

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC. and AMAZON WEB SERVICES, INC.,¹
Petitioner,

v.

ZIKLAG IP LLC,
Patent Owner.

IPR2025-00700
Patent 6,182,128 B1

Before HUNG H. BUI, SCOTT A. DANIELS, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

BUI, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)
Denying Petitioner's Motion to Strike
37 C.F.R. § 42.64(c)

¹ Amazon Web Services, Inc. filed a petition and a motion for joinder in IPR2026-00047 and has been joined as a petitioner in this proceeding.

I. INTRODUCTION

A. Background

Apple Inc. (“Petitioner”) filed a Petition (Paper 2 (“Pet.”)) requesting *inter partes* review of claims 1–4, 6, 9–14, and 17 (“the challenged claims”) of U.S. Patent No. 6,182,128 B1 (Ex. 1001, “the ’128 patent”).² Ziklag IP LLC (“Patent Owner”) filed a Preliminary Response. (Paper 7, “Prelim. Resp.”). We instituted the petitioned review (Paper 8, “Inst. Dec.”).

Patent Owner filed a Patent Owner Response (Paper 11, “PO Resp.”) to oppose the Petition. Petitioner filed a Reply (Paper 14, “Pet. Reply”) to the Patent Owner Response. Patent Owner filed a Sur-reply (Paper 15, “PO Sur-reply”) to the Reply.

Petitioner filed a Motion to Strike a Portion of Patent Owner’s Sur-reply (Paper 20, “Motion to Strike”). Patent Owner filed an Opposition to Petitioner’s Motion to Strike (Paper 21, “Opp.”).

² For utility patents filed after June 7, 1995, the patent term generally expires 20 years from the date the application was filed. The ’128 patent was filed on March 5, 1998, issued on January 30, 2001, and therefore expired on March 5, 2018. Under 35 U.S.C. § 286, Patent Owner (Ziklag IP LLC) cannot recover for any alleged infringement committed “more than six years prior to the filing of [its] complaint.” Thus, the last date on which any entity could have properly filed a complaint alleging infringement of the ’128 patent was March 5, 2024, six years after the patent expired. Ex. 1016, 1. Patent Owner’s predecessor, Touchmusic Entertainment LLC filed its initial complaint timely on March 2, 2024. Pet. 74; Ex. 1016, 1. However, Touchmusic’s corporate status was suspended from August 1, 2014 to April 12, 2024, but allegedly assigned the ’128 patent to Patent Owner on April 18, 2024. Pet. 74; Ex. 1016, 1–2. In the District Court, Apple has argued that Patent Owner’s claims are time-barred. Ex. 1016, 2. For purposes of this Decision, we assume Touchmusic’s alleged assignment of the ’128 patent to Patent Owner was proper, but will defer to the District Court’s ruling accordingly.

Pursuant to our Order (Paper 23) for additional briefing to address the claim construction of the term “substantially real time,” Petitioner and Patent Owner filed Claim Construction Briefs. Paper 24 (Petitioner’s Claim Construction Brief); Paper 25 (Patent Owner Response to Petitioner’s Claim Construction Brief).

We conducted an oral hearing on June 17, 2026. A transcript has been entered into the record (Paper 28, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6(b)(4) and § 318(a). This Decision is a final written decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of claims 1–4, 6, 9–14, and 17 of the ’128 patent. Petitioner has the burden of proving unpatentability of a claim by a preponderance of the evidence. 35 U.S.C. § 316(e).

Based on the complete record, we determine Petitioner has shown by a preponderance of the evidence that claims 1–4, 6, 9–14, and 17 of the ’128 patent are unpatentable. We also *deny* Petitioner’s Motion to Strike part of Patent Owner’s Sur-Reply (Paper 20).

B. Related Proceedings

The parties indicate the following as matters currently or previously involving the ’128 patent: *Ziklag IP LLC v. Netflix, Inc.*, 1-24-cv-01789 (N.D. Ill.); *Touchmusic Entertainment LLC v. Amazon Web Services, Inc.*, 1-24-cv-01786 (N.D. Ill.); and *Touchmusic Entertainment LLC v. Apple Inc.*, 1-24-cv-01787 (N.D. Ill.). Pet. 79; Paper 4, 2.

C. The ’128 Patent (Ex. 1001)

The ’128 patent is titled “Real-Time Music Distribution Systems.” Ex. 1001, code (54). The ’128 patent “relates to systems connected in a network, such as cable television and telephone systems,” particularly

“systems for distributing information, such as video-on-demand or pay-per-view systems.” *Id.* at 1:5–9. Additionally, the ’128 patent “relates to methods and apparatus for distributing data files, such as music tracks, over existing telecommunication (e.g., cable, telephone, or satellite) networks to subscribers [users] in response to user requests.” *Id.* at 1:9–13. “[S]elected audio/video material is sent [to the subscriber] over any one of several existing communication channels ‘in a fraction of real time.’” *Id.* at 2:1–4.

For example, selected music (audio file) may be played back to a subscriber (user) in “either [1] real time or [2] at a predetermined time in the future.” *Id.* at 2:26–30. In other words, the ’128 patent describes two distinct ways selected music (audio files) may be delivered and played back to a user: (1) in “real time” so the user can immediately begin playing the audio without waiting, or alternatively, (2) by downloading and playing later. *Id.* at 2:26–29, 6:24–29. For the “real time” option, the ’128 patent explains that the user system “receives and decodes the requested files . . . for an immediate audio playback on the speakers.” *Id.* at 6:24–27. In contrast, for the download and play option, “the user needs to download the selection; after the downloading is complete, the user may listen to the selection by playing it back.” *Id.* at 1:45–49.

Figure 1, reproduced below, shows “a schematic view of a system for distributing data files, such as digitized music tracks.” Ex. 1001, 3:19–20.

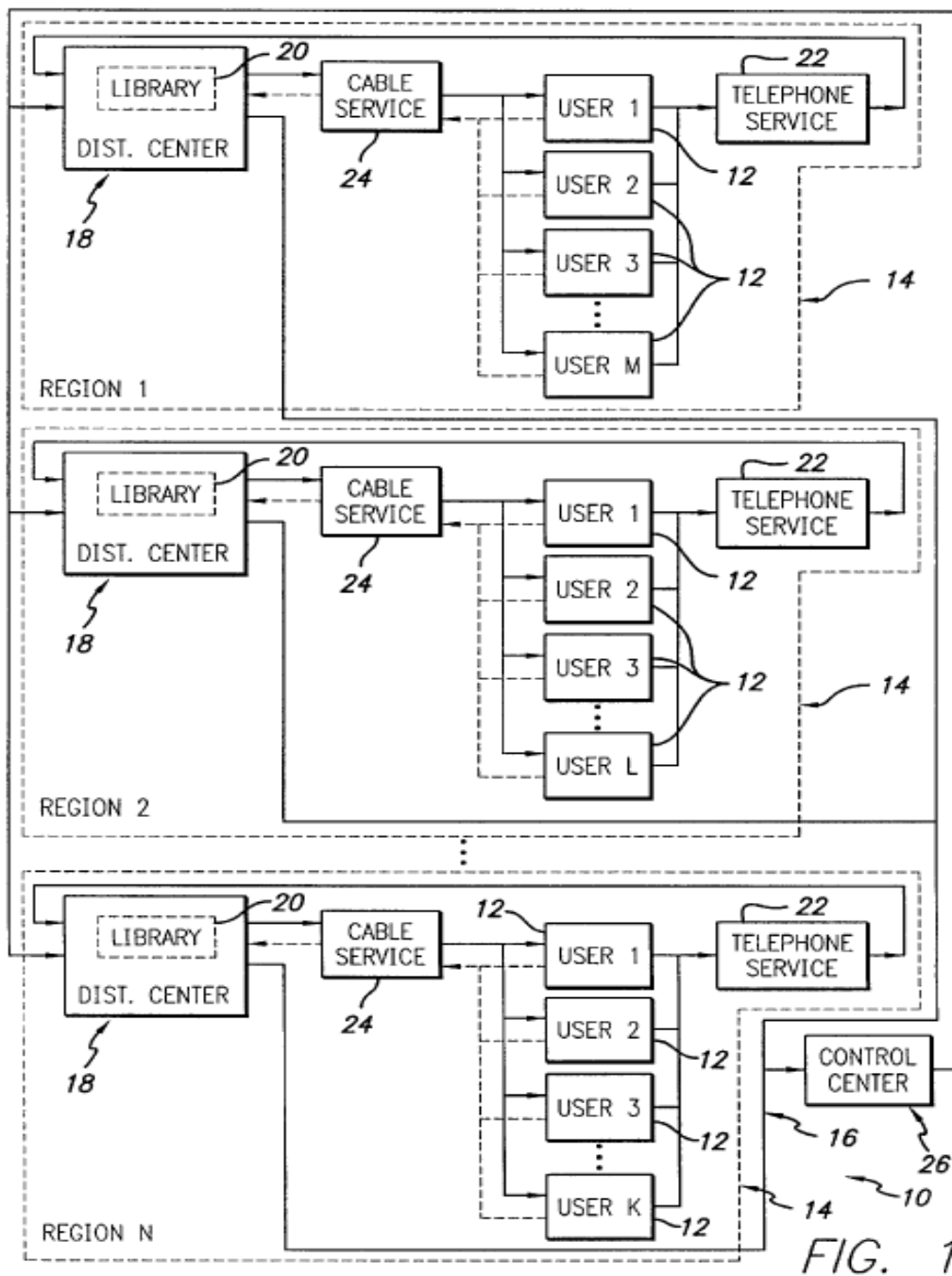


Figure 1, reproduced above, depicts distribution system 10 comprises a number of regional networks 14, each including distribution center 18 and a number of connected users 12. *Id.* at 3:34–38. Each distribution center 18 includes library 20 for storing data files, such as digitized music tracks. *Id.*

at 3:38–40. In operation, user 12 in a particular region may send a request for a data file, for example, a music track, through existing infrastructure, such as telephone service 22 or cable service 24 to distribution center 18 in that region. *Id.* at 3:41–47. If the requested data file is located in regional library 20, regional distribution center 18 transmits the file to user 12; otherwise, regional distribution center 18 routes the request to control center 26, which “determines whether the requested data file is located in the libraries 20 in the other regional networks 14 and, if so, retrieves and routes the requested file to the user.” *Id.* at 3:48–61.

D. Challenged Claims

Petitioner challenges claims 1–4, 6, 9–14, and 17 of the ’128 patent. Pet. 6, 14. Of the challenged claims, claims 1, 2, and 12 are independent. Independent claims 1 and 2, reproduced below with disputed limitations emphasized, are illustrative.³

1. [1.0] A system for distributing digital audio files in substantially real time to users connected to a plurality of satellite or cable TV networks, said system comprising:

[1.1] a) a plurality of private distribution centers, each including:

[1.1.1] 1) a network interface including an input and an output for connecting to one of the satellite or cable TV networks;

[1.1.2] 2) a library including a plurality of digital audio files;

[1.1.3] 3) a library interface including an input and an output connected to said library; and

³ We use a similar numbering (in italics, *supra*) of the claim limitations as the Petition. See Pet. 23–48 (numbering for the limitations of independent claim 1), 52–59 (numbering for the limitations of independent claim 2).

[1.1.4] 4) a processor connected to said network interface and said library interface, said processor for:

[1.1.4.1] (a) displaying to a user a menu of said audio files;

[1.1.4.2] (b) receiving requests from a user for a plurality of said digital audio files and a user address;

[1.1.4.3] (c) retrieving said requested digital audio files from said library via said library interface;

[1.1.4.4] (d) *sequentially transmitting said requested digital audio files in substantially real time to said user through one of the satellite or cable TV networks via said output of said network interface; and*

[1.1.4.5] (e) *recording the digital audio files requested by said user and said user address in a data base; and*

[1.2] b) *a central controller connected to said network interface of each of said distribution centers for routing digital audio data files between said distribution centers.*

2. [2.0] A system for distributing data files to users connected in a plurality of independent networks, said system comprising:

[2.1] a) a plurality of distribution centers, each including:

[2.1.1] 1) a network interface including an input and an output for connecting to a single one of the networks;

[2.1.2] 2) a library including a plurality of data files;

[2.1.3] 3) a library interface including an input and an output connected to said library; and

[2.1.4] 4) a processor connected to said network interface and said library interface, said processor for:

[2.1.4.1] (a) receiving a request from a user via said input of said network interface, said request

including information on one or more data files and a user address;

[2.1.4.2] (b) determining which of said requested data files are available in said library (“available requested data files”), and which of said requested data files are unavailable in said library (“unavailable requested data files”) and [2.1.4.3] for each of said available requested data files, retrieving said available requested data file from said library via said library interface; and [2.1.4.4] for each of said unavailable requested data files, sending a file import request to a central controller requesting said unavailable requested data files and receiving said unavailable requested data files through said network interface;

[2.1.4.5] (c) transmitting said requested data files to said single one of the networks via said output of said network interface; and

[2.1.4.6] (d) recording request information indicative of said requested data file and said user address; and

[2.2] b) *a central controller directly connected to said network interface of each of said distribution centers for:*

[2.2.1] 1) receiving file import requests from a requesting distribution center, said file import requests including information relating to requested data files;

[2.2.2] 2) *searching the library within at least one other of said distribution centers to locate at least one requested data file of said requested data files; and*

[2.2.3] 3) *instructing said other distribution center to retrieve and transmit the requested data file that was located therein to said requesting distribution center.*

Ex. 1001, 7:22–8:26.

E. The Asserted Grounds

Petitioner asserts the following challenge to patentability (Pet. 14):

Claim(s) Challenged	35 U.S.C. §⁴	Reference(s)/Basis	Ground name
1–4, 6, 9–14, 17	103(a)	Yurt, ⁵ Logan ⁶	1

To support these challenges, Petitioner relies on the testimony of Dr. Andrew B. Lippman. *See* Ex. 1003; *see also* Ex. 1017 (transcript of the deposition of Dr. Ian McCulloh taken on March 10, 2026), Ex. 1018 (transcript of the deposition of Loren Johnson taken on March 11, 2026).

Patent Owner supports its Response with the Declarations of Loren C. Johnson (Ex. 2007) and Dr. Ian McCulloh (Ex. 2009).

II. OBVIOUSNESS ANALYSIS

A. Principles of Law

Under 35 U.S.C. § 103(a), “[a] patent claim is unpatentable 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.” *See KSR Int’l Co. v. Teleflex Inc.*, 550

⁴ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the challenged claims of the ’128 patent have an apparent effective filing date before March 16, 2013, the pre-AIA version of § 103 applies.

⁵ US 5,132,992 to Yurt et al., filed on January 7, 1991, and issued on July 21, 1992 (Ex. 1005). Petitioner asserts that Yurt qualifies as prior art under 35 U.S.C. § 102(b) against the ’128 patent. Pet. 14.

⁶ US 5,732,216 to Logan et al., filed Oct. 2, 1996, issued Mar. 24, 1998 (Ex. 1006). Petitioner asserts that Logan qualifies as prior art under 35 U.S.C. § 102(e) against the ’128 patent. Pet. 14.

U.S. 398, 406 (2007) (similar language). The question of obviousness involves resolving 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 when presented (4) objective evidence of non-obviousness (not presented here). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. An obviousness determination based on a combination of references requires finding “both [1] ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and [2] that the skilled artisan would have had a reasonable expectation of success in doing so.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016).

