public accessibility of C12.18 in the Petition is the date April 8, 1996 that the document was approved by ANSI, and Petitioner’s apparent violation of the Board’s word limit for Petitions, we should find Petitioner’s evidence presented in the Petitioner’s Reply to the Patent Owner Preliminary Response (Paper 12) as “problematic.” PO Resp. 68. Nevertheless, Patent Owner did not move to strike that Reply, nor does Patent Owner explicitly request that we disregard this evidence in that Reply. We do not revisit the Institution Decision here, nor do we determine that the evidence and argument in the Reply is “new” such that it should be disregarded. Nevertheless, we rely on Petitioner’s evidence in its Reply to the Patent Owner Response not its reply to the Preliminary Response

the existence and usefulness of C12.18. Ex. 1004, 9:35–41, 53–64; Reply 27 (citing. Ex. 1004, 9:40). Petitioner also asserts “California’s Public Utilities Commission required compliance with C12.18 by April 16, 1999. Reply 27. Patent Owner argues that “[t]here is no evidence that the version of C12.18 cited by Mason is the same version cited by Petitioner.” PO Resp. 68 (emphasis omitted). Petitioner points out that the relevant aspects of C12.18 relied on in Mason appear in the version of C12.18 in the record and the fact that C12.18 is a standard supports Petitioner’s contention. Pet. 27–28. Additionally, Patent Owner has not introduced any evidence to suggest that Mason is referring to a different version of C12.18. PO Resp. 68.

Patent Owner also argues “a citation in Mason does not resolve whether C12.18 was ‘disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.’” *Id.* Nevertheless, Petitioner relies on the assertion that ANSI is a well-known standards body that publishes a catalog of its standard and its assertion that California Public Utilities Commission required compliance with the standard. *See* Ex. 1076 ¶¶ 70–71; Reply 27.

Based on the discussion above, we are persuaded that Petitioner has presented sufficient evidence and argument that C12.18 is a printed publication.

D. Claim Construction

In an *inter partes* review, we interpret claims in the same manner used in a civil action under 35 U.S.C. § 282(b). *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,340, 51,358

(Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2019)).

1. “*format a message*”

All challenged claims recite a limitation of “format a message.” Patent Owner does not formally propose a construction for the term and Petitioner proposes a construction only in its Reply, however, the parties disagree about how the term “format” should be applied to the prior art, essentially construing the term.

Patent Owner argues, *inter alia*, “[b]ecause the receiver address is *set* before reaching a meter and is not otherwise altered by the repeating meters (which Petitioner mapped to the claimed ‘wireless communication device’), Mason also does not disclose a controller ‘to format a message comprising a receiver address.’” PO Resp. 13 (emphasis added). Thus, Patent Owner at least suggests that altering the message by “setting” a receiver address would be formatting. Patent Owner does not explain, however, what “setting” means. In its reply, Petitioner contends Patent Owner’s “argument is inconsistent with the plain meaning of the term ‘format’—‘to apply a format.’” Reply 1. Petitioner goes on to state “the ’708 discloses encoding packets using the Manchester format, which describes a type of ‘formatting’ that occurs each time a transceiver sends a message. ’708 11:3-6 (data is ‘encoded in the Manchester format’).” Reply 2 (emphasis omitted).

Petitioner’s contention raises the issue that the specification discusses formatting in the context of “concatenating” or altering the fields or data structure of a message (Ex. 1001, 7:7–15 (“configured to format (e.g., concatenate) both data portions”) (cited in the Reply at 2), *and* in the context of setting the communication protocol by which the message will be

transmitted (Ex. 1001, 11:3–6 (“All the data can be encoded in the Manchester format”)) (cited in the Reply at 2)). Petitioner does not directly address this issue in its briefing but at the hearing Petitioner explained that in addition to setting the communication protocol, Petitioner’s position was that

even formatting an individual portion of a packet also constitutes formatting Every time, in the context of the Mason reference, every time a packet is even repeated from one meter to another meter, there are data values that need to be changed and reformatting inside of this overall packet.

Tr. 11.

Patent Owner recognizes that issue in its Sur-Reply stating “Petitioner conflates the underlying message format with the distinct protocol used to transmit the message.” Sur-Reply 3. Thus, focusing on the underlying format, Patent Owner argues the challenged patent explains that “Additional Transceiver Re-Broadcasts do not change the message. The messages are simply received and re-broadcast.” (’708 patent at Fig. 9).” *Id.* Patent Owner further argues that changing the value of data in a particular field within the message is also not formatting.¹² *Id.* at 5. At the hearing, Patent Owner attempted to clarify its position stating “what is clear from the spec and looking at how they talk about retransmission, that that [sic] is not

¹² Patent Owner argues that Petitioner’s statement that “the claims recite formatting the *message*—not a field within a message” is an admission fatal to Petitioner’s challenge. Sur-Reply 5 (citing Reply 11). We determine this statement by Petitioner was simply expressing its preference for one of its two alternative readings of the claim rather than an “admission” because Petitioner subsequently applies the term format to a change in fields in a message. Reply 11.

formatting the message because it says, ‘but physically that doesn’t change the message.’” Tr. 24.

We determine that Patent Owner reads the term “format” too narrowly without support for that narrowing. As mentioned above, the specification supports defining formatting as changing or setting the communication protocol and adjusting the fields within the message. The claim recites “configured to format a message comprising a receiver address.” As such, the word “format” modifies message not the receiver address. Nevertheless, the specification suggests that changing a field can be formatting. Ex. 1001, 7:7–15. Additionally, Patent Owner does not explain how the message is to be physically changed in order to meet Patent Owner’s understanding of “format.”

We do not formally adopt Petitioner’s proposed construction of “apply a format” because it does not resolve the issue before us. Here, we address the portions of the parties’ constructions necessary to resolve the dispute.

We agree with Petitioner’s suggestion and we adopt a construction that formatting is broad enough to encompass changing the content or data structure of fields within a message or changing the protocol by which it is sent. This understanding is consistent with the Specification which recites “receiv[ing] both a data signal from the data interface 420 and the transmitter identification 430 . . . [and] format[ing] (e.g., concatenate) both data portions into a composite information signal.” Ex. 1001, 7:5–9.

Additionally, we are not convinced that formatting must be more than changing the value of a particular field in a message.¹³

2. Preambles

Patent Owner argues that the preamble of the independent claims are limiting. PO Resp. 17. Specifically, Patent Owner argues the phrase “configured to communicate command and sensed data within the wireless communication systems,” recited in the preamble of claim 1, limits the body of the claim to a system in which “[e]ach transceiver can . . . (1) send command data to another transceiver; (2) receive command data from a transceiver; (3) send sensed data to another transceiver; and (4) receive

¹³ The scope of the claim term “format” was discussed in the Final Written Decision in IPR2016-01895, Paper 31. There, the Board stated that

Patent Owner relies on its declarant, Dr. Almeroth, who testified a packet format defines the syntax of a packet, not its content. *Id.* (citing Ex 2002 ¶¶ 167–171). Therefore, according to Patent Owner, “reformatting a message requires changing the syntax of the packet[, thus, c]hanging the content or value of certain fields within a message does not change the syntax or format of the packet.” *Id.* Patent Owner asserts that Shuey only changes the value of a field in the packet. PO Resp. 50.

Petitioner responds that “[r]eformatting a message encompasses **both** changing syntax **and** altering data in the message.” Reply 23 (citing Ex. 1027 ¶ 47). Petitioner contends “[t]he ’492 supports Petitioner’s reading of ‘formatting/reformatting,’ disclosing that formatting includes concatenating data (Ex. 1001, 6:65-7:2 (‘... format (e.g., concatenate)...’), 7:48-53, 10:11-16), i.e., altering the packet’s content. Ex. 1027 ¶47.13.” We agree with Petitioner. Petitioner’s contention is supported by the Specification as opposed to Patent Owner’s contention which is supported only by its declarant.

IPR2016-01895 Final Dec. 57–58 (in this record as Ex. 1016) (footnote omitted).

sensed data from a transceiver . . . [i.e.,] multiple paths at its disposal for sending and receiving messages between each integrated transceiver and each local gateway.” *Id.* at 23. In other words, Patent Owner argues the preamble limits the claim to bidirectional multipath communication of both command and sensed data between each integrated transceiver and each local gateway.¹⁴ We determine that the preambles are not limiting and, if they were limiting, we would determine that they do not limit the claim in the way Patent Owner suggests.

In support of its argument, Patent Owner argues the preamble “provides antecedent basis for the ‘another wireless communication device’ recited later in the body of the claim” and argues “being ‘configured to communicate command and sensed data’ is not merely an intended use, but instead is an important characteristic of the claimed invention that distinguishes it from the asserted references. *Id.* at 17–18 (internal citation omitted).

Petitioner, on the other hand, contends that the preambles are not limiting because the full preamble phrase, “for use in a wireless communication system configured to communicate command and sensed data within the wireless communication systems,” is an intended use, because the claim body recites a “structurally complete invention,” and because Patent Owner conceded in a related ITC proceeding that the preamble is not limiting. Reply 3–4. We are persuaded by Petitioner’s contention in this regard.

¹⁴ Although Patent Owner does not specifically use the term “bidirectional multipath communication,” we use it here to succinctly describe their position on claim construction.

In general, a preamble limits the invention if it recites essential structure or steps, or if it is “‘necessary to give life, meaning, and vitality’ to the claim.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (citing *Pitney Bowes Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999)). A preamble, however, is not limiting where the claim body defines a structurally complete invention and the preamble only states a purpose or intended use for the invention. *Id.*

The body of independent claim 1 recites a wireless communication device that comprises a “controller” configured to “format a message comprising . . . a command code . . . [and] a data value,” and to “receive” a message including a “command code” from “another wireless communication device.” Reply 3–4. Thus, command data and other data values are specifically and structurally recited in the body of the claim. The body of claim 1 recites a structurally complete invention. Accordingly, we determine that the preamble of claim 1 does not recite any essential structure not already recited in the bodies of these claims.

Additionally, the phrase “[a] wireless communication device for use in a wireless communication system configured to communicate command and sensed data within the wireless communication systems,” indicates that the wireless communication *system* is *configured to communicate*, not that the wireless communication *device* is so configured, because a modifier (in this case “configured”) in a sentence generally modifies the word that comes closest to it.

Patent Owner suggests the phrase “configured to communicate command and sensed data within the wireless communication systems” is a “different portion” of the preamble. PO Resp. 18 n.1; *see Bell Commc’ns*

Research, Inc. v. Vitalink Commc'ns Corp., 55 F.3d 615, 621 (Fed. Cir. 1995) (holding a portion of the preamble can be limiting on the claimed invention). We determine that, although a portion of a preamble can be limiting, here, the portion to which Patent Owner points is not separate but is a part of the “use” indicated for the system.

As to antecedent basis, again the preamble phrase does not refer to the configuration of the wireless device but rather the configuration of a “wireless communication system” within wireless communication systems. Thus, the only structural language in the preamble that could provide antecedent basis for “another wireless communication device” is simply the recitation of “wireless communication device.” The fact that “wireless communication device” may provide antecedent basis for “another wireless communication device” does not mean that the rest of the preamble, which describes an intended use, is limiting. *See Cochlear Bone Anchored Sols. AB v. Oticon Med. AB*, 958 F.3d 1348, 1355 (Fed. Cir. 2020).

Additionally, if a preamble appears to contain an “antecedent basis” for a term mentioned in the body of a claim, that is no guarantee that the preamble is limiting. The preamble language must still supply some additional, vital information that is missing from the body of the claim for that particular guideline to apply. *See, e.g., TomTom, Inc. v. Adolph*, 790 F.3d 1315, 1322–24 (Fed. Cir. 2015) (ruling that certain preamble terms were not limiting because these terms were merely duplicative of the terms in the body of the claim, even though the preamble did provide an antecedent basis for another term in the body of the claim) (citations omitted); *see also Am. Med. Sys., Inc. v. Biolitec, Inc.*, 618 F.3d 1354, 1359 (Fed. Cir. 2010) (“We have held that the preamble has no separate limiting

effect if, for example, ‘the preamble merely gives a descriptive name to the set of limitations in the body of the claim that completely set forth the invention.’” (quoting *IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422, 1434–35 (Fed. Cir. 2000))).

