

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RESI MEDIA LLC,
Petitioner,

v.

BOXCAST INC.,
Patent Owner.

IPR2022-00066
Patent 9,686,574 B2

Before GEORGIANNA W. BRADEN, MICHAEL T. CYGAN, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

BRADEN, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining All Challenged Claims Unpatentable

Granting Petitioner's Motion to Strike

Denying Patent Owner's Motion to Exclude

35 U.S.C. § 318(a)

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6, and this Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine Resi Media LLC (“Petitioner”) has shown by a preponderance of the evidence that claims 1–30 (the “challenged claims”) of U.S. Patent No. 9,686,574 B2 (Ex. 1001, “the ’574 patent”) are unpatentable.

I. INTRODUCTION AND BACKGROUND

A. *Procedural History*

Petitioner filed a Petition requesting an *inter partes* review of challenged claims of the ’574 patent. Paper 1 (“Pet.”). Boxcast Inc. (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). With our permission, Petitioner filed a Preliminary Reply (Paper 10) and Patent Owner filed a Preliminary Sur-Reply (Paper 14), both of which address arguments as to discretionary denial under § 314(a). Pursuant to 35 U.S.C. § 314(a), we instituted an *inter partes* review of all challenged claims on all proposed grounds of unpatentability. *See* Paper 19 (“Dec. to Inst.”), 70.

After institution of trial, Patent Owner filed a Patent Owner Response (Paper 28, “PO Resp.”), to which Petitioner filed a Reply (Paper 41, “Pet. Reply”). Patent Owner filed a Sur-Reply (Paper 47, “PO Sur-Reply”). Petitioner then filed a Motion to Strike (Paper 50) to which Patent Owner filed an Opposition (Paper 54) and Petitioner filed a Reply (Paper 58). Patent Owner also filed a Motion to Exclude (Paper 52) to which Petitioner filed an Opposition (Paper 55) and Patent Owner filed a Reply (Paper 59).

An oral argument was held on January 25, 2023. A transcript of the oral argument is included in the record. Paper 63 (“Tr.”).

B. Real Parties in Interest

Petitioner lists Resi Media LLC (Petitioner), Pushpay Holdings Limited, and Pushpay, Inc. as real parties-in-interest. Pet. 1. Patent Owner states that it is a “real party-in-interest.” Paper 5 (Patent Owner’s Mandatory Notice), 2. The parties do not raise any issue or provide arguments regarding real parties in interest in this proceeding.

C. Related Proceedings

The parties identify the following district court case involving the ’574 patent: *BoxCast Inc. v. Resi Media LLC, PushPay, Inc. and PushPay Holdings Ltd.*, 2:21-cv-00217-JRG (E.D. Tex.). Pet. 1; Paper 5, 2. Petitioner also indicates it has filed a petition for inter partes review against U.S. Patent No. 10,154,317 (*see* IPR2022-00067). Pet. 2.

D. The ’574 Patent (Ex. 1001)

The ’574 patent is titled “Systems and Methods for Autonomous Broadcasting,” and issued on June 20, 2017. Ex. 1001, codes (45), (54). It is a continuation of U.S. Patent Application Nos. 14/876,080 and 13/045,719 (which issued as U.S. Patent No. 9,167,275 (“the ’275 patent”)), and relies on a provisional application filed on Mar. 11, 2010. *Id.* at codes (60), (63).

1. Written Description

The ’574 patent relates to a “Computer-implemented systems and methods provide for the autonomous broadcasting of video data, audio data, or video and audio data during an event, wherein the broadcasting can be schedule[d] in advance and from a remote location (i.e., over a network).” *Id.* at code (57).

The ’574 Patent purports to solve problems with distributed broadcasting systems in the prior art by splitting functions between three

remote components: (1) an automated broadcasting device or node (“ABD”); (2) a scheduling logic; and (3) a media server. Ex. 1001, Fig. 2. One embodiment of the invention is shown in Figure 2, reproduced below:

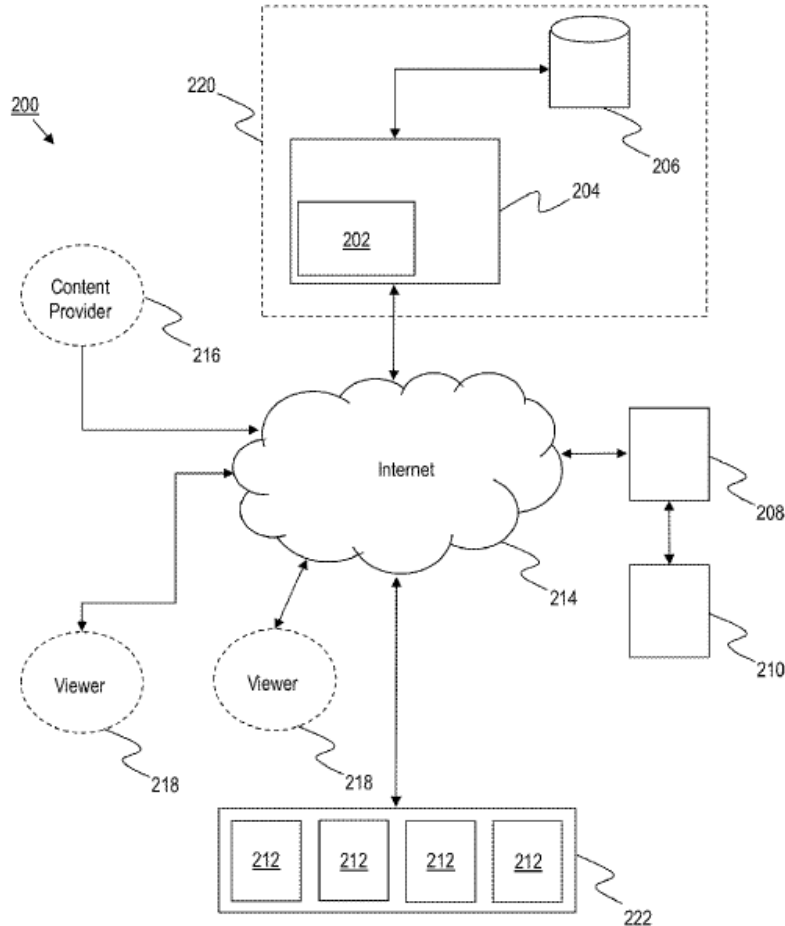


FIG. 2

Figure 2 is a diagram of autonomous broadcasting system 200. Ex. 1001, 6:32–33. The '574 patent discloses that system 200 includes scheduling software 202 installed on server computer 204, as well as autonomous broadcasting node or device 208, video acquisition device 210, and a plurality of media servers 212. *Id.* at 8:33–41. The '574 patent describes the broadcasting device 208 as “a dedicated hardware device” for broadcasting

and then provides exemplary technical specifications for the device. *Id.* at 8:56–9:20. In one exemplary embodiment, video acquisition device 210 is a digital camera capable of capturing audio and video data, and interfaces with broadcasting device 208 to transfer data to broadcasting device 208. *Id.* at 9:57–65.

In another embodiment, the '574 patent describes the autonomous broadcasting system 200 as:

simplif[ying] the task of broadcasting a secure live or pre-recorded video stream over the Internet. A content provider 216 using the autonomous broadcasting system 200 may securely broadcast live video by installing the broadcasting device 208 and subsequently scheduling events via the scheduling software 202 implemented as a scheduler website on the server computer 204. In the autonomous broadcasting system 200, the content provider 216 is remote from the scheduling software 202 and, thus, accesses the scheduling software 202 over the Internet 214. However, in an autonomous broadcasting system 300, according to an alternative exemplary embodiment, as shown in FIG. 3, the content provider 216 is at the same physical location as the scheduling software 202 (i.e., the server computer 204). Accordingly, in the autonomous broadcasting system 300, the content provider 216 can directly access the scheduling software 202, for example, by using an input device (not shown) of the server computer 204.

Id. at 10:10–28. The '574 patent also contemplates minimizing the capital expenditure associated with purchasing and maintaining of media servers 212 by renting use of media servers 212 from a third-party provider of a cloud computing service and/or a cloud storage service. *Id.* at 10:3–9.

According to certain embodiments in the '574 patent, “[a]t the time that an event is scheduled to begin, the broadcasting device 208 automatically powers on any other required hardware (i.e., the video acquisition device 210) and begins encoding and publishing (i.e., uploading)

a secure live video stream to the media servers 212. Media servers 212, as streaming servers, make this live video stream available to as many viewers 218 as possible.” *Id.* at 10:39–45. Additionally, the ’574 patent discloses that scheduling logic 220 is responsible for directing a request from viewer 218 to specific media server 212 and monitoring loads of individual media servers 212. Based on these factors, according to the ’574 patent, scheduling logic 220 dynamically allocates resources using the cloud computing service. *Id.* at 10:57–62.