A reason to combine may be found explicitly or implicitly in market forces; design incentives; the “interrelated teachings of multiple patents”; “any need or problem known in the field of endeavor at the time of invention and addressed by the patent”; and the background knowledge, creativity, and common sense of the person of ordinary skill.

Ericsson, Inc. v. Intellectual Ventures I LLC, IPR2014-00527, Paper 41, slip op. at 27–28 (May 18, 2015). However, an assertion of obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418; *In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (a finding of a motivation to combine “must be supported by a ‘reasoned explanation’”).

In an *inter partes* review, a petitioner bears the burden of persuasion to prove “unpatentability by a preponderance of the evidence.” *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (quoting 35 U.S.C. § 316(e)). This burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware*, 800 F.3d at 1378 (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–1327 (Fed. Cir. 2008)). Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016); *see also* 35 U.S.C. § 312(a)(3); 37 C.F.R. § 42.104(b)(4) (2024) (“The petition must specify where each element of the claim is found in the prior art patents or printed publications relied upon.”).

B. Level of Ordinary Skill in the Art

Determining whether an invention would have been obvious under 35 U.S.C. § 103 requires resolving the level of ordinary skill in the pertinent art at the time of the effective filing date of the claimed invention. *Graham*, 383 U.S. at 17. The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain factors, including: “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Best Med. Int’l, Inc. v. Elekta Inc.*, 46 F.4th 1346, 1353 (Fed. Cir. 2022). The prior art of record

may also reflect the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Petitioner, relying upon its declarant, Andrew B. Lippman, PhD (Ex. 1003), contends that a person of ordinary skill in the art (POSITA) “would have a bachelor’s degree in electrical engineering, computer science, computer engineering, or equivalent training, and approximately two years of experience working in the field of networked systems for distributing data files from one or more databases,” and that “[l]ack of professional experience can be remedied by additional education, and vice versa.” Pet. 12–13 (citing Ex. 1003 ¶¶ 20–22).

Prior to institution, Patent Owner did not challenge Petitioner’s proffered level of ordinary skill in the art or dispute Petitioner’s expert, Dr. Lippman’s qualification to express opinions regarding the technology involved in this proceeding. *See generally* Prelim. Resp. As such, we adopted Petitioner’s undisputed proposal as reasonable and consistent with the cited prior art and the disclosure of the ’128 patent in this proceeding. Inst. Dec. 11 (citing *Okajima*, 261 F.3d at 1355 (explaining that specific findings regarding ordinary skill level are not required “where the prior art itself reflects an appropriate level and a need for testimony is not shown”).

Post institution, Patent Owner argues that “Petitioner uses a framing that is too narrow and misdirected because the ’128 patent is not merely about databases,” and that Petitioner’s referenced “two years of experience in generic networked file distribution does not reasonably reflect the technical realities Petitioner assumes.” PO Resp. 22. Specifically, Patent Owner, relying upon its declarant, Loren C. Johnson, a named co-inventor of

the '128 patent (Ex. 2007), submits that “[a] more appropriate definition of a POSITA relevant to the subject matter of the '128 patent” is:

someone with experience in: (i) cable/satellite delivery architectures (including hybrid fiber-coax realities); (ii) distributed media delivery systems, and (iii) multi-region orchestration/routing (not just “storing files in databases”). Employing this definition of a POSITA, Petitioner’s proposed “trivial” combinations would not be considered “trivial” at the time of the invention claimed by the '128 patent and would not have been considered plausible to the extent Petitioner suggests or implies.

PO Resp. 22 (citing Ex. 2007 ¶ 23). However, neither Patent Owner nor its declarant, Mr. Johnson, disputes (1) Petitioner’s proposed educational background or (2) Petitioner’s proffered number of years of experience. PO Resp. 22; Ex. 2007 ¶ 23.

Based on the record before us, we are unpersuaded that Patent Owner’s “proposed level of skill” is appropriate in this proceeding for reasons discussed below.

First, neither the term “cable/satellite delivery architectures (including hybrid fiber-coax realities)” nor the term “multi-region orchestration/routing” proposed by Patent Owner is described in the relevant art at the time of the invention (during the 1997–1998 time frame), including, for example: (1) the background of the '128 patent (Ex. 1001, 1:18–2:34, Ex. 1003, ¶¶ 27–35 “on-demand music delivered over the Internet using cable and/or phone lines was already in commercial use, with the compression necessary to supply data files, such as audio, with distribution networks”); (2) the cited prior art record, including, but not limited to: Yurt (Ex. 1005), Logan (Ex. 1006), Payton (Ex. 1007), Verbiest (Ex. 2001), McCalley (Ex. 2002), and Martin (Ex. 2004); and (3) the

prosecution history of the subject matter of the '128 patent (Ex. 1002, 55–124).

For example, Yurt (Ex. 1005; issued on July 21, 1992) discloses “[a] system of distributing video and/or audio information,” shown in Figure 1, in which “compressed and encoded audio and/or video information is sent over standard telephone, cable or satellite broadcast channels to a receiver specified by a subscriber of the service, preferably in less than real time.” *Id.* at code (57).

Logan (Ex. 1006, issued on March 24, 1998) discloses an “[a]n audio program and message distribution system [shown in Figure 1] in which a host system organizes and transmits program segments to client subscriber locations [via the Internet].” *Id.* at code (57).

Verbiest (Ex. 2001; issued on August 27, 1996) discloses a video on demand network, shown in Figure 1, including (1) central server CS comprised of a video library of audio/video (shown in Figure 3), and (2) a plurality of locally distributed video servers DS1–DS2 to convey audio/video information to (3) user stations US12–13, US21–US2N, via backbone network BBN. *Id.* at 5:14–20, 6:24–7:25.

McCalley (Ex. 2002; issued on May 12, 1992) discloses an interactive multi-media presentation and communication system, shown in Figure 1, in which all the video and audio information is stored, processed, and transmitted to the locality of the subscriber in digital form. *Id.* at 1:51–56.

The teachings of these prior art references confirm that the appropriate level of ordinary skill in the art, as proposed by Petitioner, should have (1) at least “a bachelor’s degree in electrical engineering, computer science, computer engineering, or equivalent training,” and (2) “approximately two

years of experience working in the field of networked systems for distributing data files from one or more databases,” but (3) the “[l]ack of professional experience can be remedied by additional education, and vice versa.” Pet. 12–13 (citing Ex. 1003 ¶¶ 20–22); *see Okajima*, 261 F.3d at 1355.

Second, as correctly recognized by Petitioner, Patent Owner’s “proposed level of skill appears higher than Petitioner’s proposed level” (Pet. Reply 5–8) but Patent Owner does not meaningfully dispute Petitioner’s arguments in this regard. *See* PO Sur-reply 16.

We, therefore, maintain our initial determination of the level of ordinary skill in the art, because Petitioner’s proposed level of skill is more reasonable and consistent with the cited prior art and the disclosure of the ’128 patent. Thus, a person of ordinary skill in the art in this proceeding “would have a bachelor’s degree in electrical engineering, computer science, computer engineering, or equivalent training, and approximately two years of experience working in the field of networked systems for distributing data files from one or more databases,” but that “[l]ack of professional experience can be remedied by additional education, and vice versa” as proposed by Petitioner. Pet. 12–13 (citing Ex. 1003 ¶¶ 20–22).

We note, however, that neither party’s proposal would ultimately affect our determination of obviousness based on Yurt and Logan for reasons to be discussed herein below.

C. Testimonial Evidence

“To offer expert testimony from the perspective of a skilled artisan in a patent case—like for claim construction, validity, or infringement—a witness must at least have ordinary skill in the art. Without that skill, the

witness’ opinions are neither relevant nor reliable.” *Kyocera Senco Indus. Tools Inc. v. ITC*, 22 F.4th 1369, 1376–77 (Fed. Cir. 2022). All that is required “to be qualified to offer expert testimony on issues from the vantage point of an ordinarily skilled artisan in a patent case” is that “an expert must at a minimum possess ordinary skill in the art.” *Id.* at 1377.

Patent Owner relies on the testimony of (1) Mr. Loren C. Johnson, who is a co-inventor of the ’128 patent (Ex. 2007), and (2) Dr. Ian McCulloh, as an expert, who has a Ph.D. in Computer Science from Carnegie Mellon University and extensive experience, including “hands-on deployment and academic research in distributed systems operating under real-world constraints” (Ex. 2009, Ex. 2010) to support its Response (Paper 11).

Petitioner disputes the qualifications of both Mr. Johnson and Dr. McCulloh. Specifically, Petitioner argues “[n]either Mr. Johnson nor Dr. McCulloh meets Patent Owner’s proposed level of skill” and qualifies to testify as a person of ordinary skill in the art (POSITA) and, therefore, their testimony should be given little or no weight. Pet. Reply 6–8. Petitioner also argues that Mr. Johnson and Dr. McCulloh’s testimony suffers from additional deficiencies. Pet. Reply 6.

For example, Petitioner argues Mr. Johnson (1) has direct financial interest and substantial bias because he is a named co-inventor and the “sole beneficial owner and controlling assignee of the ’128 patent” (*id.* at 6–7 (citing *Apple, Inc. v. Motorola, Inc.*, 757 F. 3d 1286, 1321–22 (Fed. Cir. 2014) (“in the context of a party testifying as his own expert, ‘the trier of fact should be able to discount for so obvious a conflict of interest’”); *see also* Ex. 2007, ¶ 8); and (2) admitted “he is ‘not an engineer or an expert’ in

cable/satellite architectures, and had no experience in designing such systems, before or after 1998.” *Id.* at 7 (citing Ex. 1018, 131:10, 133:9–18).

During an oral hearing on July 17, 2026, Patent Owner’s counsel also admitted that Mr. Johnson “was more of the marketing and music background person” and would not qualify as an expert under PO’s proposed level of skill in the art, as reproduced below:

Q. So under your own proffered level of one skill in the art, the co-inventor, Mr. Johnson, wouldn't qualify as an expert in this case, right?

A. I guess I'd have to acknowledge that, Your Honor.

Q. Yeah. I think you might be better off with Petitioner's proposal.

A. Thank you, Your Honor.

Paper 28, 48:6–21.

Petitioner also argues Dr. McCulloh admitted that (1) “he had no experience in cable and satellite-delivery architectures in the late 1990’s timeframe,” stating that he “probably started getting into [cable and satellite] around 2005”; and (2) “he had no experience with distributed-media delivery systems in the relevant timeframe.” *Id.* at 7–8 (citing Ex. 1017, 172:14–173:2, 176:18–177:2, 39:2–42:20).

However, Petitioner’s arguments against Mr. Johnson and Dr. McCulloh’s qualifications are grounded upon Patent Owner’s “proposed level of skill” (which we rejected) that is “higher than Petitioner’s proposed level” (which we adopted for this proceeding) and focus on their level of skill in the late 1990s timeframe (time of the invention), but there is no time requirement on when an expert acquired the requisite level of skill in the art. *Osseo Imaging, LLC v. Planmeca USA Inc.*, 116 F. 4th 1335, 1340–1341 (declining to add a timing requirement to the minimum qualifications necessary to offer expert testimony from the perspective of a person of

ordinary skill in the art). “An expert need not have acquired that skill level prior to the time of the invention to be able to testify *from the vantage point* of a person of ordinary skill in the art. Rather, an expert can acquire the necessary skill level later and develop an understanding of what a person of ordinary skill knew at the time of the invention. In practice, the fact that the expert was not a person of ordinary skill at the time of the invention may well be used during cross examination to undermine the credibility of the expert.” *Id.*

Under Petitioner’s proposed level of skill (which we adopted), Dr. McCulloh is indeed qualified to testify in this proceeding because he has a Ph.D. in Computer Science from Carnegie Mellon University and extensive experience, including “hands-on deployment and academic research in distributed systems operating under real-world constraints” (Ex. 2009, Ex. 2010). *See* Ex. 2010 (CV) (BSIE, MS Comp. Sci, PhD Comp. Sci, Lieutenant 1994-1999, 10th Mountain Division (“led the army’s first tactical deployment of a distributed computing system”)); Ex. 2009 ¶¶ 6–10.

Although Dr. McCulloh’s declaration does not include any searching or analysis of patent literature including Yurt or Logan as part of his analysis of the “background” state of the art, as correctly recognized by Petitioner (Pet. Reply 7–8 (citing Ex. 1017, 74:18–75:14; Ex. 2009 ¶ 3)), we are persuaded that Dr. McCulloh is qualified to address Dr. Lippman’s portrayal of the architecture disclosed in the ’128 patent, as advanced by Patent Owner. Ex. 2009, ¶¶ 3, 5–34; Ex. 2010. Dr. McCulloh does not provide testimony to refute Petitioner’s obviousness analysis based on Yurt and Logan. *See* Ex. 2009.

Mr. Johnson is only offered to refute Petitioner's obviousness analysis based on Yurt and Logan. Ex. 2007 ¶¶ 3, 18, 29. Under Petitioner's proposed level of skill (which we adopted), Mr. Johnson, who is a co-inventor of the '128 patent, is qualified to testify in this proceeding, especially, when his declaration states that (1) he is a POSITA "with more than 30 years of experience building technology-driven media and content-distribution systems" and (2) he "was actively involved in the development and deployment of digital music and video distribution technologies" since the mid-1990's, including "real-time and near-real-time electronic delivery of media content." Ex. 2007 ¶¶ 9–10, 14, 16. Certainly, "[t]he inventor himself may qualify as an expert and testify what his claims would mean in the relevant art." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 991 (Fed. Cir. 1995).

The fact that Johnson is a co-inventor is not in and of itself sufficient to discredit his testimony. "That an expert may have a bias or self-interest towards a party on whose behalf he or she is offering testimony, without more, generally does not require disqualifying the expert so long as the expert appears to be providing an objective analysis. Bias goes to the weight of the testimony, not necessarily its admissibility." *Apple, Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1321–22 (Fed. Cir. 2014). Nevertheless, the Board has broad discretion to assign weight to be accorded expert testimony. *Yorkey v. Diab*, 601 F.3d 1279, 1284 (Fed. Cir. 2010) ("[T]he Board was well within its discretion to give more credibility to [one expert over another] unless no

reasonable trier of fact could have done so.”); *see also* CTPG⁷ 34–36, Section I.G.

We are capable of discerning from the testimony and the evidence presented whether Dr. McCulloh’s testimony or Mr. Johnson’s testimony should be entitled to any weight. *Elbit Sys. of Am., LLC v. Thales Visionix, Inc.*, 881 F.3d 1354, 1358 (Fed. Cir. 2018) (“The [Patent Trial and Appeal Board (‘PTAB’)] [i]s entitled to weigh the credibility of the witnesses.” (citation omitted)); *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1041 (Fed. Cir. 2017) (“To the extent [a party] challenges the PTAB’s factual findings ... the PTAB is permitted to weigh expert testimony and other record evidence and, in so doing, rely on certain portions of an expert’s declaration while disregarding others.”). In the analysis that follows, when applicable, we weigh the credibility of Dr. McCulloh’s testimony or Mr. Johnson’s testimony, including with respect to Patent Owner’s arguments regarding Dr. McCulloh’s testimony to refute Mr. Lippman’s portrayal of the architecture disclosed in the ’128 patent, and Mr. Johnson’s testimony to refute Petitioner’s obviousness analysis based on Yurt and Logan, and provide our reasons, therefore.