Additionally, the use of the indefinite adjective “another” does not suggest that it is the same wireless communication device in the preamble or that it has the same properties as the device in the preamble (or the device in the body of the claim). The word “another” may simply suggest that it is a different wireless communication device than the one described earlier. The Patent Owner could have said “another one of said (or the)” wireless communication device using a definite article rather than “another” which is analogous to the indefinite article “a.” *Predicate Logic, Inc. v. Distributive Software, Inc.*, 544 F.3d 1298, 1305 (Fed. Cir. 2008) (finding another does not require antecedent basis – “the ‘comparing’ step does not compare data sets linked to ‘an instantiated index’ with data sets linked to ‘another instantiated index’; it compares data sets linked to ‘one of said instantiated indexes’ with data sets linked to ‘another of said instantiated indexes.’ The ‘said instantiated indexes’ must be instantiated indexes with an antecedent basis elsewhere in the claim.”).

Patent Owner also argues that “communicating command and sensed data,” as interpreted by Patent Owner is an “important” aspect of the invention which reinforces it being considered a limitation of the claim. PO Resp. 18 (citing *Poly-America, L.P. v. GSE Lining Tech., Inc.*, 383 F.3d 1303, 1310 (Fed. Cir. 2004) (“*Poly-America I*) and *Proveris Sci. Corp. v. Innovasystems, Inc.*, 739 F.3d 1367, 1373 (Fed. Cir. 2014))).

As an initial matter, we note that *Poly-America I* relied on the fact that, in that case “[t]he specification [was] replete with references to the invention as a ‘blown-film’ liner, including the title of the patent itself and the ‘Summary of the Invention’ . . . [and it was] used repeatedly to describe the preferred embodiments.” *Poly America, L.P.*, 383 F.3d at 1310. Additionally, *Proveris* relies on repeated recitation of the phrase or versions of the phrase “sequential set of images of a spray plume” from the preamble in the specification. *Proveris Sci. Corp.*, 739 F.3d at 1373. Here, Patent Owner does not point to repeated recitation of “communication of command and sensed data,” rather as explained below, Patent Owner relies on one figure in the patent and one statement in the specification to derive the meaning it assigns to the preamble. Thus, we do not determine that this is an “important” aspect of the invention that reinforces it being considered a limitation of the claim as in the *Poly-America I* and *Proveris* cases.

Patent Owner argues based on Figure 2 of the ’708 patent and testimony of its declarant that “communicate” in the preamble means bidirectional multipath communication of both command and sensed data. *See* PO Resp. 19–23 (citing Ex. 1001, Fig. 2; Ex. 2004 ¶¶ 37–40). Patent Owner’s two annotated versions of Figure 2 outlining its position are reproduced below. PO Resp. 21–22.

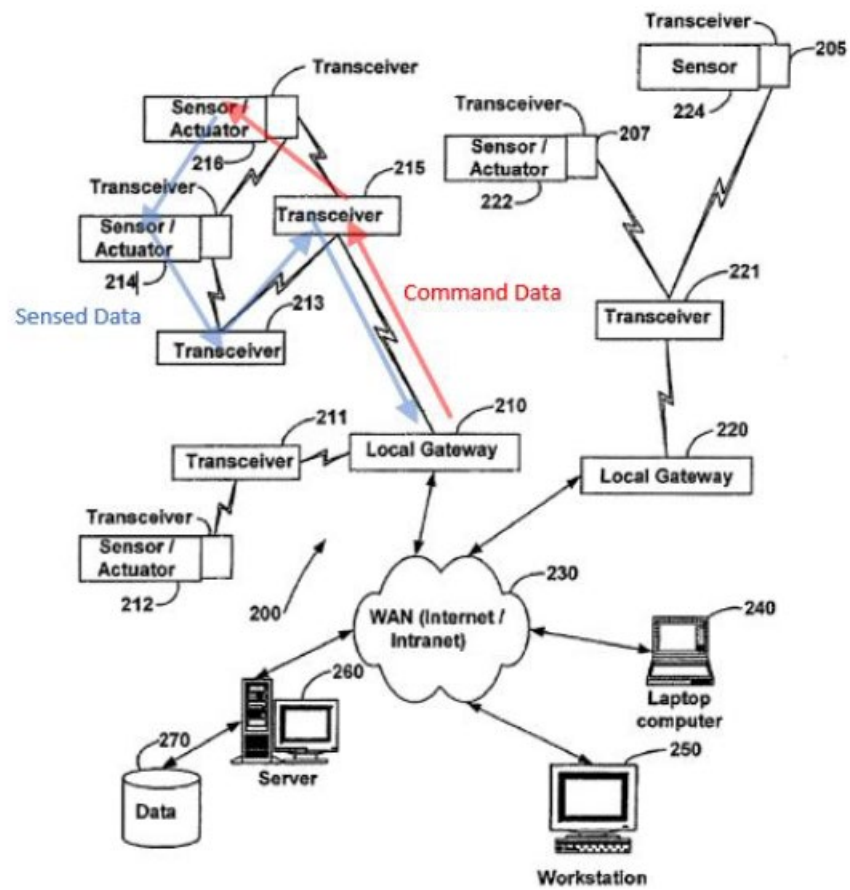


FIG. 2

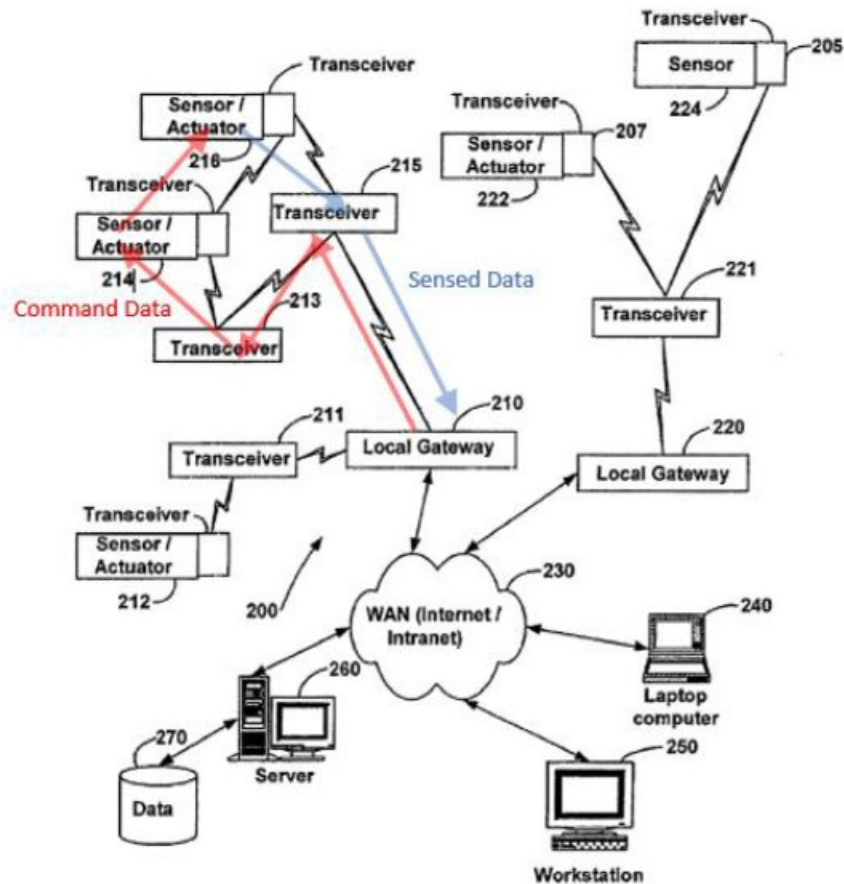


FIG. 2

Patent Owner's two annotated version of Figure 2 are reproduced above. First annotated Figure 2, above, shows Sensor/Actuators 214 and 216 connected to each other and individually connected to Transceivers 213 and 215, respectively, by a symbol representing wireless data transfer, the Transceivers 213 and 215 are connected to each other by that symbol, and with the Transceiver 215 connected by a Local Gateway 210 by that symbol. Additionally, a red arrow representing command data goes from Local Gateway 210 through Transceiver 215 to Sensor/Actuator 216 and a blue arrow representing sensed data goes from Sensor/Actuator 216 to Sensor/Actuator 214 to Transceiver 213 Transceiver 215 and then to Local Gateway 210. The second annotated version of Figure 2 above is the same

as the first except the red arrows and blue arrows are interchanged and reversed. Patent Owner argues this figure shows bidirectional and multipath communication from Sensor 216 to Local Gateway 210. *Id.* at 22–23.

Patent Owner argues that “[t]he importance of the ability to communicate both command and sensed data [in the way Patent Owner describes] is evident throughout the ’708 patent including Figure 2.” PO Resp. 19. Patent Owner contrasts Figure 2 with Figure 1 (prior art), which shows sensors/actuators with a single path to the controller and could only receive command data and send sensed data. Patent Owner’s annotated Figure 1 outlining its position is reproduced below. PO Resp. 24.

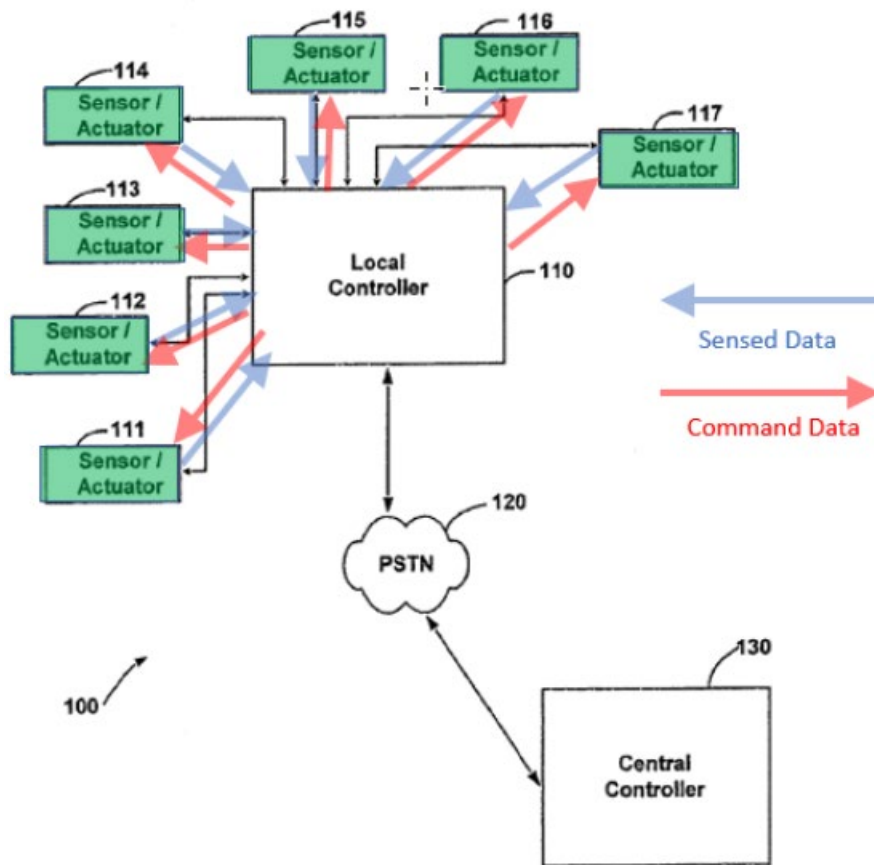


FIG. 1
(PRIOR ART)

Patent Owner's annotated version of Figure 1 is reproduced above. Annotated Figure 1, above, shows Sensor/Actuators 111–117 in green connected to Local Controller 110 with red arrows representing command data pointing from the local Controller 110 to the Sensor/Actuators 111–117 and a blue arrow representing sensed data pointing from the Sensor/Actuators 111–117 to the Local Controller. The specification states “prior art control systems [such as shown in Figure 1] often are susceptible to a single point of failure if the local controller 110 goes out of service.” Ex. 1001, 2:30–32. Patent Owner argues this figure shows unidirectional

and single path communication from Sensor/Actuators 111–117 to Local Controller 110. *Id.* at 24–25.