The ’574 patent describes the primary functions of broadcasting device 208 as: (1) capturing and encoding video, (2) publishing a video stream to a video server, and (3) managing local video capture hardware. *Id.* at 12:19–23. While broadcasting device 208 (once set up) can initiate communications on its own, it also can be controlled by a remotely located scheduling logic 220. *Id.* at 10:10–20. Scheduling logic 220, in various embodiments, can (1) maintain a schedule of events and provide a user interface for entering events, (2) manage the scaling of the media servers, (3) manage access of ABDs to the media servers, and (4) manage access of viewers to secure video streams. *Id.* at 11:42–61, Figs. 18–22. In one embodiment, broadcasting device 208 repeatedly sends an event schedule request, for example every 5, 30 or 60 seconds. *Id.* at 18:62–19:4. Scheduling logic 220 responds with data relating to a recording time that is sufficient to inform broadcasting device 208 that it should or should not be broadcasting at that time. *Id.* at 19:5–11. In another embodiment, the “event schedule request” is not for actual schedule data, but is instead a status request. *Id.* at 19:12–29. Specifically, broadcasting device 208 sends a token representing its present instructions and scheduling logic 220 responds

with a “status code” indicating whether broadcasting device 208’s present instructions match what is stored in scheduling logic 220. *Id.*

The ’574 patent also explains that, in certain embodiments, the primary functions of the media servers are: (1) making video streams available for viewing by many users, (2) maintaining secure access to streams, (3) storing live broadcast for later, on-demand viewing, and (4) facilitate the uploading of higher-quality recordings from broadcasting device 208. *Id.* at 12:51–62.

2. *Illustrative Claims*

As noted previously, Petitioner challenges claims 1–30 of the ’574 patent, of which claims 1, 6, 12, and 22 are independent. Pet. 4; Ex. 1001, 27:8–28:46. Claims 1 and 12 are illustrative of the challenged subject matter and are reproduced below.

1. A method comprising:

situating an autonomous broadcast device (ABD) behind a router; and

establishing an Internet connection for the ABD behind the router, wherein the router prevents remote access to the ABD from outside the router,

wherein, the ABD autonomously performs the following actions without any modification to or circumvention of the router:

issue a request via the Internet connection to a first server situated outside the router and receive data relating to a recording start time of a live event from the first server in response to the request;

receive digital content of the live event after the recording start time from a digital recording device proximate to the live event;

transmit streaming information via the Internet connection to a second server, wherein the second server is configured to stream the digital content to a plurality of users;

transmit the digital content via the Internet connection to the second server contemporaneously with the live event and based on the data relating to the recording start time;

receive data relating to a recording end time for the live event from the first server via the Internet connection; and

cease transmission of the digital content based on the data relating to the recording end time.

Ex. 1001, 26:32–67.

12. A system comprising:

an autonomous broadcasting device (ABD) situated behind a router;

scheduling logic remote from and in data communication with the ABD over a network; and

a server,

wherein the scheduling logic interfaces with a first user to allow the first user to set a recording start time for a live event,

wherein, in response to a request initiated autonomously by the ABD, the scheduling logic transmits data relating to the recording start time to the ABD over the network without modification or circumvention of the firewall, wherein, based on the data relating to the recording start time, the ABD autonomously transmits video data of the live event without modification or circumvention of the firewall contemporaneously with the live event from a video acquisition device to the server over the network, and

wherein the server transmits the video data as a live video stream to a second user over the network.

Id. at 27:42–62.

E. Asserted Challenges to Patentability and Evidence of Record

Petitioner challenges the patentability of claims 1–30 of the '574 patent based on the following combination of references:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–17, 21–24, 26, 30	103 ¹	Allen ² , Maes ³
18–20, 25, 27–29	103	Allen, Maes, Slater ⁴
18–20, 27–29	103	Allen, Maes, Hurst ⁵
1–17, 21–24, 26, 30	103	Allen, Maes, Horowitz ⁶
18–20, 25, 27–29	103	Allen, Maes, Horowitz, Slater
18–20, 27–29	103	Allen, Maes, Horowitz, Hurst
1–17, 21–24, 26, 30	103	Kim ⁷ , Maes
18–20, 25, 27–29	103	Kim, Maes, Slater
18–20, 27–29	103	Kim, Maes, Hurst

In support of its patentability challenge, Petitioner relies on, *inter alia*, the Declarations of William C. Easttom, II, Ph.D. (“Dr. Easttom”). Ex. 1007; Ex. 1056. Patent Owner provides the testimony of Robert Akl, Ph.D. (“Dr. Akl”) to support its position. Ex. 2001.

II. PRELIMINARY MATTERS

A. Claim Construction

A claim “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b).” 37 C.F.R. § 42.100(b) (2020). Under that standard, the

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. § 103 that became effective as of March 16, 2013. The application for the ’574 patent was filed after March 16, 2013, but includes a priority claim to an application filed before this date. Ex. 1001, codes (22), (60), (63). Accordingly, we apply the pre-AIA version of 35 U.S.C. § 103, but our analysis would be the same under the current version of the statute.

² WO 2008/011380 A2, published Jan. 24, 2008 (“Allen,” Ex. 1008).

³ US 2006/0041431 A1, issued Feb. 23, 2006 (“Maes,” Ex. 1009).

⁴ US 7,441,261 B2, issued Oct. 21, 2008 (“Slater,” Ex. 1013).

⁵ US 2008/0263180 A1, published Oct. 23, 2008 (“Hurst,” Ex. 1014).

⁶ US 2004/0078817 A1, published Apr. 22, 2004 (“Horowitz,” Ex. 1010).

⁷ Korean Patent Publication 2003-0072422, published Sept. 15, 2003 (“Kim,” Ex. 1011).

“words of a claim ‘are generally given their ordinary and customary meaning,’” Which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Petitioner provides constructions of nine terms or phrases. Pet. 7–14. Patent Owner argues against two of those constructions: (1) autonomous broadcast device and (2) without any modification to or circumvention of the router [firewall]. PO Resp. 16–24. Because both of these terms are in controversy, we analyze and construe them below.

1. “*autonomous broadcast device*” (“ABD”)

With respect to the term “autonomous broadcast device” (“ABD”), Petitioner contends that it should be construed as a means-plus-function term under 35 U.S.C. § 112(6). Pet. 7–8. Petitioner’s proposed construction, however, is “a device capable of broadcasting video and audio content without user intervention.” *Id.* (citing Ex. 1001, 8:39–9:65, 9:10–28, 9:39–56, 12:7–38, Figs. 2–8).

Patent Owner contends that the claimed ABD must have a processor that is optimized for video and audio compression. Resp. 16. Patent Owner argues that the ’574 patent provides a “repeated and consistent” description of the ABD as being optimized for video and audio compression. *Id.* (citing *Groove Digital, Inc. v. United Bank*, 825 Fed. Appx 852, 856 (Fed. Cir. 2020)). Patent Owner relies on two statements from the patent to support this contention; namely, that “[t]he commissioning process involves adding software onto a processor representing broadcasting hardware to form *a device capable of transmitting live video data to a server*,” and “[a] minimum configuration for the broadcasting device 208 processor system

includes a processor (e.g., the DM365 processor and/or some other *processor optimized for video and audio compression*).” *Id.* at 17 (citing Ex. 1001, 5:61–65, 9:9–12).

Patent Owner argues that the claimed ABD provides many advantages over the use of a general-purpose computer, such as a smaller footprint, lower cost, better reliability, lower power consumption, and lower chance of manipulation of the data. *Id.* at 18 (citing Ex. 1001, 9:21–53). According to Patent Owner, a person of ordinary skill in the art in 2010 would “have known that general-purpose computers did not have a processor optimized for video and audio compression, and that use of such hardware was a specialized and complex undertaking generally reserved for high-end products aimed at larger content servers, not consumer-end products. *Id.* at 18–19 (citing Ex. 2017 ¶¶ 46–47; Ex. 1001 2:26–44); *see also* Tr. 55:4–57:11 (“optimization means . . . hardware that is specifically designed for video compression . . .”).

To the contrary, Petitioner argues that the cited example in the Specification is non-limiting, and that the two statements relied upon by Patent Owner do not narrow the more general description found in the Specification, of processor 106 that “includes, but is not limited to, any programmed or programmable electronic device or coordinated devices that can store, retrieve, and process data and may be a processing unit or in a distributed processing configuration.” Reply 3–4 (citing Ex. 1001, 7:60–64, Fig. 1).

With respect to the claimed ABD, we determine that even under Patent Owner’s construction requiring a “processor optimized for audio and video compression,” Petitioner has shown the independent claims would

have been obvious over Allen and Maes. Therefore, we need not construe the term to resolve the obviousness contentions at issue.⁸

2. “*without modification or circumvention of the router*”

The phrase “without modification or circumvention of the router” is recited in claim 1, with similar phrases in claims 6, 12, and 22. Petitioner proposes that this phrase be construed to mean “using communication protocol(s) that enable communication through the router [firewall].” Pet. 8. Petitioner relies on language in the Specification relating the claimed phrase to the use of the ABD to initiate communication with the server. *Id.* at 9 (citing Ex. 1001, 16:3–28, 18:51–61). Petitioner further relies on statements of the Patent Owner concerning that term in a district court proceeding. *Id.* at 6 (citing Ex. 1017, 10; Ex. 1006, 23, 25) (“During litigation, [Patent Owner] states the ’574 Patent’s ‘most central problem’ is a ‘barrier to remote scheduling posed by network devices such as routers and firewalls,’ and ‘[t]he patent creatively solves this problem by initiating all intrasystem communications from the ABD inside the router or firewall,’ which [Patent Owner] contends ‘was not known or conventional.’”). Petitioner also points to extrinsic evidence to show that a person of ordinary skill would have known that routers and firewalls “were ubiquitous and certain communications protocol(s) could enable transmissions to pass through (*i.e.*,

⁸ To the extent Patent Owner argues that this term includes additional requirements, such as “sufficient power to provide quality livestreaming” (Sur-Reply 18; Tr. 53:8–14) Patent Owner failed to timely advocate such a construction in its Patent Owner Response. *See* PO Resp. 16–20 (arguing that the processor must be “optimized” for compression and distinguishing a general-purpose processor); *see also* Paper 18 (Scheduling Order), 9 (cautioning Patent Owner that “arguments not raised in the response may be deemed waived”).

not circumvent) a router/firewall without modifying the router/firewall.” *Id.* at 9–10 (citing Ex. 1007 ¶¶ 52–55, 188; Exs. 1015, 1016, 1036–1041).