D. Claim Construction

In *inter partes* reviews, the Board construes claims using the same claim construction standard employed in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (2023). Under the principles set forth by the Federal Circuit, the “words of a claim ‘are generally given their ordinary

⁷ Patent Trial and Appeal Board Consolidated Trial Practice Guide (CTPG) (Nov. 2019) (*available at* <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf?MURL=Tri alPracticeGuideConsolidated>).

and customary meaning,” as would be understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining [1] the claim language itself, [2] the written description, and [3] 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 1312–1317). Typically, it is the use of the words in the context of the claims and the written description that accurately reflects the “ordinary” and the “customary” meaning of the words in the claims. *Ferguson Beauregard/Logic Controls, Div. of Dover Res., Inc. v. Mega Sys., LLC*, 350 F.3d 1327, 1338 (Fed. Cir. 2003).

The claims, of course, do not stand alone. Rather, they are part of a fully integrated written instrument . . . consisting principally of a specification that concludes with the claims. For that reason, claims must be read in view of the specification . . . [T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.

Phillips, 415 F.3d at 1315 (internal quotations omitted). As such, the ’128 patent’s specification is the best guide to the meaning of a claim term.

If the claim term is clear from the intrinsic evidence, there is no reason to resort to extrinsic evidence (e.g., expert and inventor testimony, dictionaries, and learned treatises). Only when the meaning of a claim term cannot be determined from intrinsic evidence (because of inconsistencies or otherwise), extrinsic evidence may assist the Board in understanding the

underlying technology, the meaning of terms to one skilled in the art, and how the invention works. *Id.* at 1317–19. However, extrinsic evidence is less reliable and less useful in claim construction than the patent and its prosecution history. *Id.*

In some cases, as here, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. *Id.* at 1314 (internal citations omitted). This means that the words of the claims are given their plain meaning unless that meaning is inconsistent with the specification. *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989).

Consequently, care must be exercised as there is an important distinction between interpreting claims in light of the specification and reading limitations into the claims from the specification. *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). Limitations appearing in the specification but not recited in the claim must not be read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir. 2003) (claims must be interpreted “in view of the specification” without importing limitations from the specification into the claims unnecessarily.)

Prior to institution, neither Petitioner nor Patent Owner proposed construction of any term. Pet. 13; *see generally* Prelim. Resp. Because we only need construe terms “that are in controversy, and only to the extent necessary to resolve the controversy,” we did not construe any claim terms prior to institution. Inst. Dec. 15–16; *see, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the

extent necessary to resolve the controversy.” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Post-institution, Petitioner maintains the position that “no constructions are needed.” Pet. Reply 9; Ex. 1003 ¶ 48. However, Patent Owner proposes clarifications of three terms: (1) “substantially real time” recited in claim 1, (2) “central controller . . . for routing . . . between distribution centers” recited in claim 1, and (3) “central controller’s search/instruction functions” recited in claim 2 but does not provide an explicit construction for these terms. PO Resp. 23 (citing Ex. 2007, ¶¶ 50–51).

Based on the record before us, we determine that no express construction of “substantially real time” and “central controller” is necessary for purposes of this Decision. Instead, Patent Owner’s proposed clarifications of these terms will be addressed in the context of our obviousness analysis based on Yurt and Logan below.

E. Asserted Obviousness of Claims 1–4, 6, 9–14, and 17 Based on Yurt and Logan

Petitioner contends claims 1–4, 6, 9–14, and 17 as rendered obvious by the combination of Yurt and Logan. *See* Pet. 14–73.

Patent Owner argues Petitioner has failed to show that Yurt and Logan, alone or in combination, teach or suggest certain limitations from independent claims 1 and 2 of the ’128 patent—as reproduced below:

- Limitation [1.1.4.4] of Claim 1: “a processor [included at each private distribution center] connected to said network interface and said library interface, said processor for,” *inter alia*, (d) “sequentially transmitting said requested digital audio files in substantially real time to said user through one of the satellite or cable TV networks via said output of said network interface;”

- Limitation [1.1.4.5] of Claim 1: “said processor for,” *inter alia*, (e) “recording the digital audio files requested by said user and said user address in a data base;”
- Limitation [1.2] of Claim 1: “a central controller connected to said network interface of each of said [private] distribution centers for routing digital audio data files between said [private] distribution centers”; and
- Limitations [2.2.2]–[2.2.3] of Claim 2: “a central controller directly connected to said network interface of each of said distribution centers for” *inter alia*, 2) “searching the library within at least one other of said distribution centers to locate at least one requested data file of said requested data files” and 3) “instructing said other distribution center to retrieve and transmit the requested data file that was located therein to said requesting distribution center.”

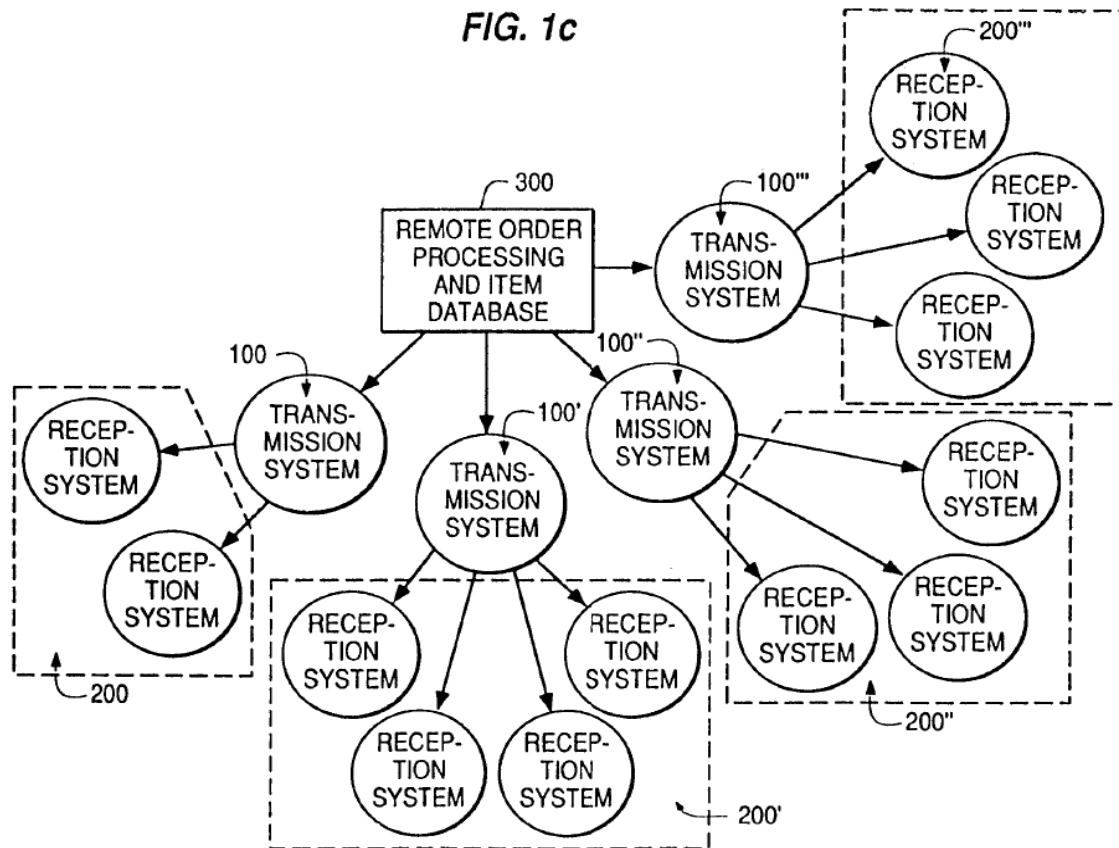
PO Resp. 26–35.

We start our analysis of the ground with a description of the disclosure of Yurt and Logan and then consider the arguments and evidence presented by the parties.

1. Yurt (Exhibit 1005)

Yurt is titled “Audio and Video Transmission and Receiving System.” Ex. 1005, code (54). Yurt discloses “[a] system of distributing video and/or audio information,” [shown in Figure 1] in which “compressed and encoded audio and/or video information is sent over standard telephone, cable or satellite broadcast channels to a receiver specified by a subscriber of the service, preferably in less than real time.” *Id.* at code (57).

Yurt’s Figure 1, reproduced below, shows a “high level block diagram of the transmission and receiving system.” *Id.* at 4:1–2.



Yurt's Figure 1c, reproduced above, depicts transmission and receiving system including remote order and processing and item database 300 in communication with multiple transmission systems 100, 100', 100'' and 100'''. *Id.* at 4:5–9. As shown in Figure 1c, transmission systems 100, 100', 100'' and 100''' are in communication with respective reception systems 200, 200', 200'', and 200''', which in turn are in communication with multiple users (not shown in Figure 1c). *Id.* at 4:7–13.

Yurt's Figure 2b, reproduced below, depicts a block diagram of transmission system 100. Ex. 1005, 5:59–61.

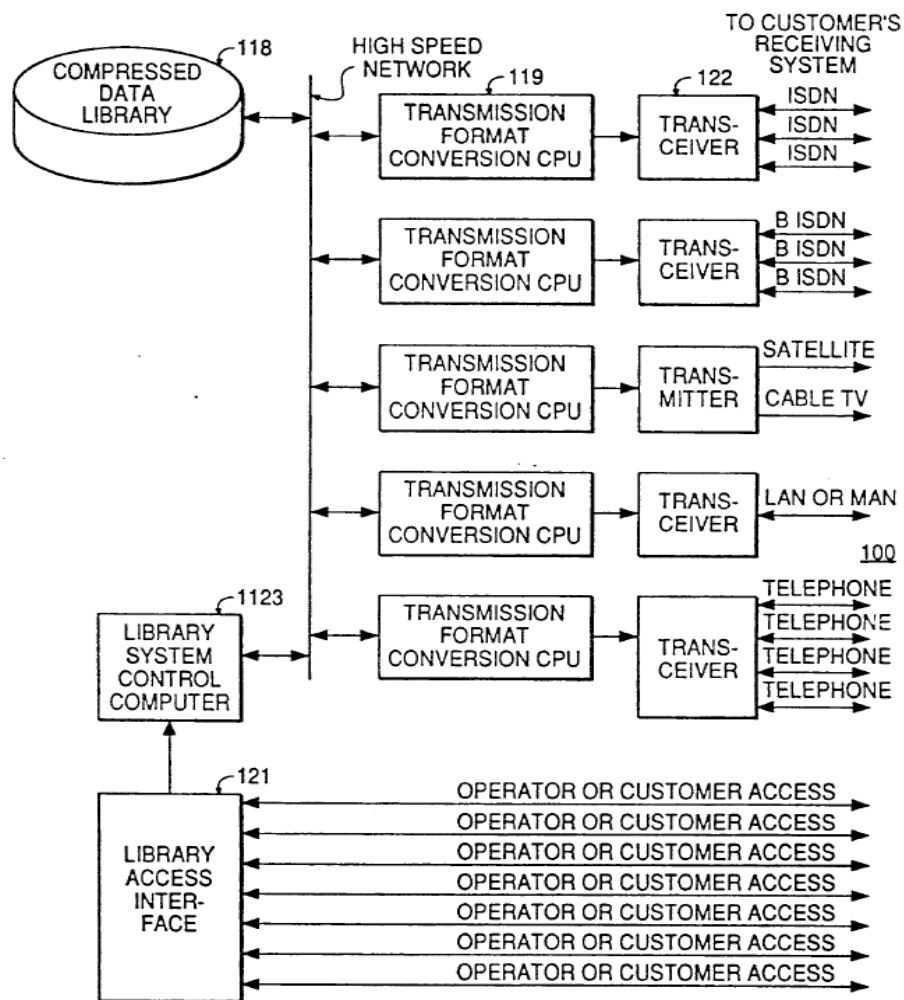


FIG. 2b

Yurt's Figure 2b, reproduced above, depicts transmission system 100 including compressed data library 118, which stores compressed source material such as "television programs, movies, audio recordings, still pictures, files, books," etc. *Id.* at 6:10–19, 10:29–36. A "master item database containing facts regarding items in the compressed data library system" "may reside in the system control computer 1123 where [it] may be . . . updated and kept current to the contents of the compressed data library 118." *Id.* at 11:11–13, 11:54–57. "Other copies of the item database may also be made available to users from the remote order processing and item

database 300 [(shown in Figure 1c above)] which batch processes and downloads user requests to the control computer 1123 of the compressed data library 118.” *Id.* at 11:66–12:2.

A “user may preferably select a desired item by searching the database of available titles in the library system control computer 1123 [shown in Figure 2b] or any remote order processing and item database 300 [shown in Figure 1c].” Ex. 1005, 15:7–10. Then, “the remote order processing and item database 300 [shown in Figure 1c] preferably connects to the compressed data library 118 of choice . . . and communicates with the library system control computer 1123 [shown in Figure 2b].” *Id.* at 15:23–27. A program in library system control computer 1123 manages a transmission queue and controls the distribution of the requested item to the user’s reception system 200. *Id.* at 15:33–37. Transmission system 100 “includes transmitter means 122 [(labeled as a transceiver 122 in Figure 2b)], coupled to the compressed data library 118, for sending at least a portion of a specific file to” reception system 200. *Id.* at 15:61–65, 16:29–61.

Yurt further discloses that “not all items are contained in each of the compressed data libraries 118,” but that “library access interface 121 in the reception system 200” may include a list of available titles in “two modes: local listing of material contained within the library system control computer 1123, and library listing for all available titles which may be received from the available, remotely accessible libraries.” Ex. 1005, 17:44–50, 17:57–59.

2. *Logan (Exhibit 1006)*

Logan is titled “Audio Message Exchange System.” Ex. 1006, code (54). Logan describes “[a]n audio program and message distribution system

in which a host system organizes and transmits program segments to client subscriber locations,” where the host system “organizes the program segments by subject matter and creates scheduled programming in accordance with preferences associated with each subscriber.” *Id.* at code (57).

Logan’s Figure 1, reproduced below, shows “a block schematic diagram of an electronic program and advertising distribution system.” Ex. 1006, 2:55–56.