In sum, Patent Owner contends that the language “configured to communicate command and sensed data within the wireless communication system” imports a limitation of bidirectional multipath communication of command and sensed data to avoid a single point of failure problem in the prior art. We determine even if the preamble were limiting in some way, there is no support for importing “bidirectional multipath communication” into the claims.

Although the specification may have *an* embodiment or *all* embodiments allowing bidirectional communication of both command and sensed data, Patent Owner did not use the word “bidirectional multipath communication” in its claims and instead chose the broader term “communication.” *See In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1369 (Fed. Cir. 2004) (“We have cautioned against reading limitations into a claim from the preferred embodiment described in the specification, even if it is the only embodiment described, absent clear disclaimer in the specification.”). The fact that a limitation in the specification may define over the prior art does not justify importing that limitation into the claims unless a term is expressly defined such that the Patentee becomes his own lexicographer or there is an express disavowal of that claim scope. *See GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1308–9 (Fed. Cir. 2014).

There is no evidence of an express definition here. As to disavowal, the Federal Circuit has explained that the standard for disavowal is particularly exacting:

Mere criticism of a particular embodiment encompassed in the plain meaning of a claim term is not sufficient to rise to the level of clear disavowal. *Epistar Corp. v. Int'l Trade Comm'n*, 566 F.3d 1321, 1335 (Fed.Cir.2009) (holding that even a direct criticism of a particular technique did not rise to the level of clear disavowal). In *Spine Solutions, Inc. v. Medtronic Sofamor Danek USA, Inc.*, we explained that even where a particular structure makes it “particularly difficult” to obtain certain benefits of the claimed invention, this does not rise to the level of disavowal of the structure. 620 F.3d 1305, 1315 (Fed.Cir.2010). It is likewise not enough that the only embodiments, or all of the embodiments, contain a particular limitation. We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that. To constitute disclaimer, there must be a clear and unmistakable disclaimer.

Thorner v. Sony Computer Entm't Am. LLC, 669 F.3d 1362, 1366–67 (Fed. Cir. 2012).

The statement in the specification that “prior art control systems often are susceptible to a single point of failure” is not a sufficiently express disavowal of unidirectional single-path communication. Although, “[an inventor may also disavow claim scope] by distinguishing the claimed invention over the prior art.” ” *Techtronic Indus. Co. v. Int'l Trade Comm'n*, 944 F.3d 901, 907 (Fed. Cir. 2019) (quoting *Ekchian v. Home Depot, Inc.*, 104 F.3d 1299, 1304 (Fed. Cir. 1997)). The disavowal generally must be express. *Ekchian*, 104 F.3d at 1304 (finding no disavowal because “[the patent owner] did refer generally to the benefits of using a solid insulator instead of a liquid insulator as a dielectric. However, [the patent owner] did not characterize the specific liquid used in the prior art device . . .). Here, Petitioner does not sufficiently show an express disavowal, rather simply a criticism of the prior art.

Nevertheless, disavowal can be found implicitly. “[W]hen the scope of the invention is clearly stated in the specification, and is described as the advantage and distinction of the invention, it is not necessary to disavow explicitly a different scope.” *On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1340 (Fed. Cir. 2006). “[A]n inventor may [also] disavow claims lacking a particular feature when the specification describes ‘the present invention’ as having that feature.” *Poly-America, L.P. v. API Industries, Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016).

Here the statement relied on by the Patent Owner does not assert that the “present invention” is characterized by “bidirectional multipath communication,” nor does it clearly describe the feature of the invention that the prior art is lacking. Although Patent Owner argues “[t]he importance of the ability to communicate both command and sensed data is evident throughout the ’708 patent,” Patent Owner cites only to Figure 2 and its declarant for the proposition that “bidirectional multipath communication” is the feature to which the claims are being limited. PO Resp. 19–23; Sur-Reply 9–11. Patent Owner has not shown that the criticism of “single point of failure” is tied to a clearly expressed inventive feature of “bidirectional multipath communication.”

Petitioner, for its part, shows that Figure 2 of the specification of the ’708 patent may be read to show devices that have a single point of failure. Reply 4. Patent Owner response that

[t]here is always the possibility that wireless devices will not be within communication range of one another or that there will not be enough devices to form redundant paths in all instances . . . [b]ut these facts do not alter that the claimed technology enables networks to minimize or avoid the prior art single-point-of-failure problems.

Sur-Reply 10–11. Nevertheless, Patent Owner’s assertion that single point of failure problems should be “minimized” does not suggest the clear disavowal required by the law. Thus, we do not limit the plain meaning of “communication” to bidirectional multipath communication of command and sense data.

Accordingly, Patent Owner has not shown that “configured to communicate command and sensed data” means bidirectional multipath communication of command and sense data, nor has Patent Owner shown that bidirectional multipath communication is an important aspect of the invention such that it limits the claim.

Patent Owner also argues that the preambles of claims 11, 16, and 22 are limiting. PO Resp. 49, 54, 61. Claim 11 recites “[a] method of communicating command and sensed data between remote wireless devices” with steps that do not require bidirectional communications over multiple paths. Patent Owner refers to its claim 1 argument that bidirectional multipath communication was an “important” distinction over the prior art. PO Resp. 49. Patent Owner also admits that the body of the claim provided structure for command data. *Id.* As discussed above, this tends to show that the body recites a structurally complete invention. Thus, we are not convinced by Patent Owner’s argument and do not determine that the preamble of claim 11 is limiting.

Claim 16’s preamble recites “[i]n a communication system to communicate command and sensed data between remote devices.” Patent Owner refers to its claim 1 argument that bidirectional multipath communication was an “important” distinction over the prior art. PO Resp. 54. Patent Owner also suggests that the preamble provides antecedent basis

for the terms “first wireless remote device” and “second wireless remote device” in the body of the claim; nevertheless, the body of the claim uses the indefinite article “a” to introduce “a first wireless remote device,” “a second wireless remote device,” and “at least one *other* remote device” in the body of the claim which suggests those terms do not need antecedent basis. *Id.* Thus, we are not convinced by Patent Owner’s argument and do not determine that the preamble of claim 16 is limiting.

Claim 22 recites a “wireless communication device for use in a communication system to communicate commands and sensed data between remote wireless communication devices.” Patent Owner refers to its claim 1 argument that bidirectional multipath communication was an “important” distinction over the prior art. PO Resp. 61. Patent Owner also suggests that the preamble phrase “remote wireless communication devices” provides antecedent basis for the terms “remote wireless device[s]” in the body of the claim; nevertheless, the body of the claim uses the indefinite adjectives “one” and “other” to introduce “at least one remote wireless device” and “at least one *other* remote wireless device” in the body of the claim which suggest those terms do not need antecedent basis. *Id.* (emphasis added). Thus, we are not convinced by Patent Owner’s argument and do not determine that the preamble of claim 22 is limiting.

We determine that it is not necessary to provide an express interpretation of any other term of the claims. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*

Matal, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs.* in the context of an inter partes review).

E. Obviousness of Claims over Mason, Shuey, and C12.18

Petitioner contends that claims 1, 2, 5–9, 11–13, 15–20, 22, and 24 are unpatentable under 35 U.S.C. § 103(a) as obvious over Mason, Shuey, and C12.18. Pet. 6. To support its contentions, Petitioner provides explanations as to how the prior art allegedly teaches each claim limitation. *Id.* at 28–45, 47–65–87, 90–94. For convenience, all references cited in the grounds of the Petition are summarized below.

1. Mason (Ex. 1004)

Mason discloses an automatic meter reading (AMR) system that includes a plurality of utility meters 12 (for metering electricity, gas or water). Ex. 1004, 5:32–34. Each of the meters 12 can send or receive RF communications from a node 18. *Id.* at 5:35–41. The meters 12 can also send or receive RF communications directly from another meter 12 by operating as a repeater. *Id.* at 6:27–35.

2. Shuey (Ex. 1005)

Shuey discloses an AMR system that includes a plurality of meters 12, in which each of the meters 12 can send or receive RF communications from a node 18, and the meters 12 can send or receive RF communications directly from another meter 12 by operating as a repeater. Ex. 1005, Fig. 5, 5:2–13. As part of that operation as a repeater, a meter can receive an outbound request from a node 18 and duplicate it, except that the meter alters the repeater field. *Id.* at 5:36–41, 60–65, Fig. 6 (step S3).

3. *C12.18 (Ex. 1012)*

C12.18 is an open platform communications protocol for two-way communication with an electronic metering device. C12.18 discloses, for example, that a write request can be used to transfer data to a target device. Ex. 1012, 7–8. The write request includes, among other things, a command code specifying that a write request is to be performed, and data that is to be written to the target device. *Id.* The data is depicted as being a variable number of bytes with a length that is defined in the write request. *Id.* at 2, 8.

4. *EIA-709.1 (Ex. 1014)*

EIA-709.1 describes a protocol “for communication in control networks.” Ex. 1014, 7. EIA 709.1 teaches using different address formats for broadcast (format 0), multicast (1/2b), and unicast (2a/3)) messages. *Id.* at 15.

5. *Ehlers (Ex. 1011)*

Ehlers teaches how to structure software on a first microcomputer operating as a gateway between two networks—e.g., an external network and a LAN. Ex. 1011, 8:10–17.

6. *Lyons (Ex. 1010)*

Lyons teaches a network of wireless data acquisition devices that periodically “ping” other devices to verify that they are “functioning properly.” Ex. 1010, 36:65–37:21, 37:44–48.

7. *Lee (Ex. 1009)*

Lee discloses that CEBUS packets can include multiple commands in a packet along with separators. Ex. 1009, Fig. 4:34–49, Fig. 7A.

8. *Ardalan (Ex. 1008)*

Ardalan discloses assigning individual and broadcast TCP/IP addresses to each meter on a CEBUS LAN connected, through a gateway, to a TCP/IP wide area network (“WAN”). Ex. 1008, 1:29–38, 2:34–67. Each meter processes TCP/IP information using TCP/IP interface software. *Id.* at 3:14–18, 3:28–31.

9. Analysis

a. Claim 1

i. “*A wireless communication device . . .*”

Petitioner contends that Mason teaches a “wireless communication device for use in a wireless communication system configured to communicate command and sensed data within the wireless communication systems, the wireless communication device,” as recited in the preamble claim 1. Pet. 28–29; Ex. 1004, 1:23–25, 5:32–41, 6:8–13, 10:43–47, 11:29–32, Fig. 1; Ex. 1003 ¶¶ 113–16.^{15,16}

As explained above, we determine that the preamble is not limiting but we rely on Petitioner’s contentions cited above as a predicate of the

¹⁵ A similar limitation was found to be met by the same references in the Final Written Decision in IPR2016-01895. IPR2016-01895, Paper 31 at 40 (PTAB Mar. 21, 2018). We have considered the similarity of other limitations in this case to limitations in IPR2016-01895, but we make an independent judgement on the merits here. *See* PO Resp. 39–40. Additionally, for brevity we will not refer to any other limitation’s similarity to limitations in IPR2016-01895 outside of this footnote.

¹⁶ We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded Petitioner sufficiently establishes unpatentability by a preponderance of the evidence, as cited here and throughout this Decision, unless we specifically state that we do not rely on, or are not persuaded by a particular contention.

contentions below, so they are listed here. Patent Owner's arguments regarding the preamble are not commensurate with the scope of the invention as properly construed. PO Resp. 26–28.

ii. “a transceiver configured to send and receive wireless communications”

Petitioner establishes by a preponderance of the evidence that Mason teaches “a transceiver configured to send and receive wireless communications,” as recited in claim 1. Pet. 29–30; Ex. 1004, 5:35–56, 16:57–30; Ex. 1003 ¶¶ 117–18. Patent Owner does not make arguments specific to this claim limitation.

iii. “a controller configured . . .”

