

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DISH NETWORK L.L.C., DISH NETWORK SERVICE L.L.C.,
DISH NETWORK CORPORATION, and
DISH NETWORK CALIFORNIA SERVICE CORPORATION,
Petitioners,

v.

ENTROPIC COMMUNICATIONS, LLC,
Patent Owner.

IPR2024-00560
Patent 8,631,450 B1

Before LYNNE H. BROWNE, JON M. JURGOVAN, and
FREDERICK C. LANEY, *Administrative Patent Judges*.

BROWNE, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Dish Network L.L.C., Dish Network Service L.L.C., Dish Network Corporation, and Dish Network California Service Corporation (“Petitioner”) filed a Petition (Paper 2 (“Pet.”)), seeking *inter partes* review of claims 29–38 (the “challenged claims”) of U.S. Patent No. 8,631,450 B1 (Ex. 1001 (“the ’450 patent”)). *See* Pet. 1–3. Entropic Communications, LLC (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”).

For the reasons stated below, we determine that Petitioner has not established a reasonable likelihood that it would prevail with respect to any claim challenged in the Petition. We therefore deny institution of *inter partes* review.

A. *Related Matters*

The parties indicate that the ’450 patent is or was involved in the following district court actions:

Entropic Communications, LLC v. DirecTV, LLC f/k/a DirecTV, Inc. et al., Case No. 2-23-cv-05253 (C.D. Cal.);

Entropic Communications, LLC v. DISH Network Corporation et al., Case No. 2-23-cv-01043 (C.D. Cal.);

Entropic Communications, LLC v. Cox Communications, Inc. et al., Case No. 2-23-cv-01047 (C.D. Cal.);

Entropic Communications, LLC v. Comcast Corporation et al., Case No. 2-23-cv-01048 (C.D. Cal); and

Entropic Communications, LLC v. Charter Communications, Inc., Case No. 2-23-cv-00050 (E.D. Tex.).

Pet. 93; Paper 4, 1; Paper 7, 1.¹

¹ In Patent Owner’s updated mandatory notices (Paper 7), Patent Owner indicates that the related matters information is unchanged. Paper 7, 1.

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Patent Owner states Petitioner has requested *inter partes* review of the following patents which are being asserted by Patent Owner in district court actions identified above:

U.S. Patent No. 7,594,249 in IPR2024-00373;
U.S. Patent No. 7,295,518 in IPR2024-00393;
U.S. Patent No. 7,889,759 in IPR2024-00462;
U.S. Patent No. 8,621,539 in IPR2024-00546;
U.S. Patent No. 8,320,566 in IPR2024-00555; and
U.S. Patent No. 8,363,681 in IPR2024-00562.

Paper 4, 2–3.

Patent Owner additionally identifies the following patents as affecting or affected by a decision in this proceeding:

U.S. Patent No. 10,257,566;
U.S. Patent No. 9,172,993;
U.S. Patent No. 9,565,469;
U.S. Patent No. 8,891,544;
U.S. Patent No. 8,621,539;
U.S. Patent No. 8,498,294; and
U.S. Patent No. 8,085,802.

Paper 4, 2.

Patent Owner additionally identifies the following patents as also being asserted by Patent Owner in the above-referenced district court actions:

U.S. Patent No. 7,295,518;
U.S. Patent No. 7,594,249;
U.S. Patent No. 7,889,759;
U.S. Patent No. 8,085,802;
U.S. Patent No. 8,228,910;

However, Paper 7 leaves out the related patents and related *inter partes* reviews listed on pages 2 and 3 of Patent Owner’s original mandatory notices (Paper 4). We have included the related patents and related *inter partes* reviews listed on pages 2 and 3 of Paper 4 in this listing of Related Matters.

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U.S. Patent No. 8,320,566;
U.S. Patent No. 8,363,681;
U.S. Patent No. 8,621,539;
U.S. Patent No. 9,838,213;
U.S. Patent No. 10,257,566; and
U.S. Patent No. 10,432,422.

Paper 4, 2–3.