Patent Owner states it does not believe any formal construction is needed for the claimed phrased but contends the term “modification” would include techniques, such as port forwarding, that change settings on the router. PO Resp. 20–21, n.9 (citing Ex. 2017 ¶¶ 49–50); 14 (citing Ex. 1001, 1:37–43). Patent Owner further argues that “circumvention” would include external networking techniques such as a Virtual Private Network (“VPN”) or a DeMilitarized Zone (“DMZ”). *Id.* at 21; *see* 14 (citing Ex. 1001, 1:43–46, 1:58–2:2). Patent Owner characterizes the effect of either circumvention or modification as “allow[ing] communications from outside the router to reach the ABD that would otherwise be blocked because of the router’s NAT [network address translation] functionality.” *Id.* at 14. Patent Owner further characterizes a “hidden ABD problem,” in which a “scheduling server cannot reach the ABD behind a router because the scheduling server knows only the WAN IP [Wide Area Network Internet Protocol] (public address) of the ABD’s network and cannot reach the private address of the ABD itself.” *Id.*

Petitioner argues that Patent Owner’s construction is unduly narrow and ambiguous, thereby making it unclear as to when such router settings may not be changed, and what settings an unchanged router may or may not contain. Reply 5–6. Petitioner argues that the claim, at most, would prohibit changing router settings during the performance of the claimed steps, but would not restrict changing settings prior to performance of the claimed method. *Id.* at 6.

Patent Owner clarifies its construction as requiring “only that the router not be circumvented or modified for the purpose of permitting a

server to communicate over the internet with an ABD behind the router.”
Sur-reply 5.

Based on the evidence of record, we analyze and construe the phrase “without modification or circumvention of the router” as follows. We begin with the language of the claims and the originally-filed disclosure. With respect to the originally-filed disclosure of the ’574 patent, no explicit discussion is presented to define or explain the terms “modification” or “circumvention.”

With respect to the claims as a whole, the “without modification to or circumvention of” is a limitation to specific steps or configurations, not to the entirety of the claimed method (for method claims 1–11, 22–30) or system (for system claims 12–21). Using claim 1 as an example, the ABD must, “without any modification to or circumvention of the router . . . receive data . . . from the first server.” Ex. 1001, 26:32–60. Claim 1 also requires “establishing an Internet connection for the ABD behind the router” in which the “router prevents remote access to the ABD from outside the router.” *Id.* at 26:35–37. However, the router cannot simultaneously prevent (all) remote access to the ABD from outside the router and also permit the first server to send data to the ABD. So, the claim limits these two actions to the individual steps in which they appear. Therefore, only during the “establishing an Internet connection” step is the router required to “prevent remote access to the ABD.” And only the six autonomous ABD actions recited in the claim are required to be performed “without modification or circumvention of the router.”

With respect to the scope of “without modification or circumvention of the router” during the six claimed actions, the ’574 patent provides examples of permissible and impermissible activity. For example,

actions/configurations such as pre-registration of the ABD with the scheduling logic of the content provider are permitted in view of the '574 patent's description that "[p]rior to shipping each broadcasting device 208 . . . the scheduling logic [at the remote server 204] receives a record for that broadcasting device with its secret password." Ex. 1001, 17:56–60.

As for impermissible actions, the '574 patent describes altering the router's settings, such as by port forwarding, or establishing an external network, such as by placing the ABD in a DMZ or installing a VPN server, as attempts to address problems due caused by ABDs not being able to be controlled remotely when placed behind a user's firewall. Ex. 1001, 1:33–2:2. We agree with Patent Owner's characterization of these as actions that would modify or circumvent the router.

Patent Owner argues that modification and certification should be understood as viewed by a person having ordinary skill in the art at the time of the invention, yet also in recognition of the desirability of designing a system for the lower knowledge of networking held by a "typical consumer," "average user," or "laypeople," which is described as part of the solution provided by the '574 patent. Resp. 7, 15, 23. Although the '574 patent is intended to benefit or aid a "layperson," the disclosure itself setting up and using systems and methods for "remotely scheduling autonomous broadcasting of video data in advance." Ex. 1001, 3:37–40. Therefore, we interpret the claim language in light of one having ordinary skill in the art, and do not further limit the claims by the ability of an "average user."

Accordingly, we construe the phrase "without modification or circumvention of the router" to be a limitation to specific steps or configurations during (1) the "establishing an Internet connection" step so the router will "prevent remote access to the ABD" and (2) the six stated

autonomous ABD actions. Actions altering the router's settings, such as by port forwarding, or establishing an external network, such as by placing the ABD in a DMZ or installing a VPN server, constitute prohibited modification and/or circumvention of a router.

3. *Additional Claim Terms*

Construction is needed only for those terms “that are in controversy, and only to the extent necessary to resolve the controversy.” *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). With respect to the terms “scheduling logic,” “streaming information,” “contemporaneously with the live event,” “transmitted [received] out of band,” and “dynamically scaling the server based on demand,” these terms are not in controversy. Thus, we need not construe those terms.

B. Legal Principles

A claim is unpatentable under 35 U.S.C. § 103 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.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, objective evidence of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also “determine

whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Whether a combination of prior art elements would have produced a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–417.

In an *inter partes* review, the petitioner must show with particularity why each challenged claim is unpatentable. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016); 37 C.F.R. § 42.104(b). The burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

C. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quotation marks omitted). Furthermore, the prior art itself can reflect the appropriate level of ordinary skill in the art. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Here, Petitioner asserts, a person of ordinary skill in the art by March 2010:

would have had at least (1) a master’s degree (or equivalent course work) in computer science, computer engineering, or electrical engineering, and two years’ experience in networked systems or applications, or (2) a bachelor’s degree in computer science, computer engineering, or electrical engineering, and

four years' experience in networked systems or applications, or the equivalent, which would include experience in network programming.

Pet. 5 (citing Ex. 1007 ¶ 28).

Patent Owner does not specifically assert a level of skill in the art.

Patent Owner's declarant, Dr. Akl, does testify that a person of ordinary skill in the art of the '574 patent:

would have . . . a Bachelor's degree in electrical engineering, computer engineering, computer science, or a related field, and 2–3 years of experience in the design or development of telecommunication and networked systems, or the equivalent. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education.

Ex. 2017 ¶ 35.

Under either level of skill, a person having a bachelor's degree in computer engineering or a related field, and a couple years' experience in networked systems or the equivalent would qualify as a person having ordinary skill in the art. The primary difference between Petitioner's assessment and Dr. Akl's is whether "2–3 years" or "four years" of experience is appropriate, neither explains why their assessment is appropriate. *See* Ex. 1007 ¶ 30; Ex. 2001 ¶¶ 20, 21 (addressing without argument or comment the assessment of Petitioner's declarant); Ex. 2017 ¶ 35. For our analysis, we do not determine this difference to be dispositive; rather, we determine that the appropriate level is between two and four years of experience.

D. Overview of Asserted Prior Art of Record

1. Allen (Ex. 1008)

Allen is International Patent Application Publication No. WO 2008/011380 A2, published on January 24, 2008, titled “Coordinated Upload of Content from Distributed Multimedia Capture Devices.” Ex. 1008, codes (10), (43), (54). Allen discloses Multimedia Capture Devices (“MCDs”) “configured to capture, process, store and/or send real-time media signals (e.g., audio signal, video signal, visual-capture signal, and/or digital-image signal) of, for example, an in-progress classroom presentation.” Ex. 1008 ¶ 1015. According to Allen, the MCDs “are configured to upload (e.g., send, transfer) one or more portions of media signals to an entity, such as a network device or a control server(s), within a network.” *Id.* ¶ 1016. Allen teaches that “[t]he sending of one or more portions of a media signal from a multimedia capture device over the network is triggered (e.g., modified) by a transmission indicator that indicates, for example, a start transmission time and/or a transmission rate.” *Id.* ¶¶ 1016, 1059. The transmission indicator in Allen can be defined by a transmission rule or set of transmission rules that use one or more local parameter values and/or one or more regional parameter values. *Id.* ¶ 1017.

One embodiment of Allen is illustrated in Figure 1, reproduced below.