Petitioner establishes by a preponderance of the evidence that the combination of Mason and Shuey teaches “a controller configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message, the controller further configured to format a message comprising a receiver address comprising an address of at least one remote wireless device,” as recited in claim 1. Pet. 30–33; Ex. 1004, 4:20–35, 42–57, 5:17–22, 59–64, 6:1–35, 9:37–40, 13:13–15:20, 16:57–65, Figs. 1–5, Ex. 1003 ¶¶ 119–24. For example, Petitioner contends that Mason teaches that each meter 12 provides a preformatted message that employs the CEBUS RF protocol and the ANSI C12.18 protocol. Pet. 30–31 (citing Ex. 1004, 5:59–64, 6:1–35).

Petitioner emphasizes that Shuey shows the “remote” part of this limitation. For example, Shuey teaches that the meters are “remote” because meters are typically spaced up to 1,000 feet from the node, and using repeaters advantageously expands this distance to over 1,000 feet. Pet. 32 (citing Ex. 1005, 6:20–40).

Petitioner also contends that Shuey provides implementation details for the “controller” part of this limitation. Pet. 32–33 (citing Ex. 1005, 2:11–18, 4:20–35, 42–57, 5:17–22, Fig. 4; Ex. 1003 ¶¶ 123–24.

Petitioner articulates sufficient reasons for combining Mason and Shuey. Pet. 19. For example, Petitioner contends that a

POSITA would have been motivated to apply Shuey’s teachings of “utility meters having CEBUS capabilities” that allow “any meter in the network to operate as a repeater” in implementing Mason. Mason, 6:15-26 (citing Shuey’s application (08/870,640) for further information); Madisetti, ¶91. Kenneth Shuey is a common inventor to both Mason and Shuey. Mason’s meters are not “described in detail,” and Mason “does not require any specific design for the meters.” Mason, 5:64-67.

Pet. 19.

Patent Owner argues that

Petitioner . . . failed to identify claim 1’s “controller” with particularity [and failed to properly allege obviousness for each claim limitation]. Specifically, independent claim 1 recites “a controller” configured to do at least six things: (1) “to communicate with at least one other remote wireless device via the transceiver with a preformatted message”; (2) “to format a message comprising a receiver address comprising an address of at least one remote wireless device”; (3) “to format a message comprising . . . a command indicator comprising a command code”; (4) “to format a message comprising . . . a data value comprising a message”; (5) “to receive a preformatted message from another wireless communication device”; and (6) “based on a command code provided in the preformatted message, implement a certain function corresponding to the command code.”

Prelim. Resp. 10. Specifically, Patent Owner argues Petitioner contends that the “‘controller’ element is alternatively taught by (1) Mason’s metering board, (2) Mason’s CEBUS RF board, (3) the combination of Mason’s

metering board and CEBUS RF board, (4) Mason's metering board combined with components from Shuey, (5) Mason's CEBUS RF board combined with components from Shuey, (6) the combination of Mason's metering board and CEBUS RF board, combined with components from Shuey." PO Resp. 31 (emphasis omitted).

As an initial matter, Patent Owner makes broad statements referring to all limitations across many claim limitations which burdens the Board with identifying the specific instances of alleged failures by Petitioner. The Board cannot efficaciously provide specific responses to generalized allegations, thus while we address all of the broad arguments here, we address the issues raised by Patent Owner in the context of each of the challenged claims and limitations thereof below.

As to the "six possible claimed 'controllers,'" as explained in detail below, we determine that Petitioner points to structure in Mason and similar structure in Shuey. Patent Owner also suggests that Petitioner was required to explain how and why one of ordinary skill in the art would use two structures in Shuey and Mason to work together or individually to meet the claim limitations. PO Resp. 28–40, 50–53, 58–61. Patent Owner argues "Petitioner does not provide any discussion of how one of ordinary skill would modify *Mason* in view of *Shuey*, why one of ordinary skill would modify *Mason* in the first place, and whether one of ordinary skill would have had a reasonable expectation of success in modifying *Mason*." *Id.* at 33. Additionally, Patent Owner also appears to be concerned with Petitioner's use of the phrase "individually and collectively." *Id.* at 37.

The use of the language "'individually and collectively'" does not make the Petition vague per se, so long as the Petition explains how each

structure meets the claim limitations. Petitioner’s explanations and the citations to Mason and Shuey themselves present understandable configurations of a central processor and associated communications processors to which Petitioner provides citations that explain their operations and explain how and why one of ordinary skill would modify Mason in view of Shuey. *See* Pet. 32–44.

As to Patent Owner’s conclusory assertion of a lack of reasonable expectation of success due to Petitioner’s presentation of multiple alleged permutations of the controller in the Petition (PO Resp. 15), Mason specifically cites to Shuey as providing details for the operation of meters. *See* Ex. 1004, 6:15–26; *see also Papst Licensing GMBH & Co. KG v. Samsung Elecs. Am., Inc.*, 924 F.3d 1243, 1248 (Fed. Cir. 2019) (“there is no material issue before us about the motivation to combine the three prior-art sources—Aytac, SCSI, and admitted prior art [because] Aytac expressly refers to SCSI.”); *see also Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1372 (Fed. Cir. 2019) (finding the Board had sufficient evidence for a motivation to combine references where one reference “suggests that a wide variety of adaptive compression algorithms could be used and encourages a person having ordinary skill in the art to turn to ‘well known’ algorithms such as [the other reference’s]”).

Patent Owner makes several arguments that the Institution Decision does not “cure the Petition’s deficiencies.” PO Resp. 37.¹⁷ A Final Written Decision is not a rehearing of the Institution Decision but to the extent Patent Owner’s arguments are relevant, we address them below. Patent Owner asserts a description of Petitioner’s contentions in the Institution Decision is a “re-characterization of Petitioner’s argument . . . akin to the Board crafting a new ground of unpatentability, which is not permissible.” PO Resp. 37–38. We do not rely on any characterizations in the Institution Decision in this Final Decision.

The Petition guides the proceeding. *See Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1335–36 (Fed. Cir. 2020). Our reviewing court explains that “Congress chose to structure a process in which it’s the petitioner, ... who gets to define the contours of the proceeding,” and that “the statute envisions that a petitioner will seek an *inter partes* review of a particular kind—one guided by a petition describing each claim challenged and the ground on which the challenge to each claim is based.” *Id.* at 1335 (quoting *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018) (internal quotations omitted)). “Although the Board is not limited by the exact language of the petition, *see, e.g., Sirona Dental Sys. GmbH v. Institut Straumann AG*, 892 F.3d 1349, 1356 (Fed. Cir. 2018), “the Board does not

¹⁷ For example, Patent Owner also suggest the Board placed an undue burden on Patent Owner when it stated Patent Owner overlooked descriptions cited by Petitioner in the reference. *Id.* at 38. Patent Owner asserts “the burden is not on Patent Owner to look to “descriptions in the references” to prove Petitioner’s case.” *Id.* at 38–39. Nevertheless, we place the burden on Petitioner to prove claims unpatentable by a preponderance of the evidence.

‘enjoy[] a license to depart from the petition and institute a *different* inter partes review of his own design.’” *Id.* at 1336 (quoting *SAS*, 138 S. Ct. at 1356).

Patent Owner also argues, based on the Institution Decision, that we improperly accepted Petitioner reliance on “individually and collectively.” PO Resp. 38. Specifically, Patent Owner asserts Petitioner has failed to explain “why Petitioner alleges that combining Mason’s metering board and CEBUS RF board is necessary if each is individually sufficient to satisfy the claims (i.e., failing to identify the distinctions between the claims and the prior art, as required in *Graham v. John Deere Co.*, 383 U.S. 1 (1965)).” PO Resp. 31–32 (emphasis omitted). Patent Owner also states Petitioner fails to explain “what is missing from each of Mason’s alleged controllers that is somehow made up by combining them (again failing to identify distinctions between the claims and the prior art, as well as failing to explain how the prior art allegedly renders the claims obvious as required by *ActiveVideo Networks v. Verizon*).” *Id.* (emphasis omitted). Patent Owner also argues Petitioner explains neither “how Shuey’s components relate to or interoperate with Mason’s components,” nor “whether Shuey’s components are used in addition to Mason’s components or replace them.” PO Resp. 32 (emphasis omitted). We are not convinced by these arguments.

Petitioner is identifying a claimed component, a controller, which performs standard communication functions such as formatting and receiving messages. Mason itself states that “CEBUS RF module are not described in detail herein since such devices are well known in the networking and communications fields.” Ex. 1004, 5:44–56. Mason also states as to the meter containing the metering board, “such utility meters are

well known and therefore will not be described in detail here, particularly since the present invention does not require any specific design for the meters.” *Id.* at 5:64–67. Petitioner explains “Mason’s meters are not ‘described in detail,’ and Mason ‘does not require any specific design for the meters.’” Pet. 19 (citing Ex. 1004, 5:64–67).

Thus, as to deficiencies in Mason, the Petition suggests the deficiency made up for by Shuey is the level of detail in Mason’s explanations. Petitioner also states that Mason’s meters would use Shuey’s description of “using controllers, a radio, and inputs/outputs (*e.g.*, sensors and actuators for ‘service disconnect’ and ‘load control’) connected via a bus.” Pet. 19. Additionally, Petitioner explains that a person of ordinary skill in the art would “apply Shuey’s teachings of how to structure the ‘repeater addresses’ and codes in ‘RPT’ and ‘SPARE’ fields (*e.g.*, Shuey’s ‘Single’ and ‘Double Repeat’ teachings in the ‘Source Address’ field []) in implementing Mason’s CEBUS/C12.18 protocol.” *Id.* at 20. In a section titled “Motivation to Combine,” Petitioner address how and why Mason and Shuey would be combined and contends a motivation to “advantageously allow [Mason’s] meters to expand the RF network’s ‘coverage’” [by using Shuey’s teaching regarding repeaters]. Pet. 19–21.

Patent Owner also argues “Petitioner provides no explanation for how a general disclosure of two processors on one board [as in Shuey] would be implemented in Mason’s two boards, such that the combined system would meet each claim element.” PO Resp. 33 (*emphasis omitted*).

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.

In re Keller, 642 F.2d 413, 425 (CCPA 1981). “Combining the *teachings* of references does not involve an ability to combine their specific structures.” *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973). Additionally, the claims do not recite “boards.” Thus, we are not convinced by Patent Owner’s argument.

iv. formatting a message comprising a receiver address comprising . . .

Petitioner establishes by a preponderance of the evidence that Mason teaches that messages are formatted to comprise “a receiver address comprising an address of at least one remote wireless device,” as recited in claim 1. Pet. 33–34 (citing Ex. 1004, 3:2–17, 3:22–29, 3:39–45, 4:45–48, 6:45–55, 10:1–10, 10:35–40, 12:24–36, Fig. 1; Ex. 1003 ¶¶ 125–28). For example, Petitioner points to Mason’s CAL message which contains an address field. *Id.* Petitioner also relies on Shuey’s update of a repeat code to show that a message can be “formatted.” Pet. 34–35 (citing Ex. 1005, 6:52–7:3, 7:5–32, Fig. 5; Ex. 1003 ¶¶ 129–31). Petitioner also provides further citations in support of the “formatting” language in claim 1. Pet. 35–36.

Patent Owner again argues that Petitioner has not explained how the controller performs the formatting of a message complaining that Petitioner refers back to its discussion of the limitation to a controller. PO Resp. 34. We are not convinced by this argument.

Petitioner contends that Mason teaches a metering board and CEBUS RF board that communicate via a transceiver. Pet. 30. The metering board is an industry standard device that handles “metering function,” the CEBUS RF module is a well-known device that handles communication by the CEBUS Protocol. Pet. 30 (citing Ex. 1004, 5:59–64 (“such utility meters

[with metering boards and CEBUS boards] are well known”); 6:1–35 (“the inventive protocol employs the CEBUS RF protocol”). Thus, Mason generally describes a standard meter with board for metering and a board for implementing CEBUS protocol. Petitioner relies on the repeater function of Mason, which Mason discloses is described in Shuey. Shuey discloses that it has a control processor and a communication processor that are processors and connected through a bus to an RF transmitter through a bus. Pet. 33 (citing Ex. 1005, 2:11–18, 4:42–57, 4:20–35, 5:17–22).