B. The '450 Patent (Ex. 1001)

The '450 patent, for a “Broadband Local Area Network,” relates to a broadband coaxial network (BCN) with modems that enable network wired devices to communicate over a typical home coaxial network that may include passive splitters and different types of coaxial cable. Ex. 1001, codes (54), (57), 4:12. The '450 patent describes conventional systems that have significant isolation between various customer premises equipment (CPE). *Id.* at 3:49–67; *see also id.* at 1:41. “The isolation results in difficulty for transmitting two-way communication data between the different CPEs.” *Id.* at 3:49–67. According to '450 patent “a need [exists] for a system and method to connect a variety of CPEs into a local data network, such as a local area network (“LAN”), within a building such as a home or office.” *Id.* at 4:1–8.

Figure 19, reproduced below, is a flowchart illustrating a method performed by a BCN in order to achieve common bit-loading. Ex. 1001, 23:41–24:25.

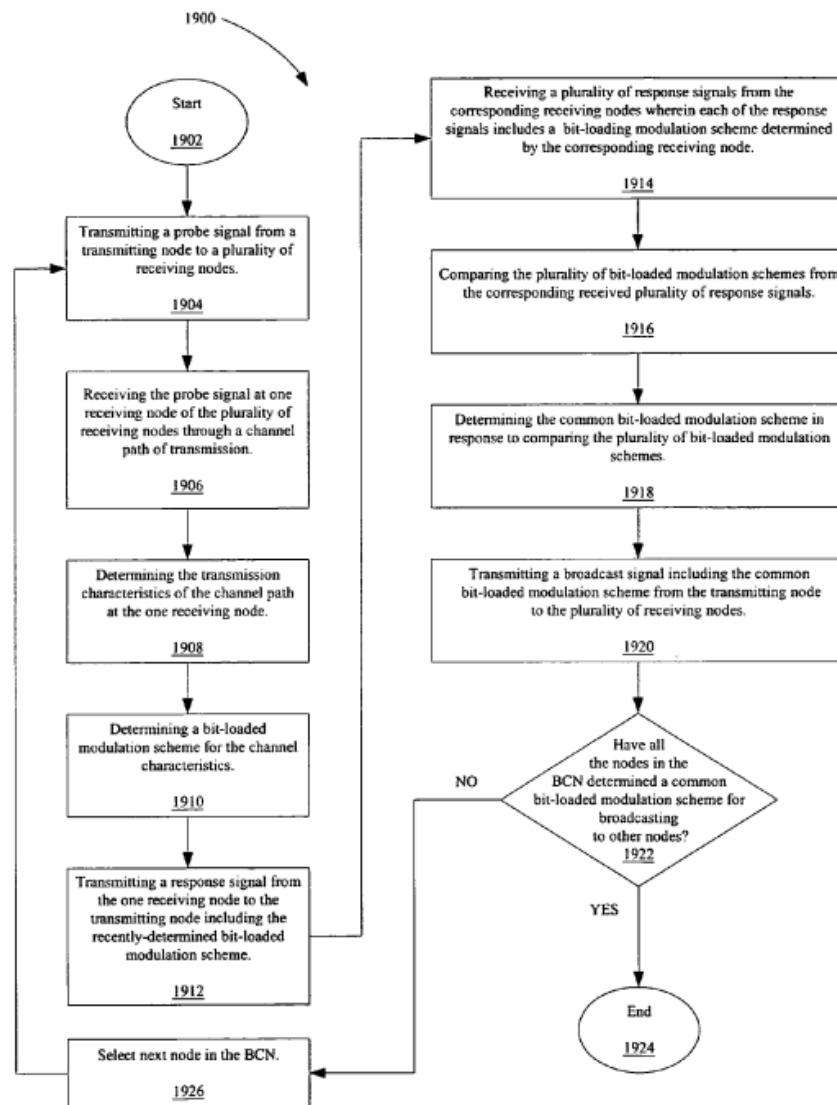


FIG. 19

Figure 19 above shows a method performed by the BCN. *Id.* at 23:41–24:25; *see also id.* at Figs. 9, 12, 13A–13C, 19:27–21:2. In step 1904, a transmitting node transmits a probe signal to a plurality of receiving nodes and, in step 1906, a receiving node of the plurality of receiving nodes receives the probe signal through a channel path of transmission. *Id.* at 23:41–24:25. In step 1908, the receiving node determines the transmission characteristics of the channel path and, in step 1910, in response to the