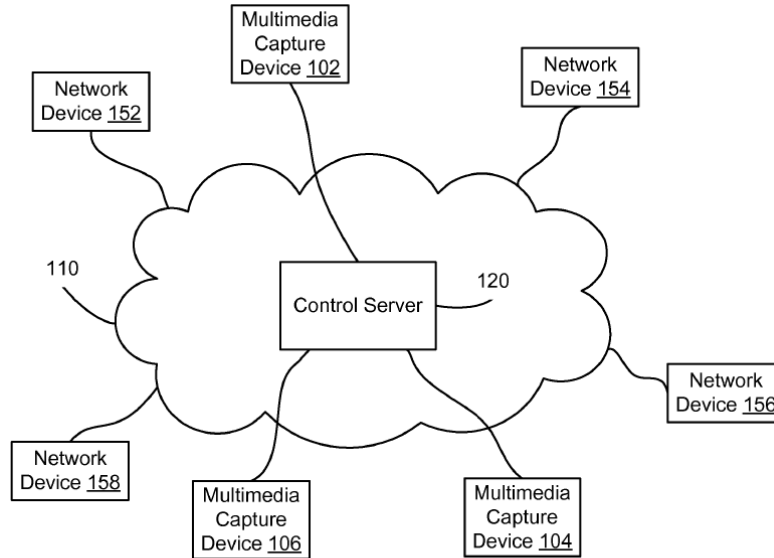


FIG. 1

Figure 1 of Allen, above, is a block diagram illustrating MCDs 102, 104, and 106 distributed across network 110 and in communication with control server 120. *Id.* ¶ 1020. Allen discloses that after a media signal(s) is captured, processed and/or stored by one or more of multimedia capture devices 102, 104, and 106, multimedia capture devices 102, 104, and 106 are configured to send (e.g., upload, transfer) one or more portions of the media signal(s) to an entity connected to network 110 such as control server 120. *Id.* Allen teaches that several network devices 152, 154, 156, and 158 such as, for example, personal computers and/or servers are also in communication with and are configured to send and/or receive signals over network 110. *Id.* According to Allen, network 110 can be any type of network including a local area network (LAN) or wide area network (WAN). *Id.*

Another embodiment of Allen is illustrated in Figure 6, reproduced below.

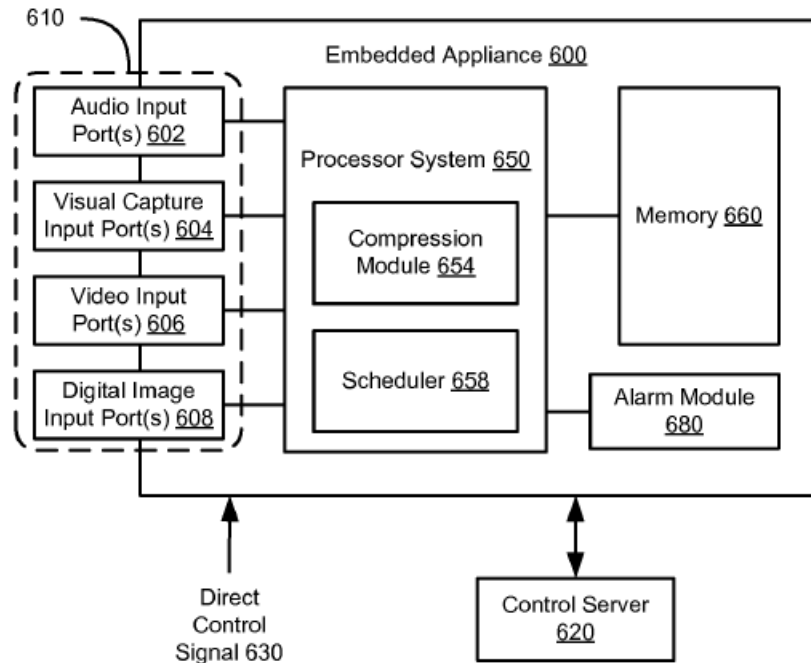


FIG. 6

Figure 6 of Allen, above, illustrates a system block diagram of embedded appliance 600 that has input ports 610, processor system 650, memory 660 and alarm module 680. *Id.* ¶ 1074. Allen discloses that embedded applicant 600 is in communication with control server 620 and can capture real-time media signal(s) including digital-image signals, visual-capture signals, audio signals and/or video signals. *Id.* According to Allen, after the media signal(s) have been captured, embedded appliance 600, control server 620 and/or another processing device can process the real-time signal(s) by, for example, compressing, indexing, encoding, decoding, synchronizing and/or formatting the content before the content of the media signals is made available for distribution. *Id.*

Allen’s MCD includes a scheduler 658, shown Figure 6 above, that “access[es]” the schedule, “either stored locally” or “on the control server,” and generates “start and stop indicators” prompting the MCD to “start and stop capturing and/or start and stop sending media signals.” *Id.* ¶ 1082

(emphasis added). To schedule recordings, Allen teaches that a separate scheduler 830 (e.g., “a server . . . or a remote computer”), which user 840 can access, stores the schedule. *Id.* ¶¶ 1100–1101. According to Allen, the schedule corresponds to a university class schedule and includes “capture records” specifying “a class time (e.g., start time indicator), duration (e.g., used to derive a stop time indicator), and location (e.g., venue).” *Id.* ¶ 1099. Allen discloses that after a media signal(s) is captured, the MCD can “immediately” transmit the media signal(s) to a network entity, such as the control server(s). *Id.* ¶ 1020, ¶ 1022. In Allen, MCDs can also transmit media signals while a live event is still underway, i.e., transmit “while capturing, processing, and/or storing another portion of the same media signal.” *Id.* ¶¶ 1023–1024. Real-time media signals are transmitted by Allen’s MCDs “for eventual retrieval by a user from, for example, the control server and/or a server(s).” *Id.* ¶ 1075.

2. *Maes (Ex. 1009)*

Maes is a U.S. Patent Publication, published on February 23, 2006, titled “Conversational Networking via Transport, Coding, and Control Conversational Protocols.” Ex. 1009, codes (12), (43), (54). Maes discloses a system and method for implementing conversational protocols for distributed conversational networking architectures and/or distributed conversational applications, as well as real-time conversational computing between network- connected pervasive computing devices and/or servers over a computer network. *Id.* at code (57). According to Maes, the conversational protocols are for implementing DSR (distributed speech recognition) applications over a network. *Id.* ¶ 3. Maes specifically discloses streaming digital content (audio/video) to a server using a protocol such as Real-Time Transport Protocol (RTP). *Id.* ¶¶ 125, 159, 207.

One embodiment of Maes is illustrated in Figure 9, reproduced below.

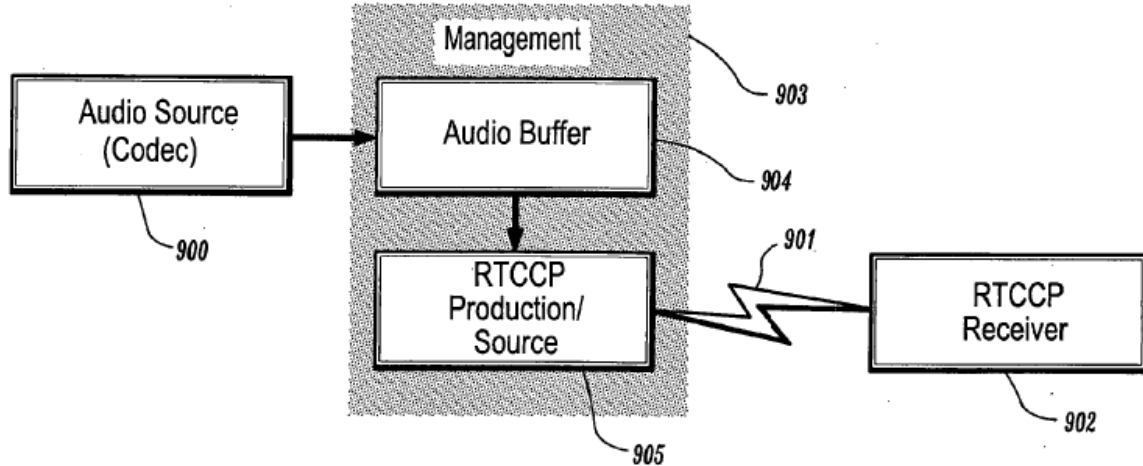


FIG. 9

Figure 9 illustrates a diagram of a system for generating a Real Time Conversational Coding Protocol (“RTCCP”) data stream. *Id.* ¶ 31.

According to Maes, audio source (codec) 900 generates audio/speech data to be transmitted over network 901 to receiver 902. *Id.* ¶ 138. The transmitter comprises system manager 903, which manages an audio buffer and RTCCP generator 905. *Id.*

Another embodiment of Maes is illustrated in Figure 22, reproduced below.