Thus, both Mason and Shuey have a controller and a communications processor/board and Mason suggests one of ordinary skill look to Shuey for details. As to formatting, the Petition states the Mason uses a CEBUS board to format CEBUS/ANSI C12.18 packets. Pet. 34. The Petition shows that a meter can send a “CAL” message to another meter which would be in the CEBUS format. *Id.* As to how the message is formatted, the Petition shows how a RPT “01” code is replaced with a “00” before sending a message. Pet. 34–36.

To the extent that Patent Owner requests some higher level of detail regarding specifically how a communication processor would implement the messages, we determine that such detail is not required. *Cf., In re Fisher*, 427 F.2d 833, 839 (CCPA 1970) (indicating patents in the mechanical or electrical arts involve predictable factors compared to the more unpredictable chemical and biological arts); *cf. also Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384 (Fed. Cir. 1986) (“a patent need not teach, and preferably omits, what is well known in the art”). We are persuaded that Petitioner’s contentions are sufficient.

Patent Owner also argues that Petitioner's reliance on Figure 3 shows that Petitioner is relying on the "[RF] [N]ode/[C]ollector 18" rather than the meter. Specifically, Patent Owner relies on the statement in Figure 3 that formatting is "implemented by node after receiving TCP/IP request via WAN. PO Resp. 36 (citing Ex. 1004, Fig. 3). To the extent Figure 3 discloses implementing CEBus RF protocol at the node, Petitioner relies on the formatting done at the repeater not the node. Specifically, the Petition cites to Mason's disclosure that using the teaching of Shuey one can make the RF system adaptive to read hard to access meters within the network, by permitting any meter in the network to operate as a repeater. Pet. 71 (citing, *inter alia*, Ex. 1004, 6:23–26). Thus, we are not convinced by this argument by Patent Owner.

v. a command indicator comprising a command code

Petitioner contends that Mason teaches "a command indicator comprising a command code," as recited in claim 1. Pet. 36–40. Petitioner contends that Mason's CAL messages contain a control field that has a code for packet type. Pet. 36–38; Ex. 1004, 6:45–7:14, 10:14–23, 13:12–60; Ex. 1003 ¶¶ 132–35. Thus, we are persuaded that Petitioner's showing in Mason teaches "a command indicator comprising a command code." Petitioner also relies on similar codes in Shuey and C12.18. Pet. 38–40; Ex. 1003 ¶ 135.

As stated above, Petitioner articulates sufficient reasons for combining Mason and Shuey. Pet. 19. Additionally, Petitioner articulates sufficient reasons for combining Mason and C12.18. Pet. 21–23. For example, Petitioner contends that:

A [person of ordinary skill in the art] would have been [further] motivated to apply C12.18's teachings in implementing Mason because Mason teaches that the CAL message in the

information field “adhere[s] to” C12.18. Mason, 6:10-14, 9:37-47, 10:1-23, 10:42-11:15. A [person of ordinary skill in the art] would have looked to C12.18 for how to format, *e.g.*, “C12.18 application layer command” and “response” fields to include C12.18 “request” and “response” codes that Mason references, such as C12.18 “read request” using “30” and “3F” “request codes”

Pet. 21–23. Patent Owner does not make arguments specific to this claim limitation.

vi. a data value comprising a message

Petitioner establishes by a preponderance of the evidence that Mason teaches “a data value comprising a message,” as recited in claim 1. Pet. 40–42. For example, Petitioner relies on Mason’s information field to show a data value comprising a message. Pet. 40–41; Ex. 1004, 3:2–6, 6:45–54, 7:55–58, 9:37–10:13, 10:14–23, 12:43–45, 15:20–49; Ex. 1003 ¶¶ 138–39. Petitioner also relies on disclosures in C12.18. Pet. 41–42. Patent Owner does not make arguments specific to this claim limitation.

vii. the controller is configured to receive a preformatted message . . .

Petitioner establishes by a preponderance of the evidence that Mason, Shuey, and C12.18 teaches “the controller is configured to receive a preformatted message from another wireless communication device, and based on a command code provided in the preformatted message, implement a certain function corresponding to the command code,” as recited in claim 1. Pet. 42–45; Ex. 1004, 3:46–49, 4:45–47, 5:32–41, 59–64, 6:22–35, 6:8–13, 6:48–7:13, 9:37–40, 10:43–47, 11: 29–32, 42–43, 12:43–45, 13:13–15:20, 15:48–49; Ex. 1005, 7:5–12, 7:25–32; Ex. 1012, 6–8, 12; Ex. 1003 ¶¶ 144–51. For example, Petitioner relies on Mason’s receive commands

via RF from a node or a meter acting as a repeater formatted per CEBUS RF and C12.18 protocols. As to a command code, Petitioner also relies on disclosures described above in relation to command code in Mason, Shuey, and C12.18. Pet. 41–42. Patent Owner does not make arguments specific to this claim limitation.

Claim 2

Claim 2 depends from claim 1. Claim 2 recites “the transceiver comprises a unique transceiver address to distinguish the transceiver from other transceivers in the wireless communication system,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. *See* Ex. 1004, 10:42–46 (“read individual meters using the meter’s unique address”), 1:10–20, 2:65–3:2, 3:27–29, 3:39–45, 10:42–11:15; Pet. 45; Ex. 1003 ¶¶ 153–54. Patent Owner does not make arguments specific to this claim.

Claim 5

Claim 5 depends from claim 1. Claim 5 recites “the command code of the preformatted message [is] concatenated to provide a receiving device with multiple command codes, the device configured to perform one or more functions corresponding to the command code in the preformatted message,” which Petitioner sufficiently shows to be disclosed in Mason, Shuey, and C12.18 by a preponderance of the evidence. *See* Ex. 1004, 5:59–64, 6:45–7:14, 9:35–40, 10:14–23, 12:43–45, 13:20–30, 50–60, 15:28–37; Ex. 1005, 7:5–12, 7:25–28; Ex. 1012, 3–4, 7–8, 12; Pet. 47–49; Ex. 1003 ¶¶ 162–66. Patent Owner does not make arguments specific to this claim.

Claim 6

Claim 6 depends from claim 1. Claim 6 recites the device of claim 1 wherein “the receiver address is scalable,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence.¹⁸ *See* Ex. 1004, 10:52–64, 11:1–8, 15:62–63; Pet. 50–51; Ex. 1003 ¶¶ 169–71. Patent Owner does not make arguments specific to this claim.

Claim 7

Claim 7 depends from claim 1. Claim 7 recites “data value comprises a scalable message,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. *See* Ex. 1004, 13:13–15:20; Ex. 1012, 6–7; Pet. 51–52; Ex. 1003 ¶¶ 174–78. Patent Owner does not make arguments specific to this claim.

Claim 8

Claim 8 depends from claim 1. Claim 8 recites “the command code indicates a data request to the wireless communication device,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. *See* Ex. 1004, 6:8–13, 10:43–47, 16:45–47; Ex. 1012, 3–4, 6–7; Pet. 53–55; Ex. 1003 ¶¶ 179–84. Patent Owner does not make arguments specific to this claim.

Claim 9

Claim 9 depends from claim 1. Claim 9 recites “the command code indicates a change in settings of an actuator associated with the wireless

¹⁸ A similar, but different, limitation was at issue in the Federal Circuit appeal of IPR2016-01895. There, the pertinent claim limitation recites “a receiver address comprising a scalable address of at least one remote device.” *SIPCO, LLC v. Emerson Elec. Co.*, No. 18-1856 (Fed. Cir.).

communication device,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. *See* Ex. 1004, 2:11–21, 5:59–64, 16:40–44, 52–65, Fig. 2; Ex. 1012, 7–8; Pet. 55–57; Ex. 1003 ¶¶ 185–88. Patent Owner does not make arguments specific to this claim.

Claim 11

Independent claim 11 recites in part “determining a location from which the duplicate message originated.” Petitioner contends a person of ordinary skill in the art

would have found it at least obvious to determine the physical location from which a duplicate message originated because Mason teaches that it is important to minimize bandwidth consumption, and tracking locations of duplicate messages advantageously would allow the system to detect where devices (*e.g.*, repeating meters) are not properly spaced apart or are malfunctioning to allow repair of such devices.

Pet. 63 (citing Ex. 1004, 11:29–33; Ex. 1003 ¶¶ 220–21). We determine this is hindsight attorney argument that is not sufficiently explained and not sufficiently supported in Mason. *Estee Lauder Inc. v. L'Oreal, S.A.*, 129 F.3d 588, 595 (Fed. Cir. 1997); *see also Icon Health & Fitness, Inc. v. Straya, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) (“Attorney argument is not evidence.”); *Gemtron Corp. v. Saint-Gobain Corp.*, 572 F.3d 1371, 1380 (Fed. Cir. 2009) (“[U]nsworn attorney argument . . . is not evidence and cannot rebut . . . other admitted evidence”); *In re Huang*, 100 F.3d 135, 139–40 (Fed. Cir. 1996). For example, this motivation is conclusory and not fully explained or supported. The cited declaration testimony simply repeats the language in the Petition and does not establish a predicate for bandwidth, proper spacing, or malfunctioning devices. Ex. 1003 ¶¶ 220–21. The

citation in Mason simply suggests that a single command is sent to a group of meters but does not discuss bandwidth, proper spacing, or malfunctioning devices. Ex. 1004, 11:29–33. Petitioner does not explain this further in its Reply. Thus, we are not persuaded by this contention.

Claims 12, 13, and 15

Claims 12, 13, and 15 depend directly or indirectly from claim 11. As noted above, however, Petitioner has not shown by a preponderance of the evidence that claim 11 is obvious over Mason, Shuey, and C12.18. Therefore, Petitioner has not shown by a preponderance of the evidence that claims 12, 13, and 15 would have been obvious.

Claim 16

Independent claim 16 recites “a communication system to communicate command and sensed data between remote devices, the system comprising,” which Petitioner contends is disclosed in Mason. See discussion of preamble associated with claim 1; Pet. 66; Ex. 1003 ¶¶ 244–47.

As explained above, we determine that the preamble is not limiting but we rely on Petitioner’s contentions cited above as a predicate of the contentions below, so they are listed here. Patent Owner’s arguments regarding the preamble are not commensurate with the scope of the invention as properly construed. See PO Resp. 54.

Claim 16 further recites “a receiver associated with a first wireless remote device, the receiver configured to receive a data packet transmitted by a second wireless remote device,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. See discussion of claim 1; Ex. 1004, 4:45–47, 6:22–35, Fig. 1; Pet. 66–67; Ex. 1003

¶¶ 248–52. Patent Owner does not make arguments specific to this claim limitation.

Claim 16 further recites “the data packet comprising a receiver address of the first wireless remote device,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. *See* discussion of claim 1; Ex. 1004, 3:2–17, 39–45, 4:45–47, 6:45–54, 10:1–11, 35–40, 10:42–11:9, 28–33, 12:24–36, Fig. 1; Pet. 66–68; Ex. 1003

¶¶ 253–57. Patent Owner does not make arguments specific to this claim limitation.

Claim 16 further recites “a command indicator comprising a command code,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. *See* discussion of claim 1; Pet. 68; Ex. 1003 ¶¶ 258–60. Patent Owner does not make arguments specific to this claim limitation.

Claim 16 further recites “a data value comprising a message,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. *See* discussion of claim 1; Pet. 68; Ex. 1003 ¶¶ 261–63. Patent Owner does not make arguments specific to this claim limitation.

Claim 16 further recites “a controller associated with the first wireless remote device comprising a transceiver configured to send and receive wireless signals,” which Petitioner sufficiently shows to be disclosed in Mason and Shuey by a preponderance of the evidence. *See* discussion of claim 1; Ex. 1004, 5:35–41, 16:57–65, Fig. 2; Ex. 1005, 4:42–53; Pet. 69–70; Ex. 1003 ¶¶ 264–69. Patent Owner does not make arguments specific to this claim limitation.