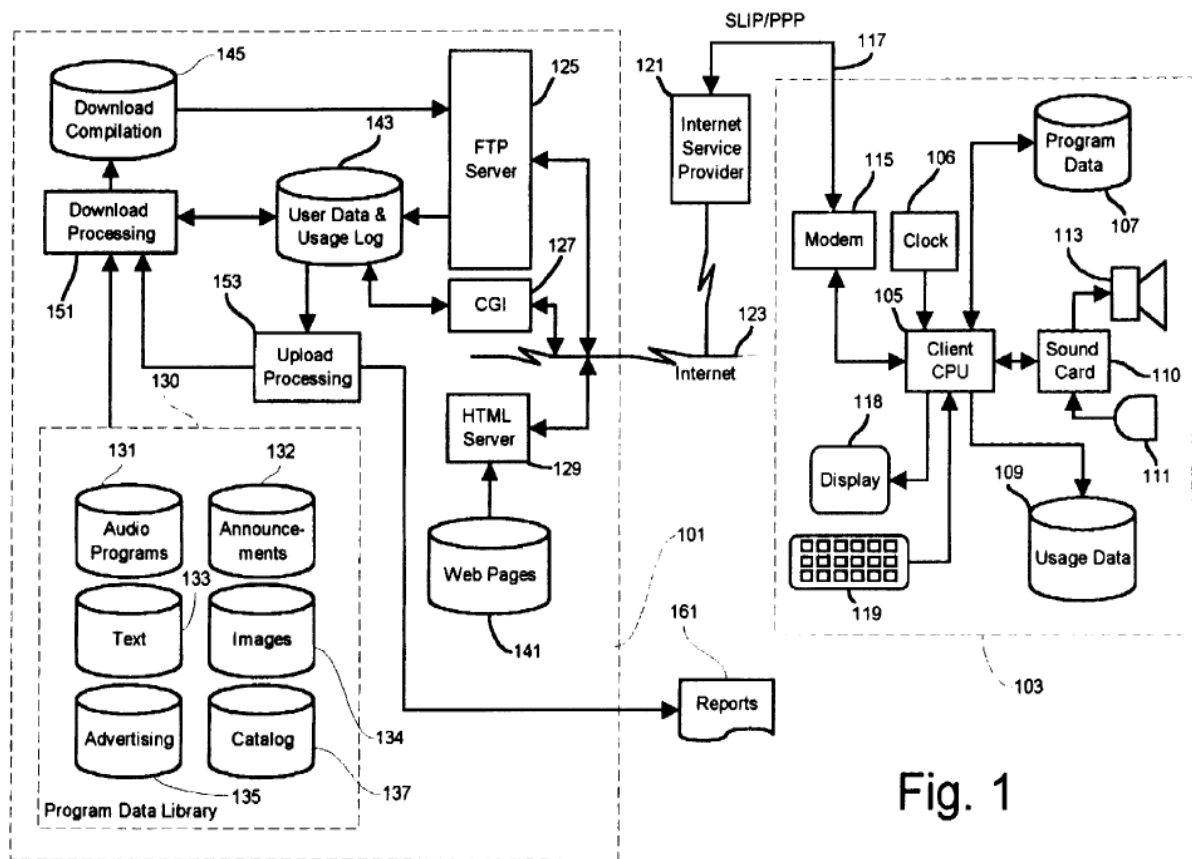


Fig. 1

Logan’s Figure 1, reproduced above, depicts distribution system including host server 101 connected to player 103 (e.g., laptop/desktop), via high-speed Internet link 123. *Id.* at 3:24–4:36. As shown in Logan’s Figure 1, “host server 101 provides [] FTP server interface 125 which provides file

transfer protocol services to the player 103.” *Id.* at 4:40–41. Further, “host server 101 stores and maintains a plurality of data files including a program data library indicated generally at 130,” which may include “compressed audio program segments 131, announcement (‘glue’) segments 132, text program segments 133, image segments 134, advertising segments 135 and program catalog information 137.” *Id.* at 4:46–52. “[H]ost server 101 additionally stores and maintains a user data and usage log database indicated at 143 which stores uploaded usage data received from the store 109 in the player 103 [e.g., laptop/desktop] via the Internet pathway 123 and the FTP server interface 125.” *Id.* at 5:35–39. User data 143 contains “data describing the preferences, demographic characteristics and program selections unique to each subscriber.” *Id.* at 5:39–42. Data in log database 143 is used “for billing [purposes],” and adapting subscriber preferences to actual usage patterns. Ex. 1006, Abstract; Ex. 1003 ¶¶ 59–61.

“Host server 101 periodically transmits a download compilation file 145 to player 103” from “a predetermined FTP download file directory,” where “compilation 145 is previously written to the download directory by a download processing mechanism seen at 151 in the server 101.” Ex. 1006, 5:46–57. In particular, the download processing mechanism 151 “extracts from the library 130 data defining compressed program, advertising, and glue segments, and/or associated text program data, based on selections and preferences made by (or inferred for) the user as specified in the subscriber data and usage log database 143.” *Id.* at 5:46–62. Download compilation file 145 comprises “subscriber and session specific files,” and for an individual playback session, “player 103 downloads the session schedule file and then issues download requests for those identified program segment files

which are not already available in the player's local storage unit 107.” *Id.* at 5:63–6:8.

3. *Analysis of Independent Claim 1*

For the reasons that follow, we are persuaded that Petitioner establishes that the subject matter of independent claim 1 would have been obvious in view of Yurt and Logan. Our limitation-by-limitation analysis of claim 1 is provided below.

*[1.0] “A system for distributing digital audio files in **substantially real time** to users connected to a plurality of satellite or cable TV networks, said system comprising”*

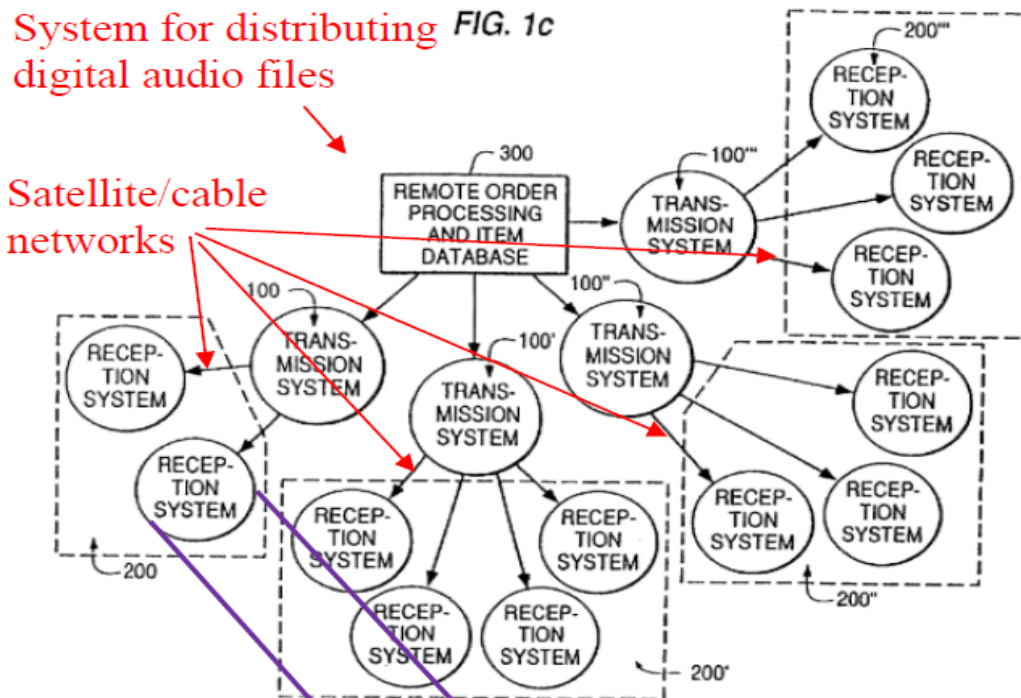
Petitioner presents evidence that Yurt teaches the preamble of claim 1. Pet. 23–27. For example, Petitioner contends Yurt teaches “[a] system of distributing video and/or audio information [i.e., digital audio files],” [shown in Figure 1c, 1f] in which “compressed and encoded audio and/or video information is sent over standard telephone, cable or satellite broadcast channels to a receiver specified by a subscriber of the service, preferably in **less than real time**.” *Id.* at 23 citing (Ex. 1005, code (57), 2:41–47, 4:1–13, 5:66–67, 16:62–68; Ex. 1003, ¶ 76–78. Yurt’s content (digital audio file) is distributed “**in less than real time**” which refers to transmitting the content “**as a fraction of real time**.” Ex. 1005, code (57), 1:66–2:4. Dr. Lippman provides testimony that “less than real time” is even better than real-time, or faster than real-time. Ex.1003, ¶ 79. Petitioner further explains that:

For example, Yurt’s receiving system will “decompress **in real time** the requested material as it is distributed by transmission system 100.” Ex.1005, 4:64–6:9. Yurt’s use of high-bandwidth cable networks for fast transmission of audio files mirrors the disclosure in the ’128 patent and achieves the same result: real-time consumption of audio by the end user. *See* Ex.1001, 2:67-3:2 (“Because of the relatively high bandwidth of existing cable systems, consumers may listen to

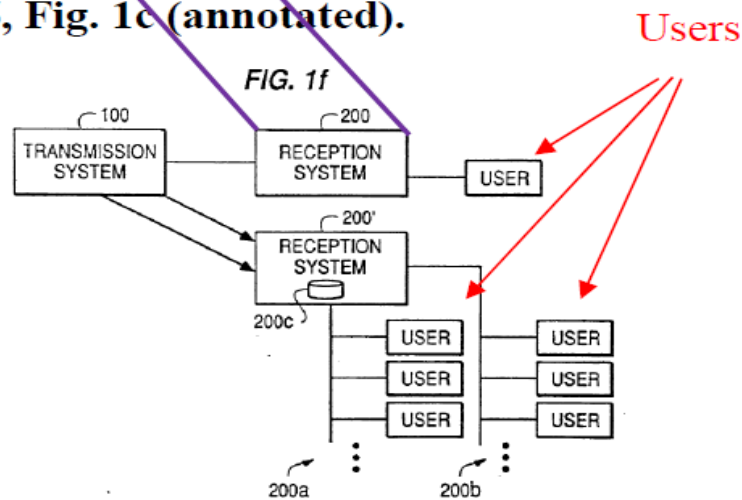
music in full high fidelity and **at real time.**"); Ex.1005, 4:64-5:3;
16:62-68; 5:59-61.

Pet. 26-27 (emphasis added).

Yurt's Figures 1c and 1f, reproduced below with Petitioner's annotations, depict a "high level block diagram of the transmission and receiving system." Ex. 1005, 4:1-2.



Ex.1005, Fig. 1c (annotated).



Ex.1005, Fig. 1f (annotated).

Yurt's Figures 1c and 1f, reproduced above with Petitioner's annotations, depict a system for distributing digital audio files provided with (1) "a plurality of transmission systems 100" (i.e., the claimed "private distribution centers"); (2) "a plurality of reception systems 200" (i.e., the recited "user systems" or "satellite or cable TV networks"); and (3) "remote order processing and item database 300" (i.e., the recited "central controller"). Ex. 1005, Figs. 1c, 4:1–13, 4:19–25, 4:36–39, 13:29–37, 16:62–68.

Patent Owner does not challenge Petitioner's contentions for the preamble of claim 1, except for the term "substantially real time." Specifically, Patent Owner, relying upon Mr. Johnson's testimony (Ex. 1018, 47:18–48:22) and Dr. McCulloh's testimony (Ex. 1017, 115:2–8), argues Yurt's data distribution "in less than real time" or "as a fraction of real time" is *not* the same as "substantially real time" recited in the preamble of claim of the '128 patent. PO Resp. 30.

According to Patent Owner, the term "substantially real time" "requires clarification to ensure that Petitioner does not erroneously equate bulk 'fraction of real time' delivery with streaming-like sequential playback" (*id.* at 23) and, as such, "requires playback while transmission is ongoing," whereas "Yurt teaches bulk delivery for later playback. *Id.* at 30 (citing Ex. 2007, ¶ 33); *see also* Ex. 1018, 47:18–48:22; Ex. 1017, 115:2–8.

In the Sur-reply, Patent Owner proposes additional clarifications that the term "'substantially real time' requires coordinated system behavior in response to a user's request" and "describes a system in which a user request triggers coordinated operations, including locating content across distributed systems, routing that content, and initiating playback while transmission is

ongoing.” PO Sur-Reply 4 (Paper 15) (citing Ex. 1001, 2:67–3:2, 6:23–35).

Patent Owner’s proposed clarifications, however, are not consistent with intrinsic evidence of the record, including (1) the claims themselves, (2) the ’128 patent’s specification, and (3) the prosecution history of the ’128 patent for reasons we will discuss *seriatim* below.

First, there is a “heavy presumption” that the terms used in claims “mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art.” *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (citing *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1202 (Fed.Cir.2002)).

Independent claim 1 of the ’128 patent only recites (a) in its preamble: “[a] system for distributing digital audio files in *substantially real time* to users connected to a plurality of satellite or cable TV networks” and then (b) in its body: “a processor [] for [] sequentially transmitting said requested digital audio files in *substantially real time* to said user[.]” In both instances, digital audio files are distributed/transmitted in *substantially real time* to users.

But nowhere in the preamble or the body of claim 1 is there requirement of any (1) “playback while transmission is ongoing” or (2) any “coordinated system behavior in response to a user’s request” “in which a user request triggers coordinated operations, including locating content across distributed systems, routing that content, and initiating playback while transmission is ongoing,” as advocated by Patent Owner. PO Resp. 30; PO Sur-Reply 4–5 (citing Ex. 1001, 2:67–3:2, 6:23–35).

Second, the Specification and the drawing (Figures 1–3) of the ’128 patent also confirm that the patentee’s use of “substantially real time” as

analogous to “real time.” For example, the ’128 patent’s original specification only describes “real-time” in connection with its title as “real-time music distribution systems” (Ex. 1001, code (54)) for “real-time listening or high-fidelity listening” when “the user wants listen to the selection in real-time” (*id.* at 1:41–43, 3:1–2), for playback “to subscribers in either [1] real-time or [2] at a predetermined time in the future in high-fidelity bandwidth” (*id.* at 2:27–29, 6:33–35). In other words, the ’128 patent describes two distinct ways selected music (audio files) may be delivered and played back to a user: (1) in “real time” so the user can immediately begin playing the audio without waiting, or alternatively, (2) by downloading and playing later. *Id.* at 2:26–29, 6:24–29.

Nowhere in the ’128 patent’s specification is there any support of Patent Owner’s clarification of “substantially real time” as requiring either (1) “playback while transmission is ongoing” (PO Resp. 30), or (2) “[a] coordinated system behavior in response to a user’s request” “in which a user request triggers coordinated operations, including locating content across distributed systems, routing that content, and initiating playback while transmission is ongoing,” as advocated by Patent Owner. PO Sur-Reply 4–5 (citing Ex. 1001, 2:67–3:2, 6:23–35). The written description is not a substitute for, nor can it be used to rewrite, the chosen claim language. **“Specifications teach. Claims claim.”** *SRI Int’l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 n. 14 (Fed. Cir.1985) (en banc).

Third, the prosecution history of the ’128 patent does not support Patent Owner’s clarification of “substantially real time.” Ex. 1002, 97. For example, the term “*substantially* real time” is not even part of the original disclosure of the ’128 patent (Ex. 1002, 16–27) and is not defined anywhere

during the prosecution of the '128 patent. Ex. 1002.

Instead, the word “substantially” that modifies “real time” was only added to claim 1 during prosecution of the '128 patent (without any explanation) along with other features in an effort to distinguish over the cited prior art at that time, including Verbiest (Ex. 2001) and McCalley (Ex. 2002) based on “files [distribution] in real time,” but not any “playback while transmission is ongoing” or any playback in real time, as argued by Patent Owner. Ex. 1002, 87, 96–98; *see* PO Resp. 15–18, 21, 22, 30.

During the oral hearing, Patent Owner’s counsel further admitted that no express construction is required, as reproduced below:

- A. [] We have not argued for a construction of “substantially real time.” We don’t believe there needs to be one. I believe we all know what it means. You know, it’s real time delivery of media. It was television transmissions. It was radio transmissions . . .