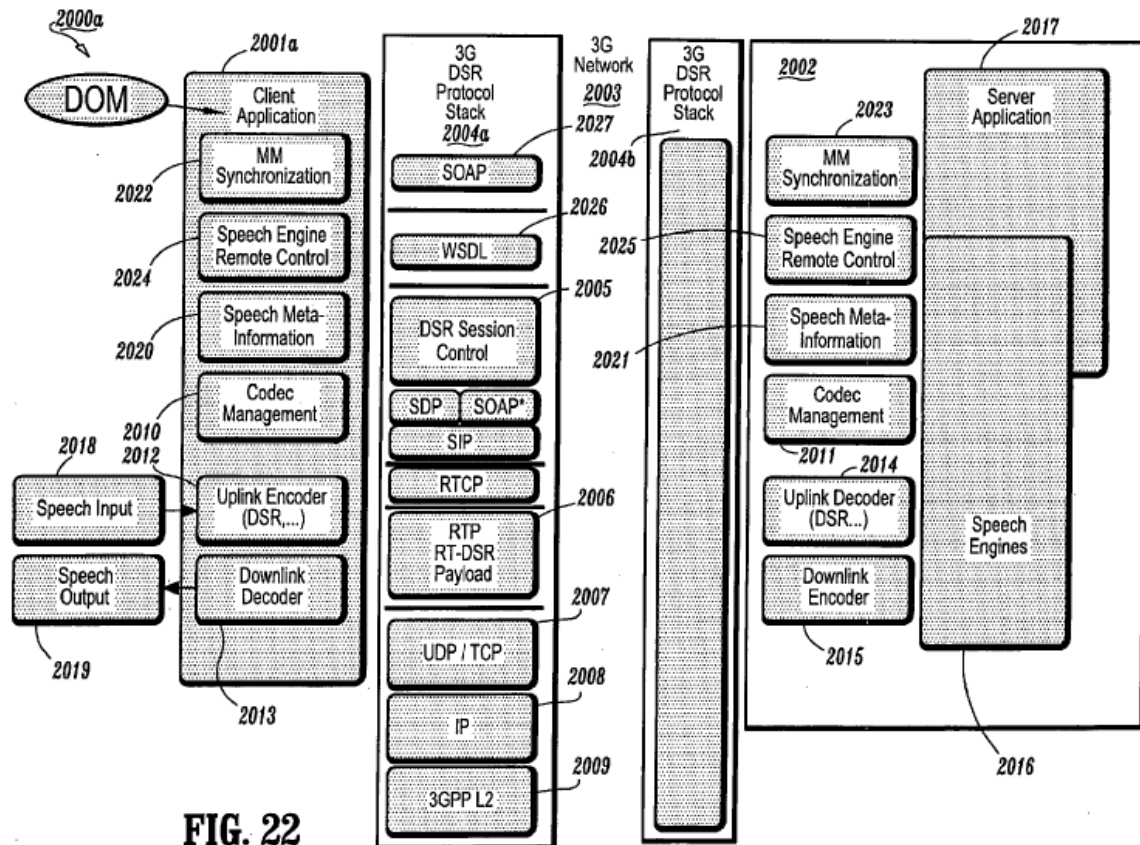


FIG. 22

Figure 22 of Maes shown an SDR system that supports multi-modal synchronization modules 2022 (client) and 2023 (server) for managing the metainformation that enables synchronization of different views (speech, GUI) of a multi-modal browser application 2001a (e.g., multi-modal DOM-based browser. *Id.* ¶ 305. Maes also teaches use of speech engine remote control modules 2024 (client) and 2025 (server) for managing meta-information that enables remote control of conversational engines 2016. *Id.*

Maes discloses that audio (speech input 2018) is encoded according to particular encoding scheme, e.g., preferably a DSR optimized codec (e.g. Reco VC), or any other suitable scheme. *Id.* ¶ 306. According to Maes, the encoded data (e.g., DSR data) is transported on the network transport layers via RTP (RT-DSR payload). In addition, codec description, negotiation,

dynamic switches and setup is preferably exchanged via SDP over SIP or SOAP over SIP. *Id.*

Another embodiment of Maes is illustrated in Figure 28, reproduced below.

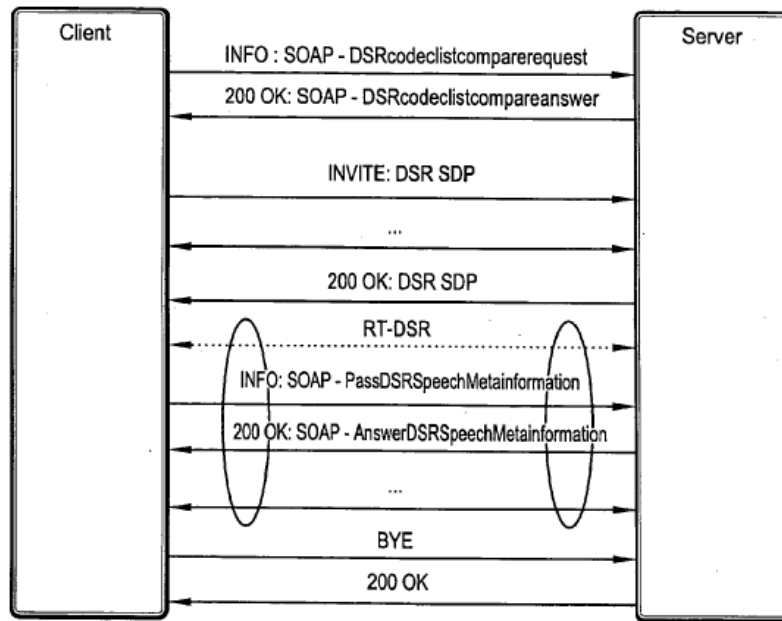


FIG. 28

Figure 28 of Maes shows SDR session exchanges associated with a SOAP/SIP session where the BYE and dynamic codec switches are symbolically in the last set of changes. *Id.* ¶ 307. SOAP provides a mechanism for information exchange using HTTP and XML to provide communications between systems in a network. *Id.*

3. Slater (Ex. 1013)

Slater is a U.S. Patent, issued on October 21, 2008, titled “Video System Varying Overall Capacity of Network of Video Servers for Servicing Specific Video.” Ex. 1013, codes (12), (45), (54). Slater discloses “serving out video over a network of video servers” using “scalable serving”

“dynamically . . . between available resource servers in accordance with demand for the resources, and the capacity of the resource servers is collectively variable to serve out demand for a particular resource.”

Ex. 1013, code (57), 10:7–12, 16:29–33.

One embodiment of Slater is shown in Figure 3, reproduced below.

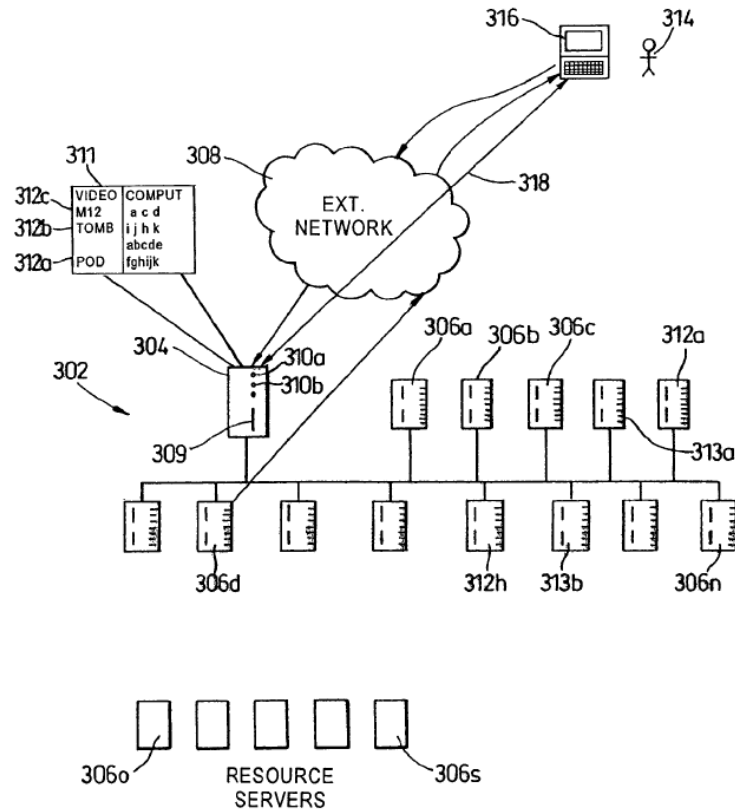


Fig. 3

Slater’s Figure 3, above, is a schematic illustration of one embodiment of a modified data storage system with networked video server farm 302, director unit 304, and a plurality of resource servers 306 *a-n*. *Id.* at 24:12–13. Slater explains that “[a]s the demand for a particular video increases,” demand director unit 304 “writes the popular video data to additional resource servers 306 *d-n* that are within the server farm 302.” *Id.* at 28:55–57. Additionally, Slater discloses that should “demand for a video increase so

much that there are not sufficient resource servers 306 within the farm 302, the demand director unit 304 adds additional resource servers 306 *o-s* to the server farm 302.” *Id.* at 28:58–61. Slater further discloses collecting user information and “server-utilization statistics” for video content. *Id.* at 12:13–22, 13:49–57, 36:44–50.

4. *Hurst (Ex. 1014)*

Hurst is a U.S. Patent Publication, published on October 23, 2008, titled “Apparatus, System, and Method for Resilient Content Acquisition.” Ex. 1014, codes (12), (43), (54). Hurst is directed to content acquisition using a content delivery network such as the internet, where the content (“data, audio, and video”) is maintained on an origin server, and may include live “video stream[s]” such as “of a sporting event.” Ex. 1014, code (57), ¶¶ 2, 12, 39, 41, 65.

One embodiment of Hurst is illustrated in Figure 2, reproduced below.