Claim 16 further recites “the first wireless remote device configured to send a preformatted message comprising the receiver address, a command indicator, and the data value via the transceiver to at least one other remote device,” which Petitioner sufficiently shows to be disclosed in Mason and Shuey by a preponderance of the evidence. *See* discussion of claim 1; Ex. 1004, 2:54–3:2, 3:27–29, 4:45–47, 6:15–38, 10:55–11:9, 16:52–56, Fig. 1; Ex. 1005, 7:5–32, Fig. 5; Pet. 70–74; Ex. 1003 ¶¶ 269–75. Patent Owner does not make arguments specific to this claim limitation.

Claim 16 further recites “the controller is configured to implement a certain function corresponding to the command code in the data packet,” which Petitioner sufficiently shows to be disclosed in Mason, Shuey, and C12.18 by a preponderance of the evidence. *See* discussion of claim 1; Ex. 1012, 6–7; Pet. 74; Ex. 1003 ¶¶ 279–82.

Patent Owner makes similar arguments regarding Petitioner’s alleged reliance on multiple controllers as it made in regard to claim 1. PO Resp. 50–53. We considered those arguments. For the same reasons explained above, we are not convinced by those arguments. Patent Owner emphasizes the limitation to “the controller is configured to implement a certain function corresponding to the command code in the data packet.” *Id.* Nevertheless, Petitioner relies on the same controller structures as in claim 1 for this limitation so our discussion above applies here as well. As noted above, detail beyond that provided in the Petition about how CEBUS protocol is implemented is not required.

Claim 17

Claim 17 depends from claim 16. Claim 17 recites “a plurality of transceivers each having a unique address, the transceiver being one of the

plurality of transceivers,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. *See* discussion of claims 1 and 2; Ex. 1004, 5:32–56 (Mason’s AMR system includes “a plurality of utility meters.”), 10:42–46, 16:57–65; Pet. 74–75; Ex. 1003 ¶¶ 283–85. Patent Owner does not make arguments specific to this claim limitation.

Claim 17 further recites “a plurality of controllers associated with at least one of the transceivers, the controller being in communication with at least one other transceiver with a preformatted message,” which Petitioner sufficiently shows to be disclosed in Mason and Shuey by a preponderance of the evidence. *See* discussion of claims 1 and 16; Ex. 1004, 5:35–41, 5:59–64, 16:57–65; Ex. 1005, 4:48–53, Figs. 2, 4; Pet. 75–77; Ex. 1003 ¶¶ 286–91. Patent Owner does not make arguments specific to this claim limitation.

Claim 17 further recites “at least one sensor associated with at least one of the transceivers to detect a condition and output a data signal to the transceiver,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. *See* discussion of claims 1 and 16; Ex. 1004, 1:23–25, 4:45–47, 5:32–34 (meters “metering electricity, gas or water”), 5:58–64 (meter includes “analog transducers”), 6:10–13, 22–35, 9:58–65, 16:45–47, Fig. 2; Pet. 77–78; Ex. 1003 ¶¶ 292–95. Patent Owner does not make arguments specific to this claim limitation.

Claim 17 further recites “at least one actuator associated with at least one of the transceivers to activate a device,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. *See* discussion of claim 9; Ex. 1004, 5:59–64, 16:40–44, 16:52–65; Pet. 78; Ex. 1003 ¶¶ 296–98.

Specifically, the Petition states “Mason teaches activating a device either by using a “‘disconnect switch’ actuator associated with a transceiver or by controlling (*e.g.* activating) ‘home automation’ devices (*i.e.*, actuators).” Pet. 78 (citing Ex. 1004, 5:59–64, 16:40–44, 16:52–65; ’492 FWD, 48–49.) Ex. 1003 ¶¶ 296–98.) Patent Owner argues that Petitioner points to the disconnect switch as both the actuator and the device and that Petitioner points to a disconnect switch which deactivates a device, *i.e.*, disconnects it, rather than activating, *i.e.* turning on the device as Patent Owner reads claim 17. PO Resp. 55–56; Sur-Reply 22–23. Nevertheless, Petitioner relies on the drive circuit of the switch as the actuator and the disconnect switch itself (or home automation functions) as the activation of device. Pet. 56, 78; Reply 24.

Patent Owner is equating “activating” a device with turning the device on rather than activating functions on a device. We are not convinced that the term is so limited. Although neither party provided a construction for the terms device, actuator, or activation, Petitioner cites to the specification to show that the ’708 patent refers to actuators as activating functions on a device. Reply 23–24.

Patent Owner suggests that Petitioner cites to the specification “to make up for deficiencies in the asserted references.” Sur-Reply 24. To the contrary, Petitioner cites to the specification to support its reading of the terms actuator and activate.

Specifically, Petitioner states “the ’708’s own disclosure of conventional embodiments such as using an actuator to control ‘home heating’ and enabling ‘remote controllable home automation’ (Mason 8:1-21, 13:3-7).” Reply 24. For example, the specification states “[t]he addition

of the actuator 520 to the integrated transceiver 500 permits the data interface 525 to apply signals to the manual temperature control for the temperature set point, the climate control mode switch, and the system on/off switch.” Ex. 1001, 8:15–19; Reply 24. Thus, the specification associates the actuator with activating a variety of functions and/or devices including, *but not limited to*, an on/off switch. That is, such a switch, that disconnects a device it analogous to a switch that turns off a device meets the limitation to an “activation.” Thus, we are not convinced by Patent Owner’s argument.

Patent Owner further argues that Petitioner incorrectly refers to “home automation” devices as the actuators. PO Resp. 56. We determine that although the Petitioner has used unclear phrasing, “home automation (i.e., actuators)” appears to refer to an unspecified “actuator” that activates “home automation” functions. Nevertheless, given the confusion we do not rely on Petitioner’s contention as to “home automation (i.e., actuators)” to support this decision.

Claim 18

Claim 18 depends from claim 16. Claim 18 recites “the controller sends the preformatted message via an associated transceiver,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. *See* discussion of claim 1 and 16; Pet. 78; Ex. 1003 ¶¶ 300–02. Patent Owner does not make arguments specific to this claim limitation.

Claim 18 further recites “at least one transceiver sends the preformatted response message,” which Petitioner sufficiently shows to be disclosed in Mason, Shuey, and C12.18, by a preponderance of the evidence. *See* discussion of claim 1 and 16; Ex. 1004, 3:27–32, 4:45–47, 6:8–13, 45–

54, 9:37–40, 10:60–63, 10:14–23, 13:27–40, 15:1–10; Ex. 1012, 3, 7; Pet. 79–80; Ex. 1003 ¶¶ 303–08. Patent Owner does not make arguments specific to this claim limitation.

Claim 19

Claim 19 depends from claim 16. Claim 19 recites “the preformatted message is concatenated with function codes to provide the receiving device with multiple function codes, the device configured to perform the functions in the preformatted message,” which Petitioner sufficiently shows to be disclosed in Mason, Shuey, and C12.18, by a preponderance of the evidence. *See* discussion of claim 5 and 16; Pet. 80–81; Ex. 1003 ¶¶ 309–12. Patent Owner does not make arguments specific to this claim.

Claim 20

Claim 20 depends from claim 16. Claim 20 recites “at least one transceiver receives the preformatted message requesting sensed data,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. *See* discussion of claims 1 and 16; Ex. 1004, 3:27–32, 4:45–47, 9:36–40, 10:60–63, Fig. 1; Ex. 1012, 6; Pet. 81; Ex. 1003 ¶¶ 313–16. Patent Owner does not make arguments specific to this claim limitation.

Claim 20 further recites “confirms the receiver address as its own unique address,” which Petitioner sufficiently shows to be disclosed in Mason and Shuey by a preponderance of the evidence. Ex. 1005, 5:51–55, 7:28–32, Fig. 5; Pet. 81–82; Ex. 1003 ¶¶ 317–20. Patent Owner does not make arguments specific to this claim limitation.

Claim 20 further recites “receives a sensed data signal,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of

the evidence. *See* discussion of claim 17; Ex. 1004, 5:59–64, 6:10–13; Pet. 82–83; Ex. 1003 ¶¶ 321–23. Patent Owner does not make arguments specific to this claim limitation.

Claim 20 further recites “formats the sensed data signal into scalable byte segments,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. *See* discussion of claim 1; Ex. 1004, 9:37–40, 9:59–61, 7:55–67, 13:28–40, 15:23–25, 37–57; Ex. 1012, 6–7, 12; Pet. 83–85; Ex. 1003 ¶¶ 324–27.

Patent Owner argues Petitioner fails to separately explain how Mason alone or Mason and C12.18 perform “formatting” besides its analysis of claim 1. We are not convinced by this argument. For example, the Petition discusses how messages are segmented at pages 83–84. Pet. 83–84. Additionally, according to Patent Owner we should reject the challenge to claim 20 for the same reasons as the challenge to claim 1. Nevertheless, we were not convinced by Patent Owner’s arguments regarding claim 1 so we are not convinced by this argument for the same reason.

Claim 20 recites “determines the number of segments required to contain the sensed data signal,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. Ex. 1004, 7:59–8:13, 20–43; Ex. 1012, 13; Pet. 85–86; Ex. 1003 ¶¶ 328–31. Patent Owner does not make arguments specific to this claim limitation.

Claim 20 further recites “generates and transmits the preformatted response message comprising at least one packet,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. *See* discussion of claim 18; Pet. 86–87; Ex. 1003 ¶¶ 332–35. Patent Owner does not make arguments specific to this claim limitation.

Claim 22

Independent claim 22 recites “[a] wireless communication device for use in a communication system to communicate commands and sensed data between remote wireless communication devices, the wireless communication device comprising,” which Petitioner contends is disclosed in Mason and Shuey. *See* discussion of claim 1; Pet. 87; Ex. 1003 ¶¶ 339–41.

As explained above, we determined that the preamble is not limiting but we rely on Petitioner’s contentions cited above as a predicate of the contentions below, so they are listed here. Patent Owner’s arguments regarding the preamble are not commensurate with the scope of the invention as properly construed. *See* PO Resp. 61.

Claim 22 further recites “a transceiver configured to send and receive wireless communications,” which Petitioner sufficiently shows to be disclosed in Mason and Shuey by a preponderance of the evidence. *See* discussion of claim 1; Pet. 87; Ex. 1003 ¶¶ 342–44. Patent Owner does not make arguments specific to this claim limitation.

Claim 22 further recites “a controller, operatively coupled to the transceiver, configured to communicate with at least one other remote wireless device via the transceiver with a preformatted message,” which Petitioner sufficiently shows to be disclosed in Mason and Shuey by a preponderance of the evidence. *See* discussion of claim 1; Ex. 1004, 5:59–64, Fig. 2; Ex. 1005, 4:42–57, Fig. 4; Pet. 87–88; Ex. 1003 ¶¶ 345–47. Patent Owner does not make arguments specific to this claim limitation.

Claim 22 further recites “the controller further configured to receive and format data messages,” which Petitioner sufficiently shows to be

disclosed in Mason, Shuey, and C12.18 by a preponderance of the evidence. *See* discussion of claim 1; Pet. 88; Ex. 1003 ¶¶ 348–50.

According to Patent Owner we should reject the challenge to claim 22 for the same reasons, regarding formatting and the preamble, as the challenge to claim 1. PO Resp. 58, 61. Nevertheless, we did not agree with Patent Owner’s arguments about formatting and the preamble regarding claim 1 so we are not convinced by this argument for the same reason.

Patent Owner also makes similar arguments regarding Petitioner’s alleged reliance on multiple controllers as it made in regard to claim 1. PO Resp. 58–61. We considered those arguments. For the same reasons explained above, we are not convinced by those arguments.

Claim 22 further recites “wherein data messages comprising a receiver address comprising an address of at least one remote wireless device,” which Petitioner sufficiently shows to be disclosed in Mason, Shuey, and C12.18 by a preponderance of the evidence. *See* discussion of claim 1 and 16; Ex. 1004, 6:44–54, 10:1–11, 10:35–40; Pet. 88–89; Ex. 1003 ¶¶ 351–54. Patent Owner does not make arguments specific to this claim limitation.

Claim 22 further recites “a command indicator comprising a command code,” which Petitioner sufficiently shows to be disclosed in Mason, Shuey, and C12.18 by a preponderance of the evidence. *See* discussion of claim 1; Pet. 89; Ex. 1003 ¶¶ 355–57. Patent Owner does not make arguments specific to this claim limitation.