determined transmission characteristics, the receiving node determines a bit-loaded modulation scheme for the transmission characteristics of the channel path. *Id.* In step 1912, the receiving node then transmits a response signal to the transmitting node, informing the transmitting node of the determined bit-loaded modulation scheme. *Id.* In step 1914, the transmitting node then receives a plurality of response signals from corresponding receiving nodes wherein each of the response signals informs the transmitting node of the corresponding bit-loaded modulation scheme determined by each of the plurality of receiving nodes. *Id.* In step 1916, in response to receiving the plurality of response signals, the transmitting node compares the bit-loaded modulation schemes from the corresponding response signals. *Id.* In step 1918, the transmitting node determines a common bit-loaded modulation scheme and, in step 1920, transmits a broadcast signal relaying the common bit-loaded modulation scheme to the plurality of receiving nodes. *Id.*

C. Challenged Claims

Petitioner challenges claims 29–38 of the '450 patent. Pet. 2. Of the challenged claims, claims 29 and 34 are independent. Independent claim 29 is reproduced below:

29. A broadcasting method within a Broadband Coaxial Network (“BCN”), comprising:
- a transmitting node transmitting a probe signal to a plurality of receiving nodes;
 - the transmitting node receiving a plurality of response signals comprising a plurality of bit-loading modulation schemes from the plurality of receiving nodes,
 - wherein each of the plurality of receiving nodes receives the probe signal through a corresponding channel path,

determines transmission characteristics of the corresponding channel path,
determines a bit-loading modulation scheme for the corresponding channel path based on the transmission characteristics, and
transmits a response signal to the transmitting node informing the transmitting node of the bit-loading modulation scheme for the corresponding channel path;
the transmitting node comparing the plurality of bit-loading modulation schemes to determine a common bit-loading modulation scheme; and
the transmitting node transmitting a broadcast signal relaying the common bit-loading modulation scheme to the plurality of receiving nodes.

Ex. 1001, 28:64–29:21.

D. The Alleged Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 1–3, 73):

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1	29–31, 34–36	103(a)	Grube ²
2	29–31, 34–36	103(a)	Grube, Cioffi ³
3A	29–38	103(a)	Grube, Matsumoto ⁴
3B	29–38	103(a)	Grube, Cioffi, Matsumoto

² U.S. Patent No. 5,521,906, filed January 26, 1995, issued May 28, 1996 (Ex. 1005, “Grube”).

³ U.S. Patent No. 6,473,438 B1, filed June 2, 1995, issued October 29, 2002 (Ex. 1006, “Cioffi”).

⁴ Canadian Patent Application CA 2 350 203 A1, filed October 3, 2000, published April 12, 2001 (Ex. 1007, “Matsumoto”).

E. Testimonial Evidence

In support of its proposed grounds, Petitioner relies on the Declaration of Tim A. Williams, Ph.D. (Ex. 1003). Patent Owner relies on the Declaration of Samuel H. Russ, Ph.D. (Ex. 2003) in support of its Preliminary Response. In our analysis below, we consider the testimony of Dr. Williams and Dr. Russ.

II. ANALYSIS

A. Legal Standards

Petitioner bears the burden to demonstrate unpatentability, and that burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

A claim is unpatentable for obviousness if “the differences between the subject matter sought to be patented 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.” 35 U.S.C. § 103(a)⁵; *see also 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 ordinary skill in the art; and (4)

⁵ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102 and 103. Because the '450 patent issued from an application that was filed before the effective date of the applicable AIA provisions (Ex. 1001, code (22)), the pre-AIA versions of §§ 102 and 103 apply.

when in evidence, objective evidence of nonobviousness.⁶ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art would have a degree in electrical engineering, computer engineering, or a related field and experience working in signal processing and/or communication systems/networks, e.g., a bachelor's and three or more years of experience; a master's and at least one year of experience; or a doctorate and some work experience. Additional education could substitute for professional experience, or *vice versa*.

Pet. 6–7 (citation omitted). Patent Owner does not offer a definition of a person of ordinary skill in the art. *See generally* Prelim. Resp.