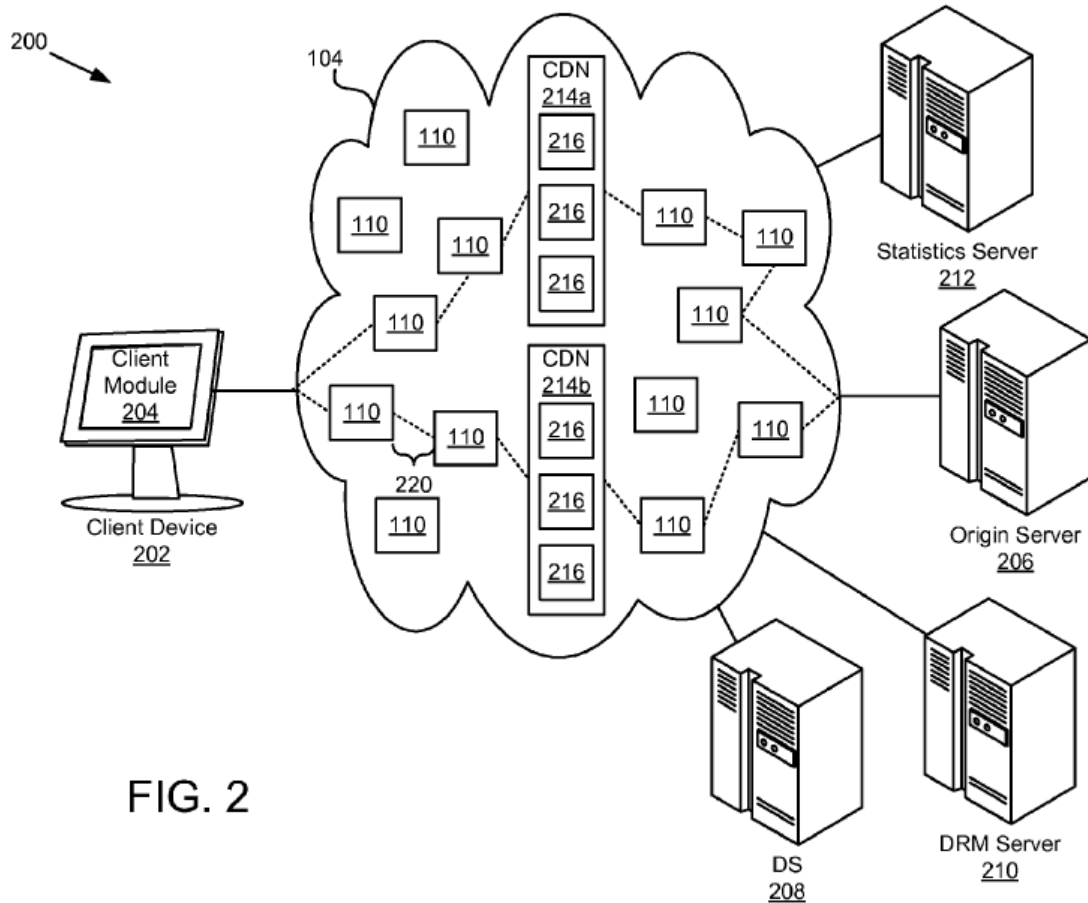


FIG. 2

Figure 2 shows a schematic block diagram illustrating resilient content acquisition system 200. *Id.* ¶ 24. Hurst discloses that system 200 includes client device 202, client module 204, origin server 206, directive server (DS) 208, digital rights management (DRM) server 210, statistics collection server 212, and content delivery network (CDN) 214. *Id.* ¶ 39. According to Hurst, statistics server 212 collects “content usage and client performance statistics” and records “the IP address of the client” for implementing “location policies.” *Id.* ¶¶ 45–46, 72.

III. ANALYSIS OF PRIOR ART CHALLENGES

A. *Alleged Obviousness of Claims 1–17, 21–24, 26, and 30 in View of Allen and Maes*

Petitioner contends claims 1–17, 21–24, 26, and 30 would have been obvious to a person of ordinary skill in the art in view of the combined teachings of Allen and Maes. Pet. 31–58. Patent Owner disagrees, arguing, *inter alia*, that Allen and Maes do not teach “an autonomous request is used to communicate with an ABD behind a router without modification or circumvention of the router,” as required by all of the challenged claims. PO Resp. 27–40. For the reasons discussed below, we determine Petitioner has shown by a preponderance of the evidence that all challenged claims are unpatentable over Allen and Maes.

1. *Analysis of Independent Claim 1*

a) *“situating an autonomous broadcast device (ABD) behind a router”*

Claim 1 recites “situating an autonomous broadcast device (ABD) behind a router.” Ex. 1001, 26:33–34. Petitioner contends that Allen discloses situating an ABD behind a router because Allen’s Multimedia Capture Device (“MCD”) is “configured to capture, process, store and/or send real-time media signals” and communicates with remote devices over a WAN. Pet. 33 (citing Ex. 1008 ¶¶ 15, 20, Figs. 6, 8). According to Petitioner, Allen’s use of a WAN “strongly suggests” that the MCD is behind a router. *Id.* at 34 (citing Ex. 1007 ¶ 226). Petitioner argues that “it was ubiquitous to use a router to route a network connection to devices in a local network and to enable communications with devices outside the home or business, i.e., other devices on a WAN.” *Id.* Petitioner cites to Allen’s Figure 8 with MCD 802 and 804 being associated with venue A and connected to

the WAN, thereby “implying these MCDs are connected to a router at venue A to enable communications for these MCDs over the WAN.”

Id. (citing Ex. 1008 ¶ 1092). Petitioner further argues that a person of ordinary skill in the art “would have understood the most common network configuration for Allen’s MCD would involve situating it behind a router.” *Id.* (citing Ex. 1007 ¶ 228).

Petitioner then cites to Maes’s disclosure of routers and firewalls and the explicit statement that “client devices . . . can access desired information from a [server] system 1904 by connecting via . . . a router 1004.” *Id.* (citing Ex. 1009 ¶ 180, Fig. 19). According to Petitioner, “[c]onnecting to a server via a network, such as ‘the Internet’ (*id.*, [0180]) and a router discloses or suggests the client device is situated behind and communicates through a router.” *Id.* (citing Ex. 1007 ¶ 229). Petitioner argues that a person of ordinary skill in the art would have understood “Maes’s disclosure of ‘gateways and firewalls’ that are ‘end-to-end’ in the system to teach a client device situated behind a router, gateway, and/or firewall.” *Id.* at 35 (citing Ex. 1007 ¶ 230). Petitioner concludes that “[a]t any rate, it would have been obvious to situate Maes’s client device behind a gateway/router to enable it to communicate over the Internet as Maes requires.” *Id.* (citing Ex. 1007 ¶ 230).

Patent Owner contends that the presence or absence of a router is irrelevant. PO Resp. 31. Rather, according to Patent Owner, the issue is with the restrictions placed on such a router in relation to an entire system. *Id.* Patent Owner argues that “the lack of routers indicates that these references were not even contemplating the problem addressed in the ’574 Patent —finding a solution to the Hidden ABD Problem for laypeople— because [a person of ordinary skill in the art] already had cheaper and

simpler workarounds.” *Id.* Patent Owner further argues that given the “serious drawbacks” of the ’574 Patent over prior art methods, a person of ordinary skill in the art would not have had reason to attempt the claimed methods. *Id.* at 32.

Patent Owner also contends that Allen does not teach an ABD, as it has construed the term, because Allen fails to show a processor that is optimized for audio and video compression. PO Resp. 45; Sur-Reply 18. According to Patent Owner, Allen’s compression module 54 is insufficient to indicate Allen is optimized because a person of ordinary skill in the art in 2010 would, “assume that the ‘compression module 654’ was software compression typical of that era, not hardware compression through an optimized processor.” PO Resp. 45 (citing Ex. 2007 ¶ 142); Sur-Reply 18. Patent Owner then asserts that Petitioner’s citations to Allen’s encoders is insufficient because “software-only encoders at the time of invention lacked sufficient power to provide quality livestreaming.” Sur-Reply 18 (Ex. 1001 2:19-35). Patent Owner also argues that “processor system 650 of Allen also includes a general DSP, which is contrary to the ’574 Patent, which specifically states no DSP is needed when using a processor optimized for audio and video compression.” PO Resp. 46 (citing Ex. 1001 8:59–61).

We do not agree with Patent Owner’s position. First, we do not agree that Allen lacks an ABD behind a router. Rather, we credit the testimony of Dr. Easttom that a “network has to have a router,” and “a router must be present in Allen” given Allen’s use of WANs with the Internet being one example of a WAN. Ex. 1007 ¶¶ 226, 228; Ex. 2001 ¶ 85; *see* Ex. 2005, 125:19–126:25. Dr. Akl also characterizes WANs at the critical time as having a “single, unique, public outfacing address,” referred to as its “WAN IP,” and that the term “WAN IP was used in the reference materials for

nearly every major router manufacturer.” Ex. 2017 (citing Ex. 2032, 2 (“share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network”)). Dr. Akl further describes client devices in a Local Area Network as connecting to other devices on the Internet through a router. *Id.* ¶ 43.