Now, so we have not -- we have not argued for a construction because we believe the plain meaning of real time is known. And I believe what's going on is Apple, knowing that deficiency in Yurt, that it does not disclose substantially real time transmissions, they then need “available for immediate viewing” to also mean real time. And that is a requested construction. So we're kind of in a bizarro world where it's -- the argument is that we are requesting a construction when we believe the plain meaning of the term is understood.

- Q. So we are a bit baffled regarding your position of these terms. On one hand, you are taking a position that the plain ordinary meaning would apply to these two terms, correct?

- A. Yes.

Q. But in your preliminary and [y]our subsequent response to the DI, you take the position that these terms require additional clarification.

A. They require clarification with additional elements in the claims.

Q. . . . But if it is plain ordinary meaning then we don't really need a claimed construction, do we?

A. No, we don't.

Tr., 32:19–33:21.

Based on the record before us, we determine that neither Patent Owner's proposed clarification nor an express construction of "substantially real time" is necessary for our proceeding.

Plain Meaning of "Substantially Real Time"

Instead, the plain meaning of "substantially real time" is readily apparent and understood by a person of skill (POSITA) in the art in the context of data distribution or transmission of the '128 patent as referring to an acceptable time delay (i.e., "a fraction of real time") between distribution center 18 and user device 12, via network 14, shown in Figures 1–2 of the '128 patent and, as such, is consistent with the '128 patent's specification and Dr. Lippman's Declaration (Ex. 1003, ¶¶ 79, 126).

Because the plain meaning of "substantially real time" as understood by a POSITA is readily apparent, there is no reason for the Board to consider Patent Owner's clarification of "substantially real time" based solely on extrinsic evidence, i.e., counsel argument, Mr. Johnson's declaration (Ex. 2007, ¶¶ 27, 29–30, 33, 39; Ex. 1018, 38:13–39:20) and Dr. McCulloh's declaration (Ex. 2009, ¶ 19).

For example, Patent Owner, relying upon Mr. Johnson’s testimony, clarifies the term “substantially real time” requires either (1) “playback while transmission is ongoing” (PO Resp. 30), or (2) “[a] coordinated system behavior in response to a user’s request” “in which a user request triggers coordinated operations, including locating content across distributed systems, routing that content, and initiating playback while transmission is ongoing” (PO Sur-Reply 4 (citing Ex. 1001, 2:67–3:2, 6:23–35)). However, Patent Owner’s shifting position regarding “substantially real time” is not commensurate with the plain reading of the term.

Based on the plain meaning of “substantially real time,” we are persuaded by Petitioner that Yurt explicitly discloses transmitting data at least in “*real time*,” preferably “*less than real time*” or “*a fraction of real time*” for playback. Pet. Reply 9 (citing Ex. 1005, code (57), 1:66–2:4, 4:68–5:3 (teaching distributing “digital audio” in “less than real time” and in “a fraction of real time,” where the receiving system may “decompress in real time the requested material as it is distributed by transmission system 100”)).

Even assuming *arguendo* that Patent Owner’s clarifications of “substantially real time” as requiring “playback while transmission is ongoing” (PO Resp. 30; Ex. 1018, 48:15–19) apply, we are also persuaded by Petitioner’s explanation that Yurt teaches transmitting data in “substantially real time” when understood as “playback while transmission is ongoing.” Pet. Reply 17–19. For example, Yurt teaches that content is decompressed and played back for “immediate viewing as it is distributed by the transmission system 100.” Ex. 1005, 5:5–9.

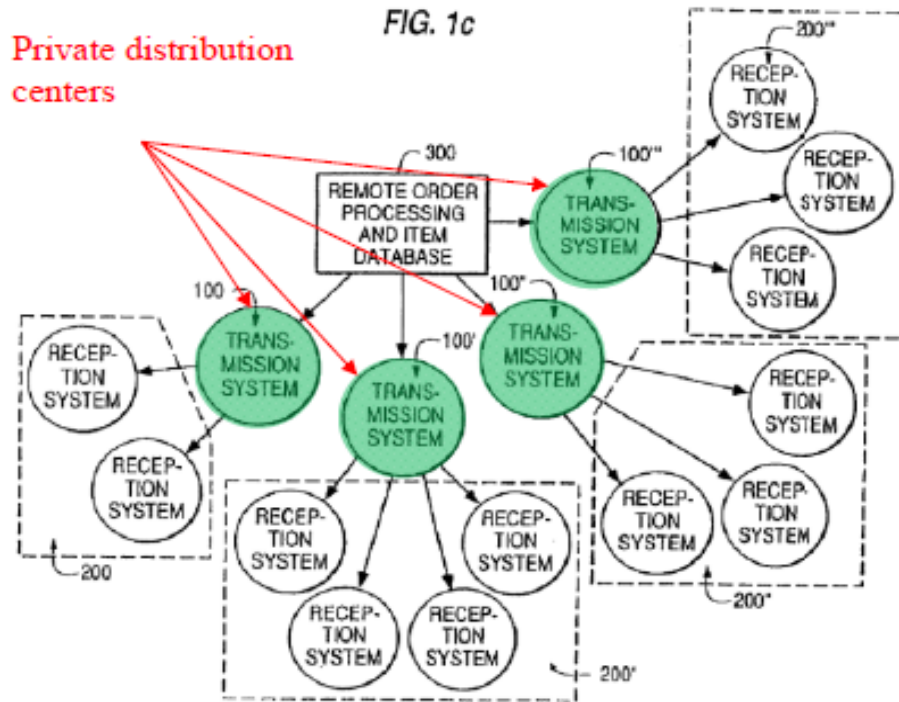
Based on Petitioner’s persuasive argument and evidence, and reasons provided above, we determine that Yurt teaches the preamble of claim 1, including “substantially real time.”⁸

[1.1], [1.1.1]–[1.1.3]: “a) a plurality of private distribution centers, each including: 1) a network interface including an input and an output for connecting to one of the satellite or cable TV networks; 2) a library including a plurality of digital audio files; 3) a library interface including an input and an output connected to said library”

Petitioner presents evidence that Yurt teaches limitations [1.1], [1.1.2], and [1.1.3] of claim 1 and that the combination of Yurt and Logan renders obvious limitation [1.1.1] of claim 1. Pet. 27–36.

For example, Petitioner, relying upon Dr. Lippman’s declaration (Ex. 1003), argues Yurt’s plurality of “transmission systems 100,” shown in Figure 1c, each in communication with respective users, i.e., “receiv[es] transmission requests to transmit items and [retrieve] formatted data blocks stored in the compressed data library 118 corresponding to the requests from users.” Pet. 27–28 (citing Ex. 1005, 13:29–37). Yurt’s Figure 1c, reproduced below with Petitioner’s annotations, depicts a plurality of “transmission systems 100” as the claimed “private distribution centers.”

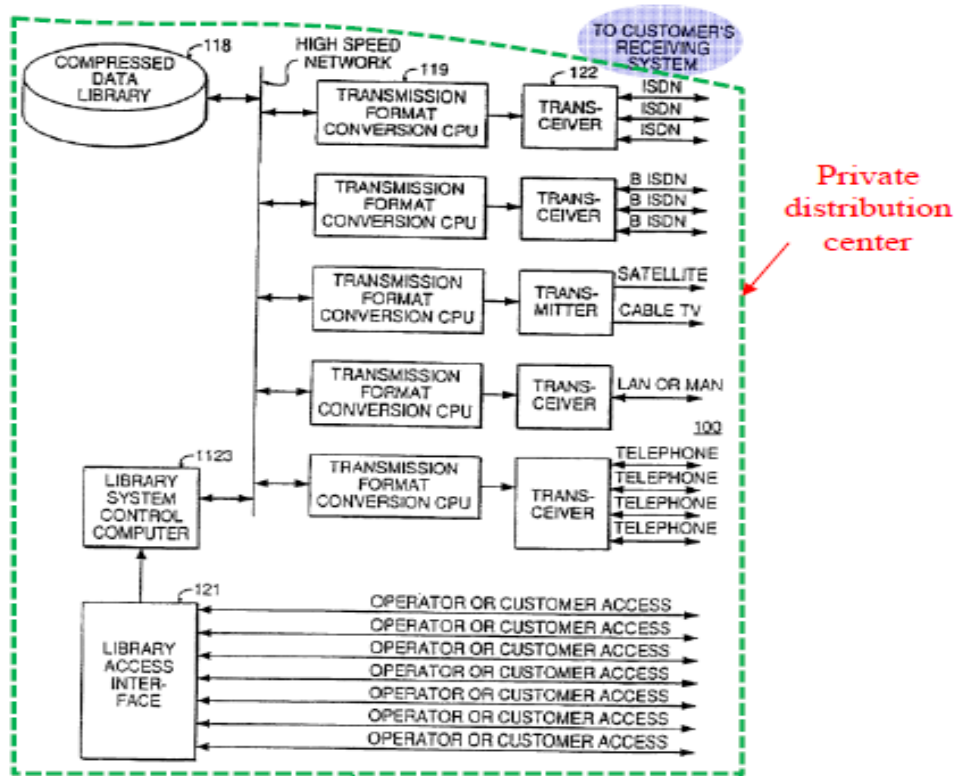
⁸ Neither party argues that the preamble limits claim 1. We make no determination whether the preamble of claim 1 is limiting.



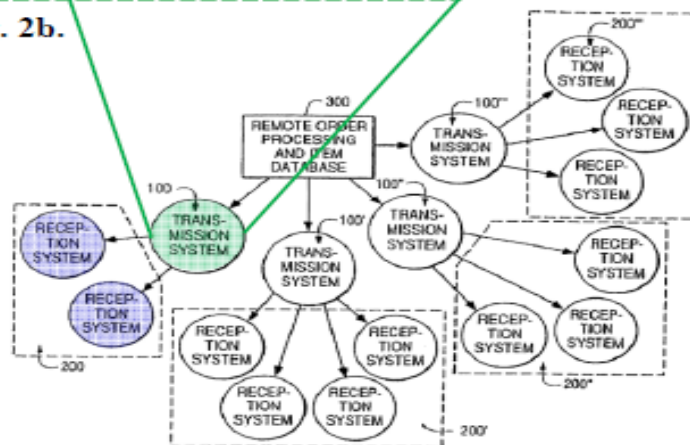
Ex.1005, Fig. 1c (annotated); Ex.1003, ¶¶81-82.

Yurt’s Figure 1c, reproduced above, depicts a plurality of “transmission systems 100” as the claimed “private distribution centers.” Ex. 1003, ¶¶ 81–82.

Petitioner also explains that each of Yurt’s transmission systems (the claimed “private distribution center”), shown in Figures 1c and 2b, comprises limitations [1.1.1]–[1.1.3] of claim 1. Pet. 31–36. Yurt’s Figures 1c and 2b, reproduced below with Petitioner’s annotations, depict details of each transmission system (the claimed “private distribution center”).



Ex.1005, Fig. 2b.



Ex.1005, Fig. 1c (annotated).

Yurt's Figures 1c and 2b, reproduced above with Petitioner's annotations, depict each transmission system (the claimed "private distribution center") as including: (1) transceiver(s) 122 (the claimed "network interface") including an input and an output for connecting to one of the satellite or cable TV networks; (2) compressed data library 118 (the claimed "library") to store a plurality of music titles in "digital format" (the claimed "digital

audio files”) and (2) library interface 121 (the claimed “library interface”) including an input and an output connected to said library 118 “for receiving transmission requests to transmit items and for retrieving formatted data blocks stored in the compressed data library 118 corresponding to the requests from users.” *Id.* at 31–36 (citing Ex. 1005, 6:8–22, 13:29–40, 14:64–67, 15:3–32, 15:61–16:13, 16:53–56, Figures 1c, 2b; Ex. 1003, ¶¶ 82–83, 89–93, 101–102).

Yurt’s “compressed data library 118,” shown in Figure 2b, is described as including “different types of materials including television programs, movies, audio recordings, still pictures, files, books, computer tapes, computer disks, documents of various sorts, musical instruments, and other physical objects.” Ex. 1005, 6:8–22.

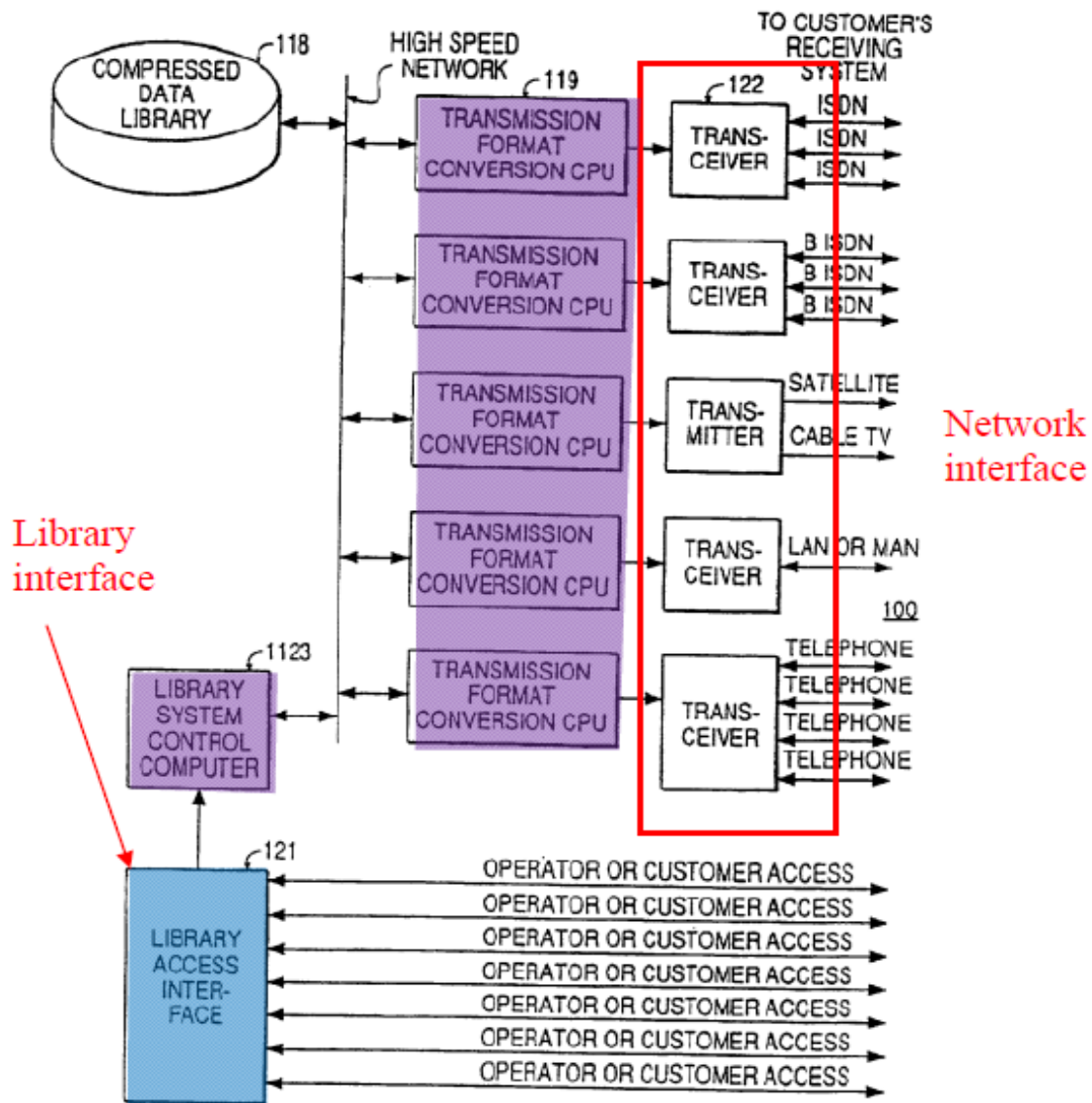
Petitioner argues that Yurt’s “transceiver 122,” shown in Figure 2b, is understood by a person skilled in the art as a transmitter/receiver capable of communicating bidirectionally, i.e., receive and transmit data via satellite or cable TV networks. Pet. 31–33 (citing Ex. 1005, 15:61–16:13; Ex. 1003, ¶¶ 89–91). Petitioner additionally relies upon Logan to confirm explicitly that Yurt’s transceiver(s) 122 communicate bidirectionally, via its own “bidirectionally communicating between [] host server 101 (file requests) and client system 103 (‘player 103,’ e.g., laptops, desktops) via Internet 123,” shown in Logan’s Figure 1. *Id.* at 33 (citing Ex. 1003, ¶¶ 91–93; Ex. 1005, 14:64–67, 15:3–32; Ex. 1006, 3:24–25, 5:46–54, 6:36–44, Figure 1).