For purposes of this Decision, we adopt Petitioner's proposal as reasonable and consistent with the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art may reflect an appropriate level of skill in the art).

C. Claim Construction

We apply the same claim construction standard used in district court actions under 35 U.S.C. § 282(b), namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire

⁶ The parties have not directed our attention to any objective evidence of obviousness or non-obviousness.

patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Petitioner states that “no express constructions are required in this proceeding” and “Petitioner reserves the right to address any construction proposed by Patent Owner or the Board.” Pet. 3. Patent Owner does not identify any claim terms which require construction. *See generally* Prelim. Resp. We determine that for purposes of this proceeding no express construction of any claim term(s) is necessary.

D. Alleged Obviousness of Claims 29–31 and 34–36

Petitioner contends that claims 29–31 and 34–36 are unpatentable over Grube (Pet. 7–54), over the combined teachings of Grube and Coiff (Pet. 54–73), over the combined teachings of Grube and Matsumoto (Pet. 73–88), and over the combined teachings of Grube, Coiff and Matsumoto (*id.*). Patent Owner disagrees. Prelim. Resp. 2–37. Patent Owner argues all of the grounds and claims together. *Id.* For the reasons discussed below, Petitioner fails to demonstrate a reasonable likelihood of prevailing for any of the contested claims on any of the grounds presented in the Petition.

1. Grube (Ex. 1005)

Grube is a U.S. patent for a “Method and Apparatus for Updating Carrier Channel Allocations.” Ex. 1005, code (54). Figure 8, reproduced below, illustrates a communication system in accordance with the Grube invention. *Id.* at 4:48–49.

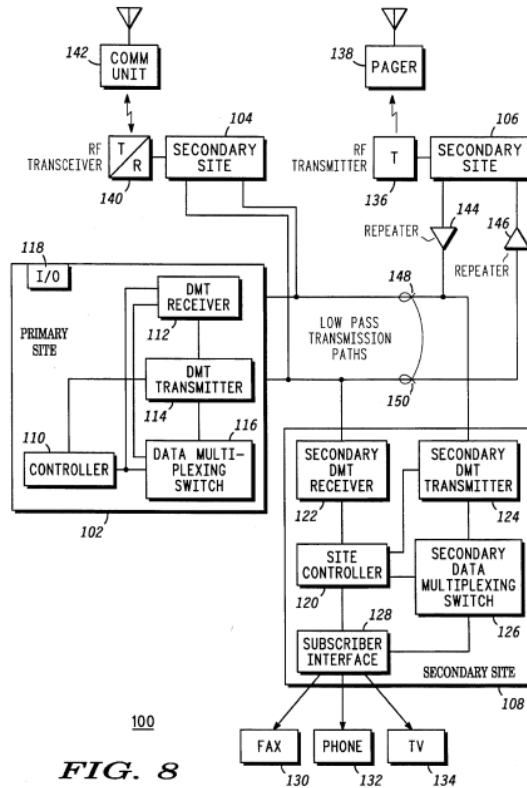


Figure 8 above illustrates a communications system 100 having a primary site 102, a plurality of secondary sites 104-108 interoperably coupled to the primary site via inbound low pass transmission path 148 and outbound low pass transmission path 150. *Id.* at 8:16–37. The primary site 102 includes a DMT (Discrete Multi Tone) receiver 112 and a DMT transmitter 114. *Id.*

An outbound control channel is established when the primary site transmits a training signal to each of the secondary sites. *Ex.* 1005, 7:34–52. Upon receiving the training signal, each secondary site performs a spectral response analysis and creates bit loading information. *Id.* The primary site stores the bit loading information from each secondary site and generates a lowest common denominator (LCD) bit loading table. *Id.* From the LCD bit loading table and bandwidth requirements, the primary site selects an outbound carrier channel. *Id.* Grube further describes a primary site that transmits a signal to all the secondary sites indicating carrier channel

allocations after selection of an outbound control channel. *Id.* at 18:7–16.