Second, we find that Allen discloses an ABD, even under Patent Owner’s construction, because Allen’s MCD (1) is a “dedicated (i.e., specific-purpose) device” and not merely a general-purpose computer, and (2) is “configured to capture, process, store and/or send real-time media signals (e.g., audio signal, video signal . . .)” and broadcast the audio/video content over a network. *See* Ex. 1008 ¶¶ 1015, 1021, 1076–1077, Figs. 6, 8; Ex. 1056 ¶¶ 46–47. Additionally, we credit the testimony of Dr. Akl, who testified that “if [a computer] is able to carry out the functionality, then it’s not a general-purpose computer.” Ex. 1064, 55:23–25.

Accordingly, based on the entirety of the record, we find that the combined disclosures of Allen and Maes would have taught or at least suggested to one of ordinary skill in the art the use of a router and putting an autonomous broadcast device (ABD) behind said router.

b) “establishing an Internet connection for the ABD behind the router, wherein the router prevents remote access to the ABD from outside the router,”

Claim 1 recites “establishing an Internet connection for the ABD behind the router, wherein the router prevents remote access to the ABD from outside the router.” Ex. 1001, 26:35–37.

Petitioner contends that Allen’s WAN teaches the claimed Internet connection because “the Internet is just the largest WAN in the world” and Allen discusses the use of “an internet protocol (IP) network connection”

and IP addresses. Pet. 36 (citing Ex. 1008 ¶¶ 1087, 1051, 1104). Petitioner also asserts that Maes discloses establishing Internet connections. *Id.* (citing Ex. 1009 ¶¶ 5–6, 169, 180).

Petitioner then asserts that the use of firewalls would prevent remote access to the ABD from outside the router in the asserted combination. *Id.* at 36 (citing Ex. 1007 ¶ 233). With respect to the router preventing remote access, Petitioner points to Maes’ statement that “tunneling through firewalls and wireless gateways may not always be guaranteed.” *Id.* (citing Ex. 1009 ¶ 229). Petitioner also relies on Dr. Easttom’s testimony that modems/routers typically included a firewall to act as a barrier between an internal network and an external network. *Id.* (citing Ex. 1007 ¶ 233).

Patent Owner contends that the mere mention of a WAN by Allen is not a teaching that the system used the internet. PO Resp. 35–36. According to Patent Owner, Allen’s MCDs are “distributed throughout a network.” *Id.* at 36 (citing Ex. 1008 ¶ 1075) (emphasis in original). Patent Owner asserts that Allen’s examples are of a single network and not the internet and, therefore, do not meet the claim limitation. *Id.* (citing Ex. 2005, 125:7–18; Ex. 2017 ¶ 142).

We do not agree with Patent Owner. Rather, we credit Dr. Easttom’s testimony that, at the critical time, “it was ubiquitous to use a single device that functioned as both a modem, to connect to networks such as a WAN or the Internet, and a router, to route a network connection to devices in a local network.” Ex. 1007 ¶ 550. Dr. Easttom further testifies that a person of ordinary skill in the art would have understood that “routers included firewall functionalities that would block certain incoming communications and prevent remote access to devices behind the router” because in “other words routers/gateways/firewalls prevent remote access.” *Id.* ¶ 233.

With respect to Patent Owner’s argument that Allen’s WAN is different from the Internet, we credit Dr. Akl testimony that the Internet may involve different considerations and technical communications issues than smaller WANs. Ex. 2001 ¶¶ 82–84. Dr. Akl also testifies, however, that “the internet is the largest and most complex WAN in existence.” *Id.* ¶ 82. On balance, we find both Dr. Easttom and Dr. Akl credible. We further find that WAN encompasses the internet and that a person of ordinary skill in the art would have understood that every network has different considerations and issues.

We also note Patent Owner does not argue against Petitioner’s assertion that Maes teaches establishing Internet connections. *See* Pet. 34 (citing Ex. 1009 ¶¶ 5–6, 169, 180). Petitioner asserts, and we agree, that a person of ordinary skill in the art would have understood that Maes’s disclosure of “gateways and firewalls” that are “end-to-end” in the system teaches or at least suggests a client device situated behind a router, gateway, and/or firewall. Ex. 1009 ¶¶ 180, 232; *see* Ex. 1007 ¶ 230. We credit the testimony of Dr. Easttom when he explains that it would have been obvious to situate Maes’s client device “behind a gateway/router, to enable it to communicate over the Internet, as required by Maes.” Ex. 1007 ¶ 230. Dr. Easttom further testifies that “the use of router/firewalls [were] ubiquitous at the time in setting up Internet connectivity for client devices.” *Id.* As Dr. Easttom notes, the ’574 Patent also discloses that broadcast devices were situated behind firewalls “in conventional systems.” *Id.* (citing Ex. 1001, 1:29–2:14).

Accordingly, based on the entirety of the record, we find that the combined disclosures of Allen and Maes would have taught or at least suggested to one of ordinary skill in the art establishing communications

over the Internet and situating a router between the ABD and server to enable such communications.

- c) “*wherein, the ABD autonomously performs the following actions without any modification to or circumvention of the router: issue a request via the Internet connection to a first server situated outside the router and receive data relating to a recording start time of a live event from the first server in response to the request*”

Claim 1 recites “wherein, the ABD autonomously performs the following actions without any modification to or circumvention of the router: issue a request via the Internet connection to a first server situated outside the router and receive data relating to a recording start time of a live event from the first server in response to the request.” Ex. 1001, 26:38–44.

Petitioner contends Allen’s MCD communicates *autonomously* by accessing a schedule and prompting itself to record and transmit media signals at indicated times. Pet. 39 (citing Ex. 1008 ¶ 182; Ex. 1007 ¶ 239). According to Petitioner the performance of both Allen and Maes’s network communication is done *without any modification to or circumvention of the router* because (1) Allen’s MCD initiates communications with scheduler 658 that accesses the schedule stored on the server (Ex. 1008 ¶ 1082), and (2) Maes teaches that request/response protocols such as SIP and HTTP allow for client-initiated communications to pass across a system end-to-end through gateways and firewalls (Ex. 1009 ¶¶ 61, 204, 229–230, 233, 311). *Id.* at 40.

Petitioner relies on Maes and Dr. Easttom’s testimony when asserting that request protocols may pass unhindered through unmodified and uncircumvented firewalls. Pet. 40 (citing Ex. 1009 ¶¶ 229, 232; Ex. 1007

¶ 240). Petitioner characterizes this as “a basic foundation of Internet communications.” *Id.* (citing Ex. 1007 ¶¶ 71, 74, 240).

Petitioner further contends Allen’s MCD meet this limitation by accessing a schedule on a control server, which Dr. Easttom testifies involves a request for the schedule and a response from the server. Pet. 41 (citing Ex. 1008 ¶ 1082; Ex. 1007 ¶¶ 71, 242, 244). Petitioner also points to Allen’s control server transmitting information in response to a request from the MCD. *Id.* (citing Ex. 1008 ¶ 1065). Petitioner also asserts that Allen’s received schedule includes a “class time (*e.g.*, start time indicator).” *Id.* at 42 (citing Ex. 1008 ¶ 1099). Petitioner asserts that Allen’s “MCD, scheduler 830, and control server communicate over WAN/Internet connections, and thus the control server and scheduler 830 are situated outside the MCD’s router and the request is transmitted over a network.” *Id.* (citing Ex. 1007 ¶ 246).

Patent Owner contends that Allen does not disclose the required ABD hidden behind a router and the use of requests to communicate outside the router. PO Resp. 32. Specifically, Patent Owner asserts that a person of skill in the art would understand that Allen is applied to a closed network that does not use blocking routers and where requests are not needed for communication. *Id.* Patent Owner argues that the word “access” as used in Allen does not mean that its MCD was making an autonomous request to a remote server. *Id.* at 32–33. According to Patent Owner, Allen is sending a schedule from the control server and then it is “access[ed]” from local memory, not from another device. *Id.* at 33–34 (citing Ex. 1008 ¶ 1082). Patent Owner argues that this reading is consistent “with the pervasive use of the word ‘access’ in Allen itself to refer to a device retrieving information from its own local memory.” *Id.* at 34 (citing Ex. 2017 ¶ 132). Patent

Owner notes that Allen discloses three exemplary ways to get “regional parameter values” (not a schedule) from the control server to an MCD, including two ways that would not work if blocking routers were present in Allen. *Id.* (citing Ex. 1008 ¶ 1065).

Patent Owner then turns to Maes and contends its SIP protocol does not work without specific router configuration. PO Resp. 37. Patent Owner explains that “SIP is used for two-way communication, and is used for that purpose in Maes.” *Id.* at 38 (citing Ex. 2007 ¶¶ 95–98). According to Patent Owner, the problem is not that “SIP as a protocol does not allow for a request response.” Tr. 43:23–24. Rather, Patent Owner argues that the problem is the way the SIP protocol is being used in Maes where it does not allow only communications that start from an ABD inside a router and then is sent out. *Id.* at 43:18–22. Patent Owner asserts that Maes requires unrequested communications be allowed to pass unbidden from the outside in, and “this would not work if there were a router.” *Id.* at 44:2–7. Patent Owner appears to specifically rely on the SIP protocol feature in Maes called “barge-in,” which allows for an unsolicited call to be accepted. PO Resp. 39 (citing Ex. 1009 ¶ 220, Fig. 21; Ex. 2017 ¶ 96).