Patent Owner does not challenge Petitioner’s contention. Based on Petitioner’s persuasive argument and evidence, we determine that Yurt teaches limitations [1.1], [1.1.2], and [1.1.3], and the combination of Yurt and Logan teaches limitation [1.1.1] of claim 1.

[1.1.4], [1.1.4.1]–[1.1.4.3]: “4) a processor [in each of the plurality of private distribution centers] connected to said network interface and said library interface, said processor for: (a) displaying to a user a menu of said audio files; (b) receiving requests from a user for a plurality of said digital audio files and a user address; [and] (c) retrieving said requested digital audio files from said library via said library interface”

Petitioner presents evidence that Yurt teaches limitations [1.1.4], and [1.1.4.1]–[1.1.4.3] of claim 1. Pet. 36–42. For example, Petitioner contends Yurt’s transmission system 100, shown in Figure 2b, comprises limitations [1.1.4], and [1.1.4.1]–[1.1.4.3] of claim 1. *Id.*

Yurt’s Figure 2b, reproduced below with Petitioner’s annotations, depicts details of each transmission system (the claimed “private distribution center”) including library system control computer 1123 and transmission format conversion CPU 119 (collectively the claimed “processor”).



Ex.1005, Fig. 2b (annotated).

Yurt's Figure 2b, reproduced above, depicts each transmission system (the claimed "private distribution center") provided with (1) compressed data library 118 to store audio files and (2) "library system control computer 1123 and transmission format conversion CPU 119" (collectively the claimed "processor" connected to transceiver(s) 122 (the claimed "network interface") and library access interface 121 (the claimed "library interface"). Ex. 1005, 13:40–47, 15:33–37, Figure 2b; Ex. 1003, ¶¶ 105–109.

Petitioner explains Yurt's system control computer 1123, shown in Figure 2b, is further configured to perform limitations [1.1.4.1]–[1.1.4.3] of claim 1: (a) “displaying to a user a menu of said audio files;” (b) “receiving requests from a user for a plurality of said digital audio files and a user address;” and (c) “retrieving said requested digital audio files from said library via said library interface.” Pet. 36–41.

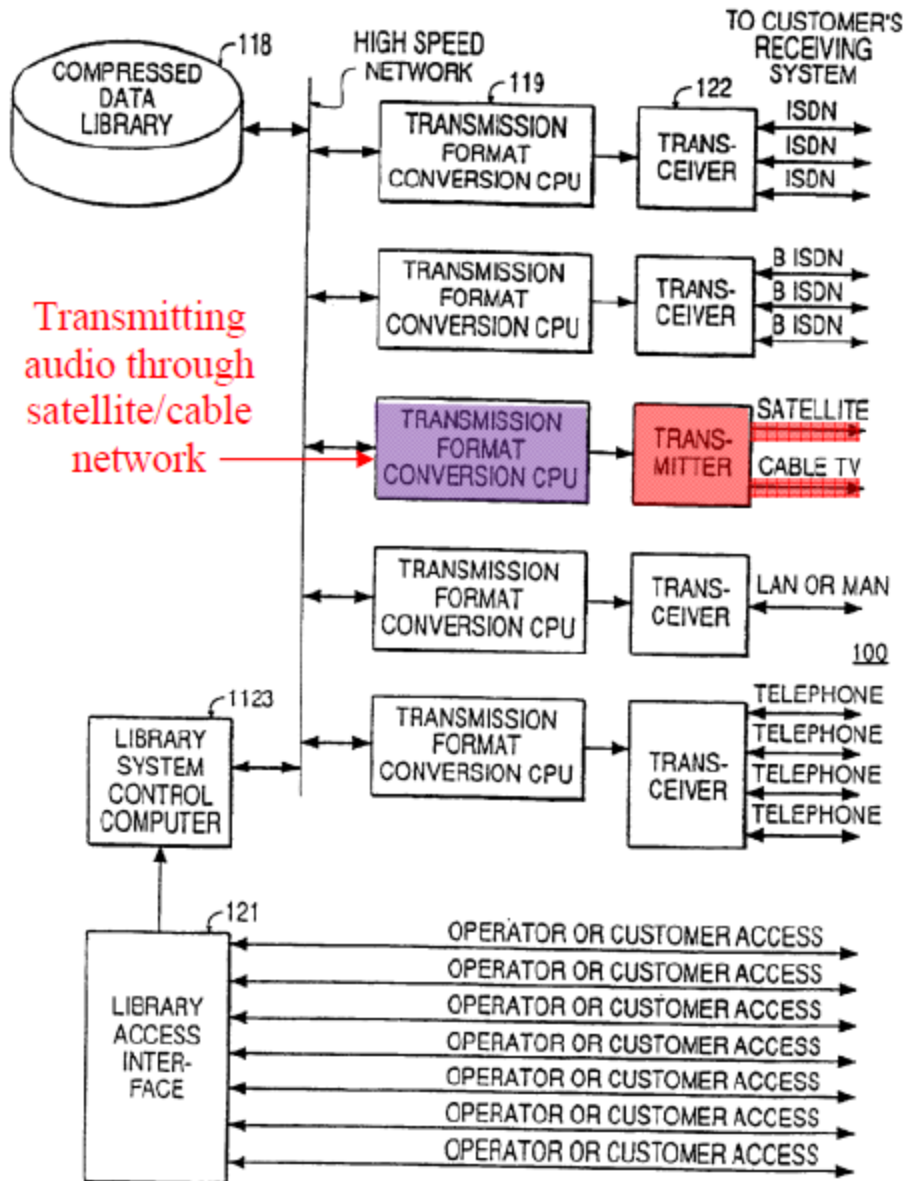
For example, Yurt teaches (1) storing and maintaining audio files in an “item database master . . . resid[ing] in the system control computer 1123” (Ex. 1005, 11:54–60); (2) item database master resided in system control computer 1123 is “updated and kept current to the contents of the compressed data library 118” (Ex. 1005, 11:54–60); (3) user accesses the item database master, via user terminal interface, “to do a search of available programs [“a menu”] from a computer screen [displayed, via system control computer 1123]” and “select a desired item by searching the database of available titles in the library system control computer 1123” (Ex. 1005, 11:40–60, 11:57–60, 14:64–15:1, 15:6–13, 15:33–37; Ex. 1003, ¶¶ 100–111); (4) once the user has searched Yurt's library 118, shown in Figure 2b, “the user selects [requests] the item for transmission at a specific time and location [of the user]” (Ex. 1005, 12:20–26, 15:20–22, 15:33–37; Ex. 1003, ¶¶ 113–115) wherein the user request “contains the address of the user, the address of the item, and optionally” additional information (Ex. 1005, 12:24–26, 15:20–22, 15:33–37); and (5) user's requested audio files are retrieved from Yurt's library 118 for distribution (Ex. 1005, 13:29–37, 18:53–67; Ex. 1003, ¶¶ 118–121).

Patent Owner does not challenge Petitioner's contention. Based on Petitioner's persuasive argument and evidence, we determine that Yurt teaches limitations [1.1.4], and [1.1.4.1]–[1.1.4.3] of claim 1.

*[1.1.4.4]: “4) a processor connected to said network interface and said library interface, said processor for: . . . (d) sequentially transmitting said requested digital audio files in **substantially real time** to said user through one of the satellite or cable TV networks via said output of said network interface”*

Petitioner presents evidence that Yurt alone teaches limitation [1.1.4.4] of claim 1. Pet. 42–45. For example, Petitioner contends Yurt's transmission system 100, shown in Figure 2b, comprises limitation [1.1.4.4] of claim 1. *Id.*

Yurt's Figure 2b, reproduced below with Petitioner's annotations, depicts details of each transmission system (the claimed “private distribution center”) provided with library system control computer 1123 and transmission format conversion CPU 119 (collectively the claimed “processor”).



Ex.1005, Fig. 2b (annotated); Ex.1003, ¶¶123-125.

Yurt's Figure 2b, reproduced above, depicts "transmission format conversion CPU 119" configured to "transfer[] the desired segments of data from the compressed data library 118 onto the communication channel," via transceiver (transmitter) 122 for delivery to the user's reception system 200, after receiving a request and retrieving the desired audio files from

compressed data library 118. Ex. 1005, 13:45–46, 15:55–60, Figure 2b; Ex. 1003, ¶¶ 123–125.

Petitioner explains Yurt’s system control computer 1123, shown in Figure 2b, is also configured to perform limitation [1.1.4.4] of claim 1: (d) “sequentially transmitting said requested digital audio files in ***substantially real time*** to said user through one of the satellite or cable TV networks via said output of said network interface.” Pet. 42–45.

For example, Yurt teaches (1) transmission format conversion CPU 119 “transfers the desired segments of data from the compressed data library 118 onto the communication channel” for delivery to the user’s reception system 200 (Ex.1005, 15:55–60), where the “requested item is then sent to the user via the transmitter 122, e.g., through satellite/cable TV networks (“through one of the satellite or cable TV networks via said output of said network interface”) (Ex.1005, 13:45–46; Figure 2b); (2) the user receives the audio information via transmitter 122 in real time or “***preferably in less than real time***,” which means transmission of the audio content “***in a fraction of real time***” (Ex.1005, 2:1–4; 4:64–5:9, 5:59–61, 16:62–68; Ex. 1003, ¶ 126); and (3) the requested digital audio files can be transmitted “sequentially” because when a request is on the transmission queue and ready for transmission to a reception system (and, thereby, to a “user”), “the data stored in compressed data library 118 is preferably transferred in data blocks to the communications controller,” which buffers the data blocks and sends them “down the communications channel to the reception system 200 by the transmitter 122” *sequentially*. Ex. 1005, 16:46–52, 17:1–11 (data blocks sent to reception system) (“[a]fter all data blocks have been received and reception is confirmed, the communications controller breaks the physical

connection”); *see also* 9:50–57 (audio information as organized as blocks of data into groups).

Patent Owner does not challenge Petitioner’s contention, except for the term “substantially real time” recited in limitation [1.1.4.4] of claim 1. Like the preamble of claim 1, Patent Owner also argues Yurt’s data transmission “in less than real time” or “as a fraction of real time” is *not* the same as “substantially real time” recited in claim 1 of the ’128 patent because “substantially real time” requires additional clarification: (1) “playback while transmission is ongoing” whereas “Yurt teaches bulk delivery for later playback (PO Resp. 30 (citing Ex. 2007, ¶ 33)), or alternatively, (2) “[a] coordinated system behavior in response to a user’s request” “in which a user request triggers coordinated operations, including locating content across distributed systems, routing that content, and initiating playback while transmission is ongoing.” PO Sur-Reply (Paper 15), at 4–6 (citing Ex. 1001, 2:67–3:2, 6:23–35).

We remain unpersuaded by Patent Owner’s arguments and Mr. Johnson’s declaration (Ex. 2007) because Patent Owner’s clarification of the term “substantially real time” is based solely on extrinsic evidence, i.e., counsel argument, Mr. Johnson’s declaration (Ex. 2007, ¶¶ 27, 29–30, 33, 39; Ex. 1018, 38:13–39:20) and Dr. McCulloh’s declaration (Ex. 2009, ¶ 19) that (1) contradicts the plain and ordinary meaning of “substantially real time”; and (2) is inconsistent with intrinsic evidence of the record, including (i) the claims themselves, (ii) the ’128 patent’s specification, and (iii) the prosecution history of the ’128 patent for reasons explained previously.

Even assuming *arguendo* that Patent Owner’s clarification of “substantially real time” as requiring “playback while transmission is

ongoing” (PO Resp. 30; Ex. 1018, 48:15–19) apply, we are nevertheless persuaded by Petitioner’s explanations that Yurt also teaches transmitting data in “substantially real time” when understood as “playback while transmission is ongoing.” Pet. Reply 10–11, 17. For example, Yurt teaches:

The reception systems 200 [shown in Figure 1c] may either buffer the requested material for later viewing, or decompress in real time the requested material as it is distributed by transmission system 100. Alternatively, the reception systems 200 of the present invention may perform a combination of buffering and non-buffering by buffering some of the requested material and decompressing the remainder of the requested material for immediate viewing as it is distributed by transmission system 100.

Ex. 1005, 4:68–5:9 (emphasis added).

Patent Owner’s experts, Mr. Johnson (Ex. 1018) and Dr. McCulloh (Ex. 1017), confirm such “playback while transmission is ongoing” is also disclosed in Yurt in their depositions. For example, Mr. Johnson explained that when Yurt’s transmitting in “substantially real time,” “the consumer can begin playback, and the rest of the file is still being delivered.” Ex.1018, 38:13–39:20. For example,

- Q. So in other words, are you saying here that the user is immediately consuming the content as it’s still being distributed?
- A. I’m saying that playback begins while the transmission is still continuing . . . the correct term that we distinguish in the patent and before our examiner is ‘substantially real time.’ And that just makes a little bit of room for buffering and other things . . . the idea is that the consumer requests it, and it begins to play, and that transmission is continuing while it’s playing.

Q. [Y]ou're saying that the consumer, when the content is delivered, begins immediately consuming that content while it's still being distributed?

A. Yeah, the consumer can begin playback, and the rest of the file is still being delivered.

Ex.1018, 38:13–39:20.

Dr. McCulloh also provided a similar explanation. For example:

A. I would call it real time if I had no delay or disruption in playing the content.

Q. And that would be the case whether or not it was downloaded all fast up front or over time, just faster than the playback is?

A. Yes ... if you can download it and there's no disruption in the content, the music, the song, the show, whatever, I would call that real time from a consumer's perspective.”).

Ex.1017, 113:19–115:8.

Based on Petitioner's persuasive argument and evidence, and reasons provided above, we determine that Yurt alone teaches limitation [1.1.4.4] of claim 1, including “substantially real time.”