2. *Cioffi (Ex. 1006)*

Cioffi is a U.S. patent for a “Method and Apparatus for Coordinating Multi-point To-point Communications in a Multi-tone Data Transmission System.” Ex. 1006, code (54). Cioffi describes a “discrete multi-tone (DMT) transmission scheme has the potential for use in applications well beyond data transmissions over telephone lines . . . [including] cable based subscriber systems (which typically use coaxial cable).” *Id.* at 2:5–10. Cioffi further discloses “bi-directional data transmission systems that facilitate communications between a plurality of remote units and a central unit using a frame based discrete multi-carrier transmission scheme.” *Id.* at 2:66–3:4. In Cioffi, “[w]hen a remote unit is being initialized, it transmits a broad-band initialization signal to the central unit during a synchronized quiet time.” *Id.* at 3:63–65.

3. *Matsumoto (Ex. 1007)*

Matsumoto is a published Canadian Patent Application for a “Method of and Device for Communication.” Ex. 1007, code (54). Matsumoto describes a communication device functioning as a virtual master that “determines [a] commonly-used carrier among [] communication devices and the commonly-used number of bits that can be assigned to each carrier as mapping information based upon the results obtained from [] individual training; and simultaneously gives the mapping information to all the communication devices.” *Id.* at 6:9–7:4; *see also id.* at 24:1–4. Matsumoto also describes a communication device serving as a virtual master carrying out training on all other communication devices and “based upon the results of training obtained from the individual training, it carries out processes for

determining the common tones that can be used among the communication devices and the common number of bits that can be used for the tones.” *Id.* at 23:4–13.

4. *Petitioner’s Reasoning in Support of the Proposed Modifications*

a. *Obviousness Based on Grube*

Petitioner asserts that “Grube modulates data, and a POSITA⁷ would have understood that Grube’s modulation techniques are agnostic to data content.” Pet. 11 (citing Ex. 1005, 7:34–52; Ex. 1003 ¶ 52). Petitioner asserts further that a person of ordinary skill in the art would have “understood that Grube’s modulation techniques are widely applicable to wired communications networks using preexisting transmission paths” and that such a person “would have understood Grube’s methodology to apply to other pre-existing wired communications networks (e.g., coaxial cable networks).” *Id.* at 11–12 (citing Ex. 1005, 4:24–28; Ex. 1003 ¶ 53). Thus, according to Petitioner, a person of ordinary skill in the art “would have been motivated to use and modify the teachings of Grube to solve the issues in the ’450 Patent.” *Id.* at 12. Petitioner also asserts that Grube is analogous art. Pet. 12.

Petitioner’s reasoning in support of the proposed modification of Grube is insufficient. Even if we assume that one of ordinary skill in the could apply Grube’s modulation techniques to a broadband coaxial network (as required by independent claims 29 and 34), Petitioner does not adequately explain why a person of ordinary skill in the art would do so. Petitioner does not identify any benefits that would be achieved by the

⁷ Person of ordinary skill in the art.

proposed modification. Pet. 12. Dr. Williams’ testimony does not cure these deficiencies in Petitioner’s reasoning as it simply repeats the assertions in the Petition without further elaboration. *Cf.* Pet. 11–13, *with* Ex. 1003 ¶¶ 52–56.

Further, even if we assume that Grube is analogous art, a reference discussing subject matter that qualifies it to be within the scope of available prior art does not necessarily also establish that one of ordinary skill would have had a reason to make the modifications required to meet the limitations set forth in the claim. *See Johns Manville Corp. v. Knauf Insulation, Inc.*, IPR2018-00827, Paper 9 at 10 (PTAB Oct. 16, 2018) (informative) (citing *Securus Techs., Inc. v. Global Tel*Link Corp.*, 701 F. App’x 971, 977 (Fed. Cir. 2017) (unpublished) (“a broad characterization of [a reference] as . . . falling within the same alleged field . . . without more, is not enough for [Petitioner] to meet its burden of presenting a sufficient rationale to support an obviousness conclusion”)). Petitioner’s reasoning seems to say no more than that one of ordinary skill in the art could have made the proposed modification because Grube is within the scope of available prior art.