Claim 22 further recites “a data value comprising a scalable message,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. *See* discussion of claim 7; Pet. 89; Ex.

1003 ¶¶ 358–60. Patent Owner does not make arguments specific to this claim limitation.

Claim 22 further recites “a function code corresponding to function status of a device co-located with the transceiver,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. *See* discussion of claim 19; Ex. 1004, 5:58–67, 16:57–65, Fig. 2; Pet. 89–90; Ex. 1003 ¶¶ 361–66. Patent Owner does not make arguments specific to this claim limitation.

Claim 24

Claim 24 depends from claim 22. Claim 24 recites “wherein the command code comprises at least one of a device-specific code or a non-device-specific code,” which Petitioner sufficiently shows to be disclosed in Mason, C12.18, and Shuey by a preponderance of the evidence. *See* discussion of claims 1, 9, and 10; Pet. 94; Ex. 1003 ¶¶ 373–76. Patent Owner does not make arguments specific to this claim limitation.

Claim 24 recites “the device-specific code commands change of a setting of an actuator co-located with the transceiver,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. *See* discussion of claims 9, and 22; Pet. 94; Ex. 1003 ¶¶ 379–81. Patent Owner does not make arguments specific to this claim limitation.

Claim 24 recites “the non-device-specific code includes network status/diagnostic commands,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. *See* discussion of claims 9, and 22; Pet. 95; Ex. 1003 ¶¶ 382–84. Patent Owner does not make arguments specific to this claim limitation.

Patent Owner argues “Petitioner’s analysis for claims 23 and 24 is deficient for the same reasons discussed above for claim 22.” PO Resp. 62. For the reasons above, we are not convinced.

F. Obviousness of Claims over Mason, Shuey, C12.18, and Ardalan

Petitioner contends that claims 3, 4, 14, and 21 are unpatentable under 35 U.S.C. § 103(a) as obvious over Mason, Shuey, C12.18, and Ardalan. Pet. 6. To support its contentions, Petitioner provides explanations as to how the prior art allegedly teaches each claim limitation. *Id.* at 45–47, 65, 87. Petitioner articulates sufficient reasons for combining Mason and Ardalan. *Id.* at 25–26. For example, Petitioner contends that:

Ardalan and Mason describe similar CEBUS LAN-to-TCP/IP network structures . . . Ardalan, 1:29-65, 2:29-43, Fig. 1; Mason, 2:50-64, 5:32-41, Fig. 1; Madisetti, ¶99. Second, Mason states that its teachings “may be modified.” Mason, 17:4-12. Third, a [person of ordinary skill in the art] would have been motivated to look to Ardalan’s teachings when implementing Mason’s “brief[]” advantageous teachings of a meter on a CEBUS LAN communicating with a TCP/IP WAN. *See* Mason, 6:1-10. Fourth, Ardalan provides teachings of structuring the address of a meter on a CEBUS network so that it can advantageously be contacted via TCP/IP over a WAN. Ardalan, 2:46-67; Madisetti, ¶99. Fifth, by 1998 it was well-understood that residential networks and LANs commonly and advantageously used TCP/IP between devices on a LAN and between a LAN and a WAN. Madisetti, ¶99; *see also* Mason, 6:1-8, 7:39-42, Fig. 3. A [person of ordinary skill in the art] further would have recognized that this straightforward/predictable combination (yielding the claimed features) would have worked as expected. Madisetti, ¶99.

Id. at 25–26.

Claim 3

Claim 3 depends from claim 2. Claim 3 recites “the unique transceiver address is an Internet Protocol address,” which Petitioner sufficiently shows to be disclosed in Mason and Ardalan by a preponderance of the evidence. *See* Ex. 1008, 2:45–47, 2:55–67, 3:28–36; Pet. 45–46; Ex. 1003 ¶¶ 155–57. Petitioner articulates sufficient reasons for combining Mason and Shuey. Pet. 25–26. Patent Owner does not make arguments specific to this claim.

Claim 4

Claim 4 depends from claim 1. Claim 4 recites “the function code further comprises an Internet Protocol address,” which Petitioner sufficiently shows to be disclosed in Mason, C12.18, and Ardalan by a preponderance of the evidence. *See* Ex. 1004, 7:38–41, Ex. 1012, 7–8; Ex. 1008, 2:45–47; Pet. 46; Ex. 1003 ¶¶ 158–61. Patent Owner does not make arguments specific to this claim.

Claim 14

Claim 14 depends from claim 11. As noted above, however, Petitioner has not shown by a preponderance of the evidence that claim 11 is obvious over Mason and C12.18, or Mason, C12.18, and Ehlers. Ardalan does not make up for the deficiency in the showing as to claim 11, Petitioner has not shown by a preponderance of the evidence that claim 14 would have been obvious over Mason, Shuey, C12.18, and Ardalan.

Claim 21

Claim 21 depends from claim 16. Claim 21 recites “wherein the unique address of at least one receiver is an Internet Protocol address,” which Petitioner sufficiently shows to be disclosed in Mason by a

preponderance of the evidence. *See* discussion of claim 3; Pet. 87; Ex. 1003 ¶¶ 336–38. Patent Owner does not make arguments specific to this claim limitation.

G. Obviousness of Claims over Mason, Shuey, C12.18, and Lee

Petitioner contends that claims 5, 11–13, 15, 19, and 22 are unpatentable under 35 U.S.C. § 103(a) as obvious over Mason, Shuey, C12.18, and Lee. Pet. 6. Petitioner articulates sufficient reasons for combining Mason and Lee. *Id.* at 26–27. For example, Petitioner contends that:

A [person of ordinary skill in the art] would have been motivated to apply Lee’s teachings of CEBUS commands in implementing Mason. First, Lee, like Mason, is directed to collecting data from energy meters. Lee, 1:11-15. Second, Mason states that its teachings “may be modified.” Mason, 17:4-12. Third, Lee’s teachings provide additional detail about how to implement the CEBUS CAL protocol used by Mason. Mason, 9:42-47; Lee, 4:34-57. Fourth, Mason teaches that the “largest” command used in Mason is only 8 bytes, but provides 15 bytes for application layer commands. Mason, 15:35-36, 15:48-49. Lee teaches using the full 15 available bytes by advantageously including (*e.g.*, concatenating) multiple commands using separators: Lee, Fig. 7A. It also would have been obvious to apply Lee’s additional implementation detail teachings about the CEBUS protocol in implementing Mason’s CEBUS protocol, including, *e.g.*, Lee’s teaching that CEBUS packets include a CRC (cyclical redundancy check) code to advantageously ensure that packets are reliably transmitted. Lee, 3:34-36; Madisetti ¶100

Id. at 26–27.

Patent Owner suggests that this statement of reasons to combine is just a repetition of the function and is insufficient and, also, there are other

means of error detection. PO Resp. 47. We are not convinced. Under Federal Circuit precedent, obviousness “does not require that the motivation be the *best* option, only that it be a *suitable* option from which the prior art did not teach away.” *PAR Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1197–98 (Fed. Cir. 2014).

As stated above, Lee provides details on how to implement CEBUS CAL protocol used by Mason. Additionally, a benefit of CRC code is checking errors. “[W]hen a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” *KSR*, 550 F.3d at 417 (quoting *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 282 (1976)).

Claim 5

Claim 5 depends from claim 1. Claim 5 recites “the command code of the preformatted message are concatenated to provide a receiving device with multiple command codes, the device configured to perform one or more functions corresponding to the command code in the preformatted message,” which Petitioner sufficiently shows to be disclosed in Mason, Shuey, C12.18, and Lee by a preponderance of the evidence. *See* Ex. 1004,; Ex. 1009, 4:50–57, Fig. 7A; Ex. 1012, 3–4, 6, 9–10; Pet. 48–49; Ex. 1003 ¶¶ 167–68. Patent Owner does not make arguments specific to this claim limitation.

Claims 11–13, and 15

We determined that Petitioner had not shown that Mason taught the limitation to “determining a location from which the duplicate message originated,” recited in claim 11. Lee does not make up for the deficiency as

to that limitation. Thus, Petitioner has not shown that claim 11 or claims 12, 13, and 15 that depend from claim 11 would have been obvious over Mason, Shuey, C12.18, and Lee.

Claim 19

Claim 19 depends from claim 16. Claim 19 recites “the preformatted message is concatenated with function codes to provide the receiving device with multiple function codes, the device configured to perform the functions in the preformatted message,” which Petitioner sufficiently shows to be disclosed in Mason, Shuey, C12.18, and Lee by a preponderance of the evidence. *See* discussion of claims 5 and 16; Pet. 80–81; Ex. 1003 ¶¶ 309–12. Patent Owner does not make arguments specific to this claim.

Claim 22

For independent claim 22, Petitioner relies on its contentions from ground 1 except that it also relies on the contentions from this ground as to Lee and claim 19 regarding “function codes.” That is, claim 22 further recites “a function code corresponding to function status of a device co-located with the transceiver,” which Petitioner sufficiently shows to be disclosed in Mason, C12.18, and Lee by a preponderance of the evidence. *See* discussion of claim 19; Ex. 1004, 5:58–67, 16:57–65, Fig. 2; Pet. 89–90; Ex. 1003 ¶¶ 361–66. Patent Owner does not make arguments specific to this claim.

H. Obviousness of Claims over Mason, Shuey, C12.18, and EIA 709.1

Petitioner contends that claim 6 is unpatentable under 35 U.S.C. § 103(a) as obvious over Mason, Shuey, C12.18, and EIA-709.1. Pet. 6. To support its contentions, Petitioner provides explanations as to how the prior art allegedly teaches each claim limitation. *Id.* at 50–52. Petitioner

articulates sufficient reasons for combining Mason and EIA-709.1. *Id.* at 27–28. For example, Petitioner contends that:

A [person of ordinary skill in the art] would have been motivated to look to [EIA-709.1]’s address formatting teachings in implementing Mason’s communication protocol. First, Mason expressly cites [EIA-709.1] when discussing how Mason’s system “may be modified.” Mason, 17:4-12. Second, a POSITA would have been motivated to apply [EIA-709.1]’s teachings of a hierarchical address format to advantageously accommodate systems ranging from a few nodes to multi-domain networks of up to “~2¹⁵” nodes per domain—while simultaneously increasing the system’s flexibility. *See* [EIA-709.1] 12–16; Madisetti, ¶103; ’492 FWD, 44-45. A [person of ordinary skill in the art] further would have recognized that this straightforward/predictable combination (yielding the claimed features) would have worked as expected. Madisetti, ¶103.

Id. at 27–28.

Claim 6

Claim 6 depends from claim 1. Claim 6 recites the device of claim 1 wherein “the receiver address is scalable.” which Petitioner sufficiently shows to be disclosed in Mason and EIA-709.1 by a preponderance of the evidence. *See* Ex. 1004, 10:52–64, 11:1–8, 15:62–63; Ex. 1014, 12–16; Pet. 50–52; Ex. 1003 ¶¶ 171–73. Patent Owner does not make arguments specific to this claim.

I. Obviousness of Claims over Mason, Shuey, C12.18, and Ehlers

Petitioner contends that claims 9, 11–13, 15, 17, and 23 are unpatentable under 35 U.S.C. § 103(a) as obvious over Mason, Shuey, C12.18, and Ehlers. Pet. 6. To support its contentions, Petitioner provides explanations as to how the prior art allegedly teaches each claim limitation. *Id.* at 55–65, 74–78, 90–94. Petitioner articulates sufficient reasons for

combining Mason and Ehlers. *Id.* at 23–25. For example, Petitioner contends that:

A [person of ordinary skill in the art] would have been motivated to also apply Ehlers’ teachings of tracking nodes on the CEBUS network in implementing Mason. First, Mason teaches that the preferred embodiments “may be modified without substantially departing from” its teachings (Mason, 17:4-12), and cites Ehlers as an example of applying Mason’s teachings in a residence using CEBUS RF. Mason, 2:11-18. Second, Mason and Ehlers teach similarly-structured systems used for, *e.g.* monitoring energy usage and controlling load switches and actuators, such as meters, switches and thermostats . . . Mason, Fig. 1, 2:50-63, 5:32–57 Ehlers, Fig. 1, 4:16-20, 8:8-28, 14:61-67, 28:59-29:4, 31:47-59; Madisetti, ¶97. Third, it would have been obvious and straightforward to use Ehlers’ teachings of identifying a load’s location when implementing Mason, advantageously allowing a customer to more intuitively—and therefore more “easily”—“permit[] the power company to control selectively...loads” using the system, and permit a customer to “program loads to function or not function” by identifying devices using their physical location. Ehlers, 3:37-45; Madisetti, ¶98. This advantageously “allows the customer to make decisions about load utilization” based on a “great deal of information.” Ehlers, 5:42-53. A [person of ordinary skill in the art] further would have recognized that this straightforward/predictable combination (yielding the claimed features) would have worked as expected. Madisetti, ¶98.