*[1.1.4.5]: “4) a processor connected to said network interface and said library interface, said processor for: . . . (e) **recording** the digital audio files requested by said user and said user address in a data base”*

Petitioner presents evidence that Yurt alone or combined with Logan teaches or renders obvious limitation [1.1.4.5] of claim 1. Pet. 45–48. For example, Petitioner contends Yurt teaches (1) the user's request “contains the address of the user, the address of the item [e.g., audio file]” among other parameters” (Ex. 1005, 12:24–27); and (2) databases that track information about audio files at library 118, shown in Figure 2b. Pet. 45–46

(citing Ex.1005, 7:50–55 (“item database records”), 8:45–47 (“system item database” containing audio file records), 10:66–11:4 (details regarding the item “are kept in an item database”), 11:9–21 (recording facts about the items)). Petitioner, therefore, asserts, with supporting testimony from Dr. Lippman, that this limitation would have been obvious in view of Yurt because Yurt “(1) already has all the information, and (2) uses that information to store information based on frequency of requests.” Pet. 46; Ex. 1003 ¶¶ 132–133.

Petitioner also asserts that it would have been obvious to expressly store Yurt’s information that is already present to assist with tracking item popularity, as taught in Logan. Pet. 46–48. Petitioner demonstrates Logan’s “host server 101,” shown in Logan’s Figure 1 (Ex. 1006), also “stores and maintains a user data and usage log database indicated at 143 which stores uploaded usage data” and Logan’s user data log 143 [shown in Logan’s Figure 1] “contains additional data describing the preferences, demographic characteristics and program selections unique to each subscriber.” Pet. 46–48 (citing e.g., Ex.1006, 5:35–45). Thus, Logan’s user data & usage log 143” is a database that is updated in response to a user request, user’s browse and selection, and usage log for billing, logging and adaptive system settings based on actual usage.

Patent Owner, relying upon Mr. Johnson’s declaration (Ex. 2007, ¶ 40), responds that “[n]one of the prior art [including Yurt and Logan] asserted against the claims of the ’128 patent teach or suggest employing regional recording of ‘the digital audio files requested by said user and said user address’ for marketing/billing.” PO Resp. 26.

Patent Owner's response is not persuasive for two reasons. First, Patent Owner's response is not commensurate with the claim language. Limitation [1.1.4.5] of claim 1 only requires "*recording* the digital audio files requested by said user and said user address in a data base" and does not recite any "regional" recording for "marketing/billing." As such, any reference to "regional" recording or "marketing/billing" is not commensurate with the claim language. Second, Patent Owner's mere allegation (without evidence) is insufficient to rebut Petitioner's strong showing that Yurt alone, or combined with Logan teaches or renders obvious limitation [1.1.4.5] of claim 1.

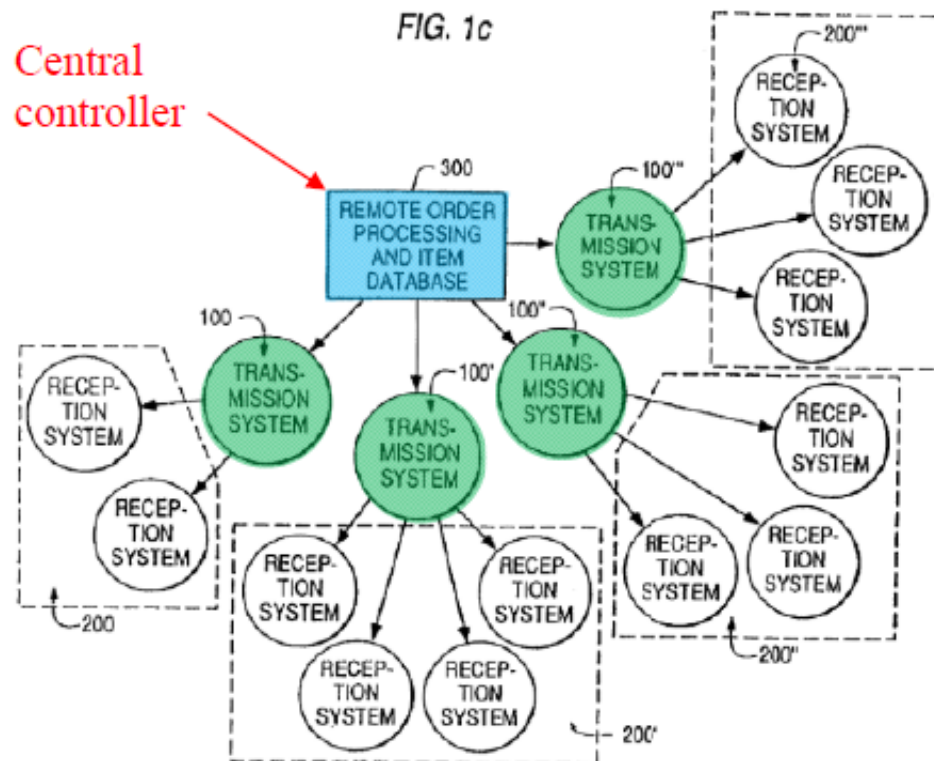
Based on Petitioner's persuasive argument and evidence, we determine that Yurt alone, and in combination with Logan, teaches limitation [1.1.4.5] of claim 1: "(e) *recording* the digital audio files requested by said user and said user address in a data base." The motivation to combine Yurt and Logan will be discussed below.

*[1.2] "b) a **central controller** connected to said network interface of each of said distribution centers for routing digital audio data files between said distribution centers"*

Petitioner presents evidence that Yurt teaches or renders obvious limitation [1.2] of claim 1. Pet. 48–52. For example, Petitioner contends Yurt's remote order processing and item database 300, shown in Figure 1c, and dispatching control software (Ex. 1005, 17:54–57) act as the claimed "central controller" to perform limitation [1.2] of claim 1: "for routing digital audio files between said distribution centers." *Id.*

Yurt's Figure 1c, reproduced below with Petitioner's annotations, depicts remote order processing and item database 300 (the claimed "central controller") connected to each transmission system 100 (the claimed "private

distribution center”), via transmitter 122 (the claimed “network interface”), shown in Figure 2b.



Ex.1005, Fig. 1c (annotated); Ex.1003, ¶¶140-142.

Yurt’s Figure 1c, reproduced above, depicts “remote order processing and item database 300” and dispatching control software (Ex. 1005, 17:54–57) that serve as the claimed “central controller” connected to said network interface of each of said distribution centers [transmission systems 100, 100’, 100’’, and 100’’’] for routing digital audio data files between said distribution centers [transmission systems 100, 100’, 100’’, and 100’’’]. As shown in the annotated Figure 1c, Yurt’s central controller is connected to multiple distribution centers which causes the various distribution centers to route digital audio files amongst themselves. Pet. 48–52, 56–56. Each transmission system (each “distribution center”) is connected to a central

“remote order processing and item database 300,” which “enables users to access desired items by remote communication.” Ex.1005, 4:1–13, Figure 1c.

Petitioner, relying on Dr. Lippman’s declaration (Ex. 1003, ¶¶ 140–142), explains Yurt’s “remote order processing and item database 300,” shown in Figure 1c, and dispatching control software (Ex. 1005, 17:54–57) serve as a “central controller” connected to each transmission system 100 (the claimed “private distribution center”), via transmitter 122 (the claimed “network interface”), and are configured to (1) “communicate with a plurality of users,” via reception systems 200, and “enable[] users to access desired items by remote communication” (*id.* at 4:5–7, 4:11–13); (2) coordinate network traffic, provide “inter-library transfers” of items (“*for routing digital audio data files between said distribution centers*”) (*id.* at 7:44–48), and dispatch distribution requests to other distribution systems (particular transmissions systems 100) where not all items are contained in a given data library 118 (*id.* at 4:5–7; 15:23–30, 17:54–66 (dispatching control software may “coordinate network traffic, source material library 111 utilization, [and] source material library 111 contents,” to achieve “efficient use of the available distribution channels”). Pet. 48–52 (citing Ex. 1003, ¶¶ 140–142; Ex. 1005, 4:5–7, 4:11–13, 7:44–48, 15:23–30, 17:54–66).

Patent Owner does not challenge Petitioner’s contention that Yurt’s “remote order processing and item database 300” and dispatching control software (Ex. 1005, 17:54–57) act as the claimed “central controller.” Nor does Patent Owner dispute Yurt’s “remote order processing and item database 300” and dispatching control software are configured to perform limitation [1.2] of claim 1.

Instead, Patent Owner argues that Petitioner has mischaracterized the claimed “central controller,” in that Yurt does not teach “actively search[ing] other regional libraries and initat[ing] file transfers between independent distribution centers,” “per-request centralized orchestration and routing between independent distribution centers,” and “per-request routing initiated by a controller.” PO Resp. 29–30. Specifically, Patent Owner, relying upon Mr. Johnson’s declaration (Ex. 2007, ¶¶ 50–51) and Dr. McCulloh’s declaration (Ex. 2009, ¶¶ 12–13), argues the term “central controller” “require[s] clarification to avoid Petitioner’s relabeling passive indexing/dispatching as the claimed orchestrator, which creates confusion” but fails to provide an explicit construction of “central controller.” PO Resp. 23; *see also* PO Reply 8–9. According to Patent Owner, “the control center is not passive—it actively determines location, retrieves, and routes requested files.” PO Resp. 28. “Passive indexing or popularity-based replication is not the same or equivalent to an active central controller that searches libraries and initiates routing.” PO Resp. 29.

Similarly, Mr. Johnson’s declaration describes the challenged claims of the ’128 patent “are directed to a specific architecture and control-plane behavior” that “orchestrates the operation across independent regional libraries and routing of files between distribution centers.” Ex. 2007, ¶ 34. In deposition, Mr. Johnson added yet another concept to “central controller” as a “control plane” – that “it’s a center of the brain.” Ex. 1018, 50:9–51:9.

Likewise, Dr. McCulloh’s declaration describes the invention of the ’128 patent as performing “active, distributed orchestration, not passive distribution,” with *passive* approaches including “staging [content] in advance.” *Id.* at 15 (citing Ex. 2009, ¶¶ 12–13). During his deposition, he

described such advance positioning (i.e., staging) as *active* distribution, not passive distribution. Ex.1017, 137:13–22 (“[A]ctive could even be positioning it so that it is even closer to the user that’s requesting it...it’s doing something active, something in advance to make this faster”), 139:12–18 (“Q: [I]t sounds like what you’re saying [is] the ’128 patent is described in ways to push that closer to the edge so that it’s more quickly accessible even if it’s not requested first...? A: That’s right”).

However, neither Patent Owner’s proposed clarifications nor its declaration testimony constitute an express claim construction of “central controller.” Nor are Patent Owner’s clarifications and declaration testimony consistent with intrinsic evidence of the record. Nevertheless, we determine that neither Patent Owner’s proposed clarifications nor an express construction of “central controller” is necessary for our proceeding.

Plain Meaning of “Central Controller”

The plain meaning of “substantially real time” recited in claim 1 of the ’128 patent is readily apparent and understood by a person of skill in the art (POSITA) in the context of control center 26, shown in Figure 1 of the ’128 patent, for controlling data distribution or transmission from distribution center 18 to user device 12, via network 14, upon receipt of a user request for a data file, including “routing digital data files between said distribution centers,” i.e., “determin[ing] whether the requested data file is located in the libraries in the other regional networks and, if so, retriev[ing] and rout[ing] the requested files to the user.” Ex. 1001, 2:59–62, 3:58–62, 5:39–47.

Based on the plain meaning of “central controller,” we are persuaded by Petitioner that Yurt’s “remote order processing and item database 300,”

shown in Figure 1c, and dispatching control software (Ex. 1005, 17:54–57), serve as the claimed “central controller” configured to (1) “communicate with a plurality of users,” via reception systems 200, and “enable[] users to access desired items by remote communication” (*id.* at 4:5–7, 4:11–13); (2) provide “inter-library transfers” of items (“*for routing digital audio data files between said distribution centers*”) (*id.* at 7:44–48), and dispatch distribution requests to other distribution systems (particular transmissions systems 100) where not all items are contained in a given data library 118. Pet. 48–52 (citing Ex. 1003, ¶¶ 140–142; Ex. 1005, 4:5–7, 4:11–13, 7:44–48, 15:23–30, 17:54–66).

But even assuming *arguendo* that Patent Owner’s clarifications of “central controller” as requiring “active, distributed orchestration, not passive distribution” and “per-request decisions across independent regions” (PO Resp. 24) (which we do not agree), we are nevertheless persuaded by Petitioner’s explanation that Yurt’s “remote order processing and item database 300” and “dispatching control software” also teach or suggest “per-request,” “active,” and “orchestrat[ed]” distribution in the context of (1) sending “distribution requests to the distribution systems,” (2) “coordinat[ing] network traffic, source material library 111 utilization, source material library 111 contents, and connection costs,” (3) achieving “efficient use of the available distribution channels.” Pet. Reply 23–28 (citing Ex. 1005, 17:54–66; Ex. 1003, ¶¶ 142, 140–143); Pet. 48–52, 54–59.

Based on Petitioner’s persuasive argument and evidence, and reasons provided above, we determine that Yurt alone teaches limitation [1.2] of claim 1, including “central controller.”

Motivation to Combine Yurt and Logan

In addition to showing that Yurt alone, or combined with Logan, teaches or renders obvious all limitations of claim 1, Petitioner also provides sufficient motivation or reasoning with a rational underpinning to combine Yurt and Logan. Specifically, Petitioner, relying on Dr. Lippman's declaration (Ex. 1003, ¶¶ 62–73), asserts “a POSITA would have been motivated to combine Yurt with Logan for several reasons, discussed further below. Combining Logan's usage log teachings with Yurt's improved audio file accessibility (e.g., via popularity) to track additional user request information would have been obvious, beneficial, and predictable.” Pet. 19 (citing Ex. 1003, ¶¶ 62–72). According to Petitioner, because “Logan teaches implementation details for tracking user/usage data for billing purposes and adapting preferences ‘based on actual usage,’” “[a] POSITA would have thus been motivated to combine Yurt's teachings (e.g., tracking information about requested items like item popularity) with Logan's teachings (e.g., storing user data and usage information in response to user requests).” *Id.* at 19–20. “This would have been merely the use of a known technique (Logan's tracking of user and usage data in response to user requests) to improve a similar method in the same way (Yurt's tracking of information about user-requested items).” *Id.* at 20 (citing Ex. 1003, ¶¶ 67–68). According to Petitioner,

[T]he combination is straightforward: use Logan's known technique for recording user data with Yurt's existing item database teachings. *See* Ex. 1005, 12:28–57, 10:66–11:4; Ex. 1006, 5:33–42, 6:27–35, 8:49–58; Pet. 19–23. Since Yurt already teaches using its item database to track item popularity and request information, no modification to Yurt's architecture is necessary. Logan merely confirms when and how to store the user information. Pet. 19–21. A POSITA would have found the

combination obvious for all the reasons Dr. Lippman provided.
See, e.g., Ex.1003, ¶¶ 71–72.

Pet. Reply 29–30.

Patent Owner, relying on Mr. Johnson’s declaration (Ex. 2007, ¶ 31), challenges Petitioner’s showing as to the motivation to combine Yurt and Logan. PO Resp. 30–32. Patent Owner argues against the combination because (1) Logan’s “logging is not the same thing as orchestration,” and (2) while Logan’s usage log database are used for billing/advertising, Logan “does not teach the combination of: (i) multi-regional distribution centers; (ii) central controller routing between those centers, or (iii) substantially real-time sequential delivery.” PO Resp. 31 (citing Ex. 2007, ¶ 31); *see also id.* (citing Ex. 2007 ¶ 32). Patent Owner argues that a person of ordinary skill in the art would not have combined Yurt and Logan “to arrive at the multi-regional, real-time architecture” claimed. *Id.* at 32. Patent Owner also argues “[n]either Yurt nor Logan teaches the active central controller that dynamically searches and orders transfers across independent regional networks required by the claims of the ‘128 patent.” *Id.* at 32 (citing Ex. 2007, ¶¶ 35–36).