We do not agree with Patent Owner’s position for several reasons. First, we look at the combined teachings of Allen and Maes as proffered in the Petition. We do not look at them in isolation as argued by Patent Owner. “The test for obviousness is not whether . . . the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (citations omitted). “Non-obviousness cannot be established by attacking references individually where the rejection is based upon the

teachings of a combination of references.” *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citing *Keller*, 642 F.2d at 425). In determining obviousness, furthermore, a reference “must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole.” *Id.*

Second, we do not agree with Patent Owner’s arguments that Allen does not have an ABD behind a router that is unmodified or not circumvented. Rather, as discussed previously we find that Allen discloses an ABD because Allen’s MCD is “configured to capture, process, store and/or send real-time media signals (e.g., audio signal, video signal . . .)” and broadcast the audio/video content over a network and is not merely a general-purpose computer. *See, e.g.*, Ex. 1008 ¶ 1015, Fig. 8; *see also supra* § III.A.1.a. We also find that Allen’s MCD can “can access a schedule that is either stored locally at the embedded appliance 600 or on the control server 620.” *See id.* ¶ 1082. The fact that Allen discloses multiple embodiments regarding how and where the schedule is stored and/or accessed does not detract from its teaching that the MCD can access the schedule stored at *either* embedded appliance 600 *or* control server 620. *Id.* We also credit the testimony of Dr. Easttom that such access would, in conventional network communications, involve a request from the MCD for the schedule and a response from the server. *See* Ex. 1007 ¶¶ 71, 242–247.

We also agree with Petitioner that Allen’s MCD has the capability of sending requests to control server 420, because control server 420 can send regional parameter values to MCD 400 “in response to a request from [MCD] 400.” *See* Reply 11–12; Ex. 1008 ¶ 1065. We find that Petitioner’s position is supported by Dr. Akl, who testifies that “such ‘request response’ architecture in a client-server setting was well-known” in 2010. *See* Ex. 1064, 121:23–122:11. Thus, we find that a person of ordinary skill in

the art in 2010 would have understood Allen to teach that Allen's MCD could autonomously request and retrieve a schedule from the controller server, thereby meeting the claim limitation.

Lastly, we do not agree with Patent Owner's interpretation of Maes and its use of the SIP/SDP request/response protocol. Specifically, Maes teaches request/response protocols such as SIP/SDP and HTTP allow for client-initiated communications to pass across a system end-to-end through gateways and firewalls. Ex. 1009 ¶¶ 61, 204, 229–230, 233, 311. Additionally, Maes teaches the use of multiple different types of transmission protocols, the selection of which may be based on the system network or infrastructure. *Id.* ¶¶ 227–229. Maes specifically discloses that tunneling through firewalls and wireless gateways can be achieved and guaranteed using SIP/HTTP and SOAP. *Id.* ¶¶ 229, 232; *see also* Pet. 40 (discussing Maes's teachings regarding request/response protocols such as SIP and HTTP allow for client-initiated communications to pass across a system end-to-end through gateways and firewalls).

The use of HTTP appears to be particularly relevant given that it is the same communication protocol used in the '574 patent. *See* Ex. 1001, 16:3–28; 18:51–61, 5:16–26, 22:15–18, 22:25–29. Based on the evidence of record, HTTP was a common request/response communication protocol at the time of the invention and it enabled communication through a router/firewall, without the need for modification or circumvention. *See* Ex. 1007 ¶ 72; Ex. 1015, 1:62–2:37 (Using HTTP, direct responses from the server to the client requests would also be allowed “to pass through”); Fig. 2; Ex. 1016 ¶ 5; Ex. 1035, 1, 6–7, 31. Maes's teachings of protocols for client initiated communications that pass through the client-side router/firewall unhindered to an outside server and then allowing only

responsive communications to pass back to the client appears to read directly on the challenged claim limitations.

Patent Owner's argument regarding the "barge-in" detection is equally unavailing, because "barge-in" events are part of "client settings" parameters that can be prohibited (Ex. 1009 ¶ 224) and a terminal or server does not have to support "barge-in" capabilities (*id.* ¶¶ 241, 246). Without the consideration of "barge-in" events, we find that Maes supports client-initiated communications and responsive communications to pass across a system end-to-end through gateways and firewalls without modifying or circumventing the router/firewall.

Similarly, we do not agree with Patent Owner's argument's regarding Maes being directed to only audio communications. On the contrary, Maes discloses multiple instances of transmitting recorded and real-time video data. *See* Ex. 1009 ¶¶ 125, 179, 205, 207.

Accordingly, we determine Petitioner has shown by a preponderance of the evidence that the combination of Allen and Maes teaches or suggests the required claim limitation.

- d) *"receive digital content of the live event after the recording start time from a digital recording device proximate to the live event transmit streaming information via the Internet connection to a second server, wherein the second server is configured to stream the digital content to a plurality of users transmit the digital content via the Internet connection to the second server contemporaneously with the live event and based on the data relating to the recording start time receive data relating to a recording end time for the live event from the first server via the Internet connection cease transmission of the digital content based on the data relating to the recording end time"*

Claim 1 recites "receive digital content of the live event after the recording start time from a digital recording device proximate to the live

event; transmit streaming information via the Internet connection to a second server, wherein the second server is configured to stream the digital content to a plurality of users; transmit the digital content via the Internet connection to the second server contemporaneously with the live event and based on the data relating to the recording start time; receive data relating to a recording end time for the live event from the first server via the Internet connection; and cease transmission of the digital content based on the data relating to the recording end time.” Ex. 1001, 26:45–60.

Petitioner contends each of these limitations recited in independent claim 1 are rendered obvious by the combined teachings of Allen and Maes. Pet. 33–51 (citing Ex. 1007 ¶¶ 226–262). Petitioner argues Allen discloses server(s) that stores “real-time” media signals received from Allen’s MCD and distributes the media signals to users. *Id.* at 49 (citing Ex. 1008 ¶¶ 105, 1059, 1075). Petitioner further argues Maes discloses “real-time conversational computing” (Ex. 1009 ¶ 16) using RTP-based protocols for audio/video (*id.* ¶¶ 75,125), for “two-way human to human communication” (*id.* ¶ 181), such as “between devices 1907, 1908, or 1909 and telephone 1912,” between the devices and through the server system. *Id.* (citing Ex. 1007 ¶ 264, Fig. 19).

Petitioner next contends that a person of ordinary skill in the art “would have understood from Maes’s disclosure that such real time communications would involve the server transmitting digital content received from one device (e.g., device 1908) to another device (e.g., device 1912) contemporaneously and as a live stream.” *Id.* at 50 (citing Ex. 1007 ¶ 265). Therefore, Petitioner concludes that it would have been obvious, “based on Maes’s disclosure, that real-time media signals received by the servers of Allen contemporaneously with the live event from an MCD

would also be transmitted as real-time media signals from the servers to users for viewing as a live video stream contemporaneously with the live event.” *Id.* at 50–51 (citing Ex. 1007 ¶ 266).

Patent Owner contends that Petitioner fails to demonstrate that either Allen or Maes shows contemporaneously transmitting the video from the ABD to a media server and then live streaming the video to users as required by all challenged independent claims. PO Resp. 47. Patent Owner argues that Allen expressly defines the term “real-time media signals” as video signals captured live by a sensor and transmitted instantly to the MCD. *Id.* (citing Ex. 1008 ¶ 1015). According to Patent Owner, “[t]his is akin to the ABD receiving digital content from a digital recording device step of the ’574 Patent claims, and says nothing about what happens to the video after capture by the MCD and has no relation to live-streaming (i.e., viewing by a plurality of users).” *Id.* at 48. To the contrary, Patent Owner asserts, “Allen repeatedly describes its viewing as ‘time-shifted’ or delayed viewing at some time after the video is distributed from the MCDs to Allen’s servers.” *Id.* (citing Ex. 2017 ¶ 142; Ex. 1008 ¶¶ 1002, 1059, 1075). In other words, Patent Owner argues “Allen is not a live stream system at all—it is a lecture capture system designed for later viewing.” *Id.*

Patent Owner next contends Maes is not relevant, because Maes is not directed to video as required by the claims, but it also is not from a server to a plurality of users—it is from a single user to another single user. PO Resp. 50 (citing Pet. 49). Patent Owner then argues that Maes’s “real-time conversational computing” path does not include a server. *Id.*; Sur-Reply 19. Therefore, Patent Owner concludes that Maes fails to teach “the actual claim limitations of contemporaneously transmitting video from an

ABD to a server and then live streaming the video to a plurality of users.”
PO Resp. 50.

We do not agree with Patent Owner’s position. Again, we look at the combined teachings of Allen and Maes as proffered in the Petition. We do not look at them in isolation as argued by Patent Owner. Thus, the fact that Maes does not explicitly disclose the use of a server in its “real-time conversational computing” path is not relevant considering that Petitioner appears to rely on Allen’s server (*see* Pet. 50). Additionally, although Allen discusses immediately uploading captured content (*see* Ex. 1008 ¶ 122) and this may not be understood as “live streaming” per Patent Owner, we analyze such action in combination with Maes’s teachings of real-time communications between devices. With this in mind, where Allen’s MCD can immediately upload content to a server upon capture, we agree with Petitioner that a person of ordinary skill in the art would have found it obvious that the proposed combination of