Pet. 23–25.

Claim 9

Claim 9 depends from claim 1. Claim 9 recites “the command code indicates a change in settings of an actuator associated with the wireless communication device,” which Petitioner sufficiently shows to be disclosed in Mason and Ehlers by a preponderance of the evidence. *See* Ex. 1004, 2:11–21, 5:59–64, 16:40–44, 52–65, Fig. 2; Ex. 1011, 3:53–58, 14:61–67,

15:20–25, 21:44–60, 29:16–31; Pet. 57; Ex. 1003 ¶¶ 188–90. Patent Owner does not make arguments specific to this claim.

Claim 11

For independent claim 11, Petitioner relies on its contentions from ground 1 except that it also relies on the contentions from this ground as to Ehlers (Ex. 1011, 12:17–19) regarding “determining a location” That is, claim 11 further recites “determining a location from which the duplicate message originated,” which Petitioner contends is disclosed in Mason and Ehlers by a preponderance of the evidence. *See* Ex. 1011, 10:8–40, 10:47–11:2, 12:17–50, 30:59–63, Figs. 1, 11–14; Pet. 62–63; Ex. 1003 ¶¶ 217–19.

Petitioner contends “Ehlers discloses determining a location (*e.g.*, using “char location” in “DEVICES”) from which the duplicate message (*e.g.*, reading response) originated.” Pet. 62. We find that Ehlers does not identify duplicates and Petitioner does not cite to disclosure in Ehlers indicating that a reading response is a duplicate message, Johnson performs that function. However, Petitioner contends it would have been obvious to “apply Ehlers’ teaching of using a data structure to track the location of every device in the network, such that the device (*e.g.*, Mason’s node) receiving the duplicate message can advantageously determine the message’s origin in order to, *e.g.*, locate and resolve faults in the system.” *Id.* at 63. Petitioner relies on C.12.18 to determine if a message is a duplicate. Specifically, Petitioner relies on C12.18’s teaching that “when a device receives a ‘duplicate packet ... the target should disregard the duplicate packet.’” Pet. 61 (citing Ex. 1012, 14).

Petitioner has not explained how discarding a duplicate allows determining a duplicates original location. Petitioner has not explained

sufficiently how the combination of Mason, C12.18, and Ehlers together would teach this limitation, for example, how does C12.18 determine whether a packet is a duplicate. *See* PO Resp. 43–44. As noted above, we were not persuaded by Petitioner’s motivation to modify Mason to determine the location of a device that sends a duplicate message.

The Petition cites Ehlers disclosure as motivation for identifying location of device, e.g., Ehlers suggests knowing a device’s location will “‘permit[] the power company to control selectively...loads’ using the system, and permit a customer to ‘program loads to function or not function’ by identifying devices using their physical location. This advantageously ‘allows the customer to make decisions about load utilization’ based on a ‘great deal of information.’” Pet. 24 (citing Ex. 1012, 3:37–45; Ex. 1003 ¶ 98). Nevertheless, this motivation does not explain why the location of a duplicate message would be desired. Especially when C12.18 simply states that a duplicate is discarded. *See* Ex. 1012, 14. Thus motivations that would apply Ehlers location aspects with Mason (such as those recited at Reply 21–22) do not link the location functionality to duplicate detection.

In its Reply, Petitioner contends “C12.18’s teachings do not conflict with Ehlers (*Cf.* POR 43) because they address *packet* structure and message processing protocols—not the *data* structure that is stored at the node and used to track devices.” Reply 21. However, this statement does not explain how the C12.18 duplicate determination works with or affects the alleged location determination function of the combination of Mason and Ehlers. Thus, Petitioner has not shown by a preponderance of the evidence that claim 11 would have been obvious over Mason and C12.18, or Mason, C12.18, and Ehlers.

Claims 12, 13, and 15

Claims 12, 13, and 15 depend from claim 11. Thus, for the reasons above, Petitioner has not shown by a preponderance of the evidence that claims 12, 13, and 15 would have been obvious over the combination of Johnson and Ehlers.

Claim 17

Claim 17 depends from claim 16. Claim 17 further recites “at least one actuator associated with at least one of the transceivers to activate a device,” which Petitioner sufficiently shows to be disclosed in Mason by a preponderance of the evidence. *See* discussion of claim 9; Ex. 1011, 3:53–58, 15:20–25, 21:44–60, 29:16–31; Pet. 78; Ex. 1003 ¶¶ 298–99.

As explained above, Petitioner has shown that Mason alone shows the limitations of claim 17. We do not need to rely on Ehlers for this limitation. Therefore, Patent Owner’s arguments regarding the combination of Mason and Ehlers is moot.

Claim 23

Claim 23 depends from claim 22. Claim 23 recites “the device co-located with the transceiver is a sensor operatively coupled to the controller,” which Petitioner sufficiently shows to be disclosed in Mason and Shuey by a preponderance of the evidence. *See* discussion of claims 17 and 22; Ex. 1004, 5:59–64, 16:52–65, Fig. 2; Ex. 1005, 4:42–57, Fig. 4; Pet. 90–91; Ex. 1003 ¶¶ 367–69. Patent Owner does not make arguments specific to this claim limitation.

Claim 23 further recites “the controller is configured to format the data value with data sensed by the sensor,” which Petitioner sufficiently shows to be disclosed in the combination of Mason and Ehlers by a

preponderance of the evidence. *See* discussion of claims 17 and 22; Ex. 1011, 4:47–62, 10:49–52, 18:49–19:36; 21:24–29, 24:56–25:4, Fig. 1; Pet. 91–94; Ex. 1003 ¶¶ 371–73. Patent Owner does not make arguments specific to this claim limitation.

Patent Owner argues “Petitioner’s analysis for claims 23 and 24 is deficient for the same reasons discussed above for claim 22. PO Resp. 62. For the reasons above, we are not convinced. .

J. Obviousness of Claims over Mason, Shuey, C12.18, and Lyons

Petitioner contends that claims 10 and 24 are unpatentable under 35 U.S.C. § 103(a) as obvious over Mason, Shuey, C12.18, and Lyons. Pet. 6. To support its contentions, Petitioner provides explanations as to how the prior art allegedly teaches each claim limitation. *Id.* at 57–58, 94–95. Petitioner articulates sufficient reasons for combining Mason and Lyons. *Id.* at 27. For example, Petitioner contends that:

A POSITA would have been motivated to apply Lyons’s teachings of a “ping” in implementing Mason. First, Lyons’ “ping” was a well-understood and common command used in networking. Madisetti, ¶102. Second, Lyons, like Mason, is directed to collecting information from remote meters. Lyons, 1:11-16. Third, a POSITA reviewing Mason would have recognized the importance of maintaining a stable and working network (*see* Mason, 2:33-36), and would have been motivated to look to Lyons for, *e.g.*, its advantageous teachings regarding maintaining integrity and reliability of networks by, *e.g.*, issuing “ping” commands to verify the network is “functioning properly.” Lyons, 36:59-37:3. A POSITA further would have recognized that this straightforward/predictable combination (yielding the claimed features) would have worked as expected. Madisetti, ¶102.

Id. at 27.

Claim 10

Claim 10 depends from claim 1. Claim 10 recites “the command code indicates a request for a ping response by the wireless communication device,” which Petitioner sufficiently shows to be disclosed in Mason and Lyons by a preponderance of the evidence. *See* Ex. 1010, 36:65–37:3 (“each one of the controllers ... transmits a predetermined ‘ping’ ... causes the other controller to transmit a predetermined response....”), 37:3–21, 37:44–48; Pet. 57–58; Ex. 1003 ¶¶ 191–94. Patent Owner does not make arguments specific to this claim.

Claim 24

Claim 24 depends from claim 22. Claim 24 recites “wherein the command code comprises at least one of a device-specific code or a non-device-specific code,” which Petitioner sufficiently shows to be disclosed in Mason, C12.18, Shuey, and Lyons by a preponderance of the evidence. *See* discussion of claims 1, 9, and 10; Pet. 94; Ex. 1003 ¶¶ 377–78. Patent Owner does not make arguments specific to this claim limitation.

Claim 24 further recites “the device-specific code commands change of a setting of an actuator co-located with the transceiver,” which Petitioner sufficiently shows to be disclosed in Mason and C12.18 by a preponderance of the evidence. *See* discussion of claims 9, and 22; Pet. 94; Ex. 1003 ¶¶ 379–81. Patent Owner does not make arguments specific to this claim limitation.

Claim 24 recites “the non-device-specific code includes network status/diagnostic commands,” which Petitioner sufficiently shows to be disclosed in Mason and Lyons by a preponderance of the evidence. *See*

discussion of claims 9, and 22; Pet. 95; Ex. 1003 ¶¶ 382–84. Patent Owner does not make arguments specific to this claim limitation.

K. Obviousness of Claims over Mason, Shuey, C12.18, Lee, Ardalan, and Ehlers

Petitioner contends that claims 11–15 are unpatentable under 35 U.S.C. § 103(a) as obvious over Mason, Shuey, C12.18, Lee, Ardalan, and Ehlers. Pet. 6. To support its contentions, Petitioner provides explanations as to how the prior art allegedly teaches each claim limitation. *Id.* at 58–66.

This ground combines contentions from the previous grounds including ground 1, and the grounds that add Lee, Ardalan, and Ehlers. Nevertheless, this ground does not add any new contentions regarding the “location” limitation we found lacking above. Thus, this ground suffers from the issues discussed above in various grounds regarding claim 11. Lee, Ardalan, and Ehlers do not make up for the deficiencies of Mason, Shuey, and C12.18. Thus, we are not persuaded that Petitioner has shown by a preponderance of the evidence that claims 11–15 are obvious over Mason, Shuey, C12.18, Lee, Ardalan, and Ehlers.

IV. CONCLUSION

For the foregoing reasons, we determine Petitioner has demonstrated, by a preponderance of the evidence, the unpatentability of claims 1–10 and 16–24 of the ’708 patent. However, we determine Petitioner has *not*

demonstrated by a preponderance of the evidence that claims 11–15 are unpatentable.¹⁹

V. ORDER

Accordingly, it is

ORDERED that claims 1–10, and 16–24 of U.S. Patent No. 8,964,708 B2 are unpatentable;

FURTHER ORDERED that claims 11–15 of U.S. Patent No. 8,964,708 B2 are not shown to be unpatentable; and

FURTHER ORDERED that parties to the proceeding seeking judicial review of this Final Written Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

¹⁹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1, 2, 5–9, 11–13, 15–20, 22, 24	103(a)	Mason, Shuey, C12.18	1, 2, 5–9, 16– 20, 22, 24	11–13, 15
3, 4, 14, 21	103(a)	Mason, Shuey, C12.18, Ardalan	3, 4, 21	14
5, 11–13, 15, 19, 22	103(a)	Mason, Shuey, C12.18, Lee	5, 19, 22	11–13, 15
6	103(a)	Mason, Shuey, C12.18, EIA 709.1	6	
9, 11–13, 15, 17, 23	103(a)	Mason, Shuey, C12.18, Ehlers	9, 17, 23	11–13, 15
10, 24	103(a)	Mason, Shuey, C12.18, Lyons	10, 24	
11–15	103(a)	Mason, Shuey, C12.18, Lee, Ardalan, Ehlers		11–15
Overall Outcome			1–10, 16–24	11–15

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