We are not persuaded by Patent Owner’s arguments. Contrary to Patent Owner’s arguments, Logan is not even needed because Yurt alone teaches all limitations, including disputed limitation [1.1.4.5] of claim 1.

For example, limitation [1.1.4.5] of claim 1 only requires “*recording* the digital audio files requested by said user and said user address in a data base.” As correctly recognized by Petitioner, Yurt’s databases track information about audio files at library 118, shown in Figure 2b, and *record* audio files (Ex. 1005, 7:50–55 (“item database records”), 8:45–47 (“system

item database” containing audio file records), 10:66–11:4 (details regarding the item “are kept in an item database”), 11:9–21 (recording facts about the items)). Pet. 45–48. Thus, limitation [1.1.4.5] of claim 1 does not recite any “regional” recording for “marketing/billing,” as incorrectly characterized by Patent Owner. PO Resp. 31.

Nevertheless, Patent Owner argues Logan is relied upon by Petitioner to teach (1) the combination of: (i) multi-regional distribution centers; (ii) central controller routing between those centers, or (iii) substantially real-time sequential delivery” or (2) any “active central controller that dynamically searches and orders transfers across independent regional networks.” PO Resp. 30–32.

Patent Owner’s arguments are not persuasive because Logan is only relied upon, by Petitioner, for expressly teaching the use of “a usage log database for billing/advertising [purposes]” to support Petitioner’s assertion that “Yurt, alone and combined with Logan, renders obvious limitation [1.1.4.5] of claim 1: “e) recording the digital audio files requested by said user and said user address in a data base.” Pet. 45–48. Patent Owner’s arguments essentially argue against Logan individually for limitations that Petitioner does not rely on Logan to teach. Moreover, Patent Owner does not persuasively rebut or meaningfully address Petitioner’s rationale for combining Yurt and Logan.

Based on Petitioner’s persuasive argument and evidence, and reasons provided above, we determine that (1) Petitioner provides sufficient motivation and reasoning with rational underpinning to combine Yurt and Logan, and (2) Patent Owner fails to rebut Petitioner’s motivation to combine Yurt and Logan.

Patent Owner's Other Arguments

Separately, Patent Owner presents several arguments against the combination of Yurt and Logan based on several theories, including: (1) Petitioner improperly relies upon [impermissible] hindsight reconstruction regarding (i) Petitioner's expert's (Dr. Lippman) provides a misleading portrayal of the background, and (ii) the state of the art at the time of the '128 patent's invention (PO Resp. 4–10); and (2) Petitioner provides a skewed overview of the '128 patent, i.e., “[t]he system described in the '128 patent utilizes an active, distributed orchestration architecture (not passive distribution) that combines several elements not found in any prior art, including:

a single central controller capable of searching multiple geographically separated content libraries, orchestrating transfers across regional nodes, initiating real-time delivery to users over cable networks, and simultaneously logging user-specific requests for billing and personalization.”

PO Resp. 24–26.

Patent Owner also argues “Petitioner ignores constraints in the real world state of the art as of the 1997–1998 time frame” including “[t]he '128 patent addresses a particular problem unsolved as of 1998: “how to deliver digital audio content in substantially real time to large numbers of users over existing hybrid fiber-coax cable networks, while simultaneously capturing user-specific selection data for marketing, billing, and personalized recommendations.” PO Resp. 26–28.

We are unpersuaded by Patent Owner's other arguments for several reasons. First, impermissible hindsight reconstruction is improper if Petitioner uses the '128 patent's specification as a roadmap to pick and

choose parts of different prior art references to combine prior art references such as Yurt and Logan. E.g., *In re NTP, Inc.*, 654 F.3d 1279, 1299 (Fed. Cir. 2011) (internal quotations omitted) (an obviousness analysis must “avoid hindsight reconstruction by using the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.”). However, Petitioner does not utilize the ’128 patent’s specification as a roadmap to pick and choose parts of Yurt and Logan to support the combination of Yurt and Logan. Instead, Patent Owner’s hindsight reconstruction argument is based entirely on the testimony of Mr. Johnson and Dr. McCulloh regarding the background of the ’128 patent. Patent Owner does not engage directly with Yurt’s and Logan’s teachings or explain how Petitioner uses the ’128 patent’s specification as a roadmap to pick and choose parts of Yurt and Logan to support obviousness. Argument of counsel cannot take the place of evidence lacking in the record. *Meitzner v. Mindick*, 549 F.2d 775, 782 (CCPA 1977); *see also In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

Second, Patent Owner’s arguments are not commensurate with the scope of claim 1 and, likewise, are predicated primarily upon Patent Owner’s clarifications of “substantially real time” and “central controller,” which we decline to adopt, as set forth above.

Based on Petitioner’s persuasive argument and evidence, and reasons provided above, we determine that Petitioner has shown reasons existed with rational underlying to support obviousness based on Yurt alone or combined with Logan.

Conclusion as to Claim 1

Petitioner has shown that (1) Yurt and Logan teach or suggest all the limitation of claim 1 and (2) reasons sufficiently existed with a rational underpinning to support the combination of Yurt and Logan.

4. Analysis of Independent Claim 2

Independent claim 2 is slightly different from independent claim 1, provided with a similar preamble limitation [2.0] and limitations [2.1]–[2.2], but without reciting “substantially real time,” while requiring additional functions of “central controller,” i.e., search/instruction functions. For example, limitation [2.2] of claim 2 recites:

- [2.2] b) a central controller directly connected to said network interface of each of said distribution centers for:
 - [2.2.1] 1) receiving file import requests from a requesting distribution center, said file import requests including information relating to requested data files;
 - [2.2.2] 2) searching the library within at least one other of said distribution centers to locate at least one requested data file of said requested data files; and
 - [2.2.3] 3) instructing said other distribution center to retrieve and transmit the requested data file that was located therein to said requesting distribution center.”

Ex. 1001, 7:49–8:26.

Petitioner presents evidence that Yurt teaches preamble limitation [2.0] and limitations [2.1], [2.1.1]–[2.1.4], [2.1.4.1]–[2.1.4.6], [2.2], [2.2.1]–[2.2.3] of claim 2. Pet. 52–57 (citing Ex. 1003, ¶¶ 148–181; Ex. 1005, 4:5–7, 6:36–44, 7:44–55, 11:13–17, 12:40–43, 13:4–7, 13:48–60, 15:3–32, 15:44–53, 17:54–66, Figures 1c.

Patent Owner only disputes Petitioner’s showing of “central controller.” Specifically, Patent Owner argues (1) Petitioner

mischaracterizes the central controller because “the control center is not passive—it actively determines location, retrieves, and routes requested files” (PO Resp. 28); and (2) “[n]either Yurt nor Logan teaches the active central controller that dynamically searches and orders transfers across independent regional networks required by the claims of the ’128 patent” (*id.* at 32 (citing Ex. 2007, ¶¶ 35–36)).

We disagree. Yurt’s remote order processing and item database 300, shown in Figure 1c, and dispatching control software (Ex. 1005, 17:54–57), as testified by Petitioner’s expert, Dr. Lippman (Ex. 1003, ¶¶ 141–142), serve as the claimed “central controller” configured to perform limitations [2.2.1]–[2.2.3] of claim 2. For example, Yurt’s dispatching control software/database 300 (the claimed “central controller”) (1) receives and facilitates requests for inter-library transfers between local libraries at different transmission systems 100 (Pet. 57–58 (citing Ex. 1005, 12:40–43, 17:54–66, 7:44–50); (2) maintains “a database of available titles at multiple locations remote of the source material library 111,” “sends a list of available titles at remote libraries to the interface for the user to browse,” and “transfers items between libraries,” i.e., “inter-library transfers” (*id.* at 58 (citing Ex. 1005, 7:44–50, 15:10–15, 15:44–53); and (3) distributes files ordered via database 300 “to the appropriate libraries” (*id.* at 59 (citing Ex. 1005, 15:18–20)).

Based on the plain meaning of “central controller,” we are persuaded by Petitioner that Yurt’s “remote order processing and item database 300,” shown in Figure 1c, and dispatching control software (Ex. 1005, 4:5–7, 17:54–57), serve as the claimed “central controller” configured to (1) “communicate with a plurality of users,” via reception systems 200, and

facilitate requests for inter-library transfers between local libraries at different transmission systems 100 (*id.* at 7:44–50, 12:40–43, 17:54–66); (2) search the library within at least one of said distribution centers to locate requested data files and provide “inter-library transfers” of requested data files (“*for routing digital audio data files between said distribution centers*”) (*id.* at 7:44–50); and (3) instruct retrieval and transmission of requested data files to the requesting local library 118 to accomplish “inter-library transfers.” Pet. 56–59 (citing Ex. 1003, ¶¶ 140–142; Ex. 1005, 4:5–7, 7:44–48, 12:40–43, 15:10–20, 17:54–66). Based on Petitioner’s persuasive argument and evidence, and reasons provided above, we are persuaded that Petitioner has shown that (1) the combination of Yurt and Logan teaches or suggests all the limitation of claim 2; (2) sufficient reasons existed with a rational underpinning to support the combination of Yurt and Logan; and (3) Patent Owner fails to rebut Petitioner’s motivation to combine Yurt and Logan.

5. *Dependent Claim 14*

Claim 14 depends on independent claim 2, via intervening claims 12 and 13, and further recites: “a step of using the recorded request information for marketing statistics and billing information.” Ex. 1001, 9:5–8.

Petitioner contends (1) “Yurt teaches maintaining databases with information about items maintained (Pet. 72 (citing Ex. 1005, 7:50–55 (“item database records”), 8:45–47 (“information records for” items that include songs), 10:66–11:4 (details regarding the item “are kept in an item database”), 11:9–21 (database recording facts about the items))); (2) “Logan further teaches storing user-specific information in ‘a user data and usage log database indicated at 143’ which includes user usage data, user

preferences, demographics, and unique program selections (*id.* (citing Ex. 1006, 5:35–45)); (3) Logan uses this stored information to generate records “of actual player use by individual subscribers,” produced “on a periodic basis in connection with financial and accounting functions including **subscriber and advertiser billing**, content provider royalty payment accounting, and **marketing analysis processing**”; and (4) “[t]he combined teachings thus render[] obvious using recorded information for billing and marketing.” *Id.* at 73 (citing Ex. 1003, ¶¶ 247–248; *see* Ex. 1006, 6:27–35.

Patent Owner responds that “[n]one of the prior art [including Yurt and Logan] asserted against the claims of the ’128 patent teach or suggest employing regional recording of ‘the digital audio files requested by said user and said user address’ for marketing/billing (claims 1 and 14)”. PO Resp. 26.

Patent Owner’s response is not persuasive because it does not meaningfully address Petitioner’s arguments. As shown above, Logan uses stored information to generate records “of actual player use by individual subscribers,” produced “on a periodic basis in connection with financial and accounting functions including **subscriber and advertiser billing**, content provider royalty payment accounting, and **marketing analysis processing**.” Ex. 1006, 6:27–35. We are persuaded by Petitioner’s showing that the combination of Yurt and Logan teaches “recording of ‘the digital audio files requested by said user and said user address’ for marketing/billing.”

For these reasons, we find that Petitioner has established that all the limitations of claim 14 are taught or suggested by the cited art. We conclude that claim 14 is unpatentable as obvious by the combination of Yurt and Logan.

6. *Claims 3, 4, 6, 9–13, and 17*

Petitioner also asserts that independent claim 12 and dependent claims 3, 4, 6, 9–11, 13, and 17 (depending from one of independent claims 2 and 12) are rendered obvious by the combination of Yurt and Logan. Pet. 59–73. Claim 12 recites a corresponding “method for distributing music” via the system of claim 2. *Id.* at 8:54–67. Patent Owner’s arguments with respect to limitations recited in claim 2 have been discussed *supra*. Patent Owner does not specifically address the showing in the Petition as to dependent claims 3, 4, 6, 9–11, 13, and 17. *See generally* PO Resp.

For the reasons set forth by Petitioner, we determine that Petitioner has established that all the limitations of claims 3, 4, 6, 9–13, and 17 are taught or suggested by the cited art. We conclude that claims 3, 4, 6, 9–13, and 17 are unpatentable as obvious by the combination of Yurt and Logan.

F. *Motion to Strike (Paper 20)*

Petitioner moves to strike a portion of Patent Owner’s Sur-Reply (PO Sur-Reply, Paper 15) because (1) PO Sur-Reply (Paper 15) “presents, for the first time, a new argument regarding “substantially real time” not included in prior briefing—*i.e.*, that the limitation requires “a coordinated operational model” in potential violation of the Board’s Trial Practice Guide (“TPG”); and (2) “[a]llowing Patent Owner to rely upon this new theory, during the oral hearing or otherwise, would prejudice Petitioner who had no opportunity to address the new theory with responsive evidence or argument.” Paper 20, 2.

Specifically, Petitioner argues that Patent Owner (1) previously argued “substantially real-time requires playback while transmission is ongoing” (PO Resp. 30), but (2) now argued “substantially real time”

requires “a coordinated operational model ... *not* satisfied by merely timing playback” and “refers to a system that, in response to a user request, determines where content resides in storage and routes the content across distribution centers *while playback is occurring*” (PO Sur-Reply 15). Paper 20, 3–5.

Patent Owner responds that (1) the Sur-Reply “does not present a new argument [or ‘a new theory’] regarding ‘substantially real time’” and (2) “the Board is capable of identifying new issues or belatedly presented evidence when weighing the evidence at the close of trial.” PO Opposition (Paper 21).

As explained in our Trial Practice Guide (“TPG”), “striking the entirety or a portion of a party’s brief is an exceptional remedy that the Board expects will be granted rarely.” CTPG, 80, Section II.K. We have reviewed the parties’ arguments, and under the circumstances here, particularly in light of the additional briefing that we authorized, we are not persuaded that such a remedy is appropriate here. As explained in our Trial Practice Guide, we are “capable of identifying new issues or belatedly presented evidence when weighing the evidence at the close of trial, and disregarding any new issues or belatedly presented evidence that exceeds the proper scope of reply or sur-reply.” CTPG, 80, Section II.K. Although we have considered Patent Owner’s arguments in the Sur-reply, in our analysis we do not rely on these arguments in a manner adverse to Petitioner. Considering the foregoing, we *deny* Petitioner’s Motion to Strike (Paper 20).

III. CONCLUSION⁹

We conclude that claims 1–4, 6, 9–14, and 17 of the '128 patent are unpatentable.

A summary of our conclusions is set forth in the table below.

Claims	35 U.S.C. §	Reference(s)	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–4, 6, 9–14, 17	103(a)	Yurt, Logan	1–4, 6, 9–14, 17	

IV. ORDER

Accordingly, it is

ORDERED that claims 1–4, 6, 9–14, and 17 of U.S. Patent No. 6,182,128 B1 are determined to be unpatentable; and

ORDERED that Petitioner's Motion to Strike (Paper 20) is *denied*; and

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

⁹ 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).

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