b. Obviousness Based on the Combined Teachings of Grube and Cioffi

Petitioner asserts that “[t]o the extent Patent Owner argues a POSITA would not have found it obvious to implement Grube’s system and method in a broadband coaxial network, Cioffi establishes that such an implementation would have been obvious.” Pet. 59 (citing Ex. 1003 ¶¶ 207–215). Specifically, Petitioner asserts that “Cioffi recognizes that ‘DMT transmission scheme[s] ha[ve] the potential for use in applications well beyond data transmissions over telephone lines,’ and ‘it can be used in a variety of other digital subscriber access systems as well,’ including ‘cable

based subscriber systems (which typically use coaxial cable).” Pet. 59 (citing Ex. 1006, 2:5–11, 3:9–16). Petitioner asserts that “Cioffi further teaches the use of broadband signals in its coaxial cable network.” *Id.* (citing Ex. 1006, 3:63–65). Petitioner reasons that a person of ordinary skill in the art “would have thus been motivated to incorporate Cioffi’s coaxial cable network infrastructure that supports the transmission of broadband signals into Grube’s determination of a common bit-loading modulation scheme in the context of DMT transmission schemes.” *Id.* (citing Ex. 1003 ¶¶ 207–209).

Petitioner asserts further that a person of ordinary skill in the art “would have had a reasonable expectation that the Grube-Cioffi combination would produce a successful outcome.” Pet. 61 (citing Ex. 1003 ¶¶ 213–216). Petitioner asserts that a person of ordinary skill in the art “would have found the implementation of Cioffi’s network infrastructure to Grube’s method to be a predictable and routine exercise to extend Grube’s applicability to other types of communications networks beyond those disclosed in Grube, such as networks disclosed by Cioffi.” *Id.* (citing *Id.* at ¶ 214). According to Petitioner, “Cioffi teaches that DMT transmission schemes are applicable to broadband coaxial networks” and a person of ordinary skill in the art “would have simply implemented Cioffi’s central modem as Grube’s primary site, while retaining the functionalities of Grube’s primary site, and a POSITA would have further implemented Cioffi’s remote modems as Grube’s secondary sites (red), while retaining the functionalities of Grube’s secondary sites.” *Id.* at 61–62 (citing Ex. 1006, 2:5–11, 3:63–65; Ex. 1003 ¶ 214).

In addition, Petitioner asserts that a person of ordinary skill in the art

“would also expect the implementation of Cioffi’s network to Grube’s system and method to be successful because a POSITA would have understood that switching the link medium neither alters Grube’s technique for determining a common bit-loading modulation scheme nor renders parts of Grube’s method redundant.” Pet. 62 (citing Ex. 1003 ¶215).

Patent Owner responds that “Grube’s entire purpose and principle of operation . . . is to achieve one-to-many and many-to-one communications ‘utiliz[ing] existing telephone lines,’ *i.e.*, the existing twisted-pair telephonic system” and that

Petitioner’s proposed combination of simply adding coaxial cable to Grube’s system without modification is just as nonsensical as it would be to argue that a POSITA would be motivated to replace an automobile engine in a reference specifically directed towards improving that automobile’s engine with a jet engine—somehow without modifying the automobile’s system—because it would make the automobile “faster.”

Prelim. Resp. 34 (citing Ex. 1005, 4:24–28; Ex. 2003 ¶¶ 89, 98). Patent Owner responds further that “[a] POSITA, as the Federal Circuit’s precedents make clear, would not be motivated to upend a reference’s entire principle of operation and stated purpose in this fashion.” *Id.* (citing *id.* at 26–34).

In response to Petitioner’s allegation “that because Grube uses DMT transmitters and receivers, a POSITA would be motivated to add coaxial cable to Grube’s system,” Patent Owner contends “that ‘DMT transmission schemes’ may generally be used in coaxial cable systems has no bearing on whether Grube’s specific teachings are appropriate for coaxial cable.”

Prelim. Resp. 35. According to Patent Owner, “Grube’s teachings of enabling one-to-many communications between a headend and buildings on

a telephone line are simply not needed in a cable system, which long ago addressed one-to-many communications between a cable operator and cable modems.” *Id.* (citing *id.* at 34–38; Ex. 2003 ¶ 100).

In addition, Patent Owner contends that the fact “that two references may have some technological overlap does not substitute for a motivation to combine.” Prelim. Resp. 35–36 (citing *PersonalWeb Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 993-994 (Fed. Cir. 2017); *Securus*, 701 F. App’x. at 977; *Johns Manville*, IPR2018-00827, Paper 9 at 10-11, 16-17 (Oct. 16, 2018)). Patent Owner contends further that “[i]n the end, Petitioner has proposed combining two fundamentally different systems for no reason other than that the modification or combination would allegedly meet the claims” and that “[i]t is well-settled that obviousness is not established merely because the ‘elements of the claimed invention were independently known in the prior art.’” *Id.* at 36–37 (citing *Metalcraft of Mayville, Inc. v. Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017); *Virtek Vision Int’l ULC v. Assembly Guidance Sys., Inc.*, 97 F.4th 882, 887 (Fed. Cir. 2024). In other words, Patent Owner contends that Petitioner’s proposed combination is based on improper hindsight reasoning. *See id.* at 36–37.

We agree with Patent Owner that Petitioner has not adequately explained why a person of ordinary skill in the art would have modified Grube to use broadband coaxial cable network instead of a twisted-pair telephonic system for the reasons discussed above. In particular, we agree that Petitioner’s reasoning is based on improper hindsight.

c. Obviousness Based on the Combined Teachings of Grube and Matsumoto and Obviousness Based on the Combined Teachings of Grube, Coiffi, and Matsumoto

Turning to the proposed combination of Matsumoto with the “Grube(-

Cioffi)⁸ combination, Petitioner asserts that

To the extent that Patent Owner asserts that Grube(-Cioffi) does not render obvious the transmission of the claimed ‘common bit-loading modulation scheme,’ a POSITA would have been motivated to look to another reference, like Matsumoto, to determine how Grube’s secondary sites (or Cioffi’s remote modems) would learn of the “LCD outbound control channel bit loading table” from Grube to enable effective data transmissions.”

Pet. 75–76 (citing Ex. 1003 ¶¶ 265–266). According to Petitioner, “Matsumoto recognizes that ‘mapping information’ may be provided to ‘all the communication devices simultaneously’ to allow said devices to operate ‘based upon the mapping information’” and “[l]ike Grube’s ‘LCD outbound control channel bit loading table,’ the ‘mapping information’ also contains the commonly-used number of bits assigned to each carrier channel.” *Id.* at 76 (citing Ex. 1007, 5:9–14; Ex. 1003 ¶ 267). Thus, Petitioner asserts that a person of ordinary skill in the art would have been motivated “to incorporate this disclosure in Matsumoto into Grube(-Cioffi) to render obvious the simultaneous transmission of the ‘LCD outbound control channel bit loading table’ in Grube(-Cioffi)” “because a POSITA would have understood that Matsumoto’s method of transmitting its ‘mapping information’ to all the other communication devices simultaneously would ensure efficient use of the transmission channels by avoiding duplicative transmissions.” *Id.* (citing Ex. 1003 ¶267).

Petitioner’s assertions regarding Matsumoto’s teachings do not cure

⁸ We use Petitioner’s shorthand for its challenges based on the combined teachings of Grube and Matsumoto and based on the combined teachings of Grube, Cioffi, and Matsumoto. Pet. 75.

the deficiencies in Petitioner's reasoning in support of its proposed modifications in Grube(-Cioffi) discussed in Sections II.D.4.a–b above. Accordingly, Petitioner's reasoning in support of its challenges based on the combined teachings of Grube and Matsumoto (Ground 3A) and the combined teachings of Grube, Cioffi, and Matsumoto (Ground 3B) do not adequately explain why a person of ordinary skill in the art would have made the proposed modifications and combinations.

5. Conclusion For Claims 29–31 and 34–36

For the reasons discussed above, Petitioner's reasoning in support of its challenges to claims 28–31 and 34–36 lack rational underpinning, and therefore cannot support a determination that claims 28–31 and 34–36 are unpatentable on any of the grounds set forth in the Petition.

III. CONCLUSION

For the foregoing reasons, we have determined that Petitioner has not established a reasonable likelihood of prevailing with respect to any claim. Thus, we do not institute an *inter partes* review.

IV. ORDER

Accordingly, it is:

ORDERED that the Petition is *denied*, and no trial is instituted.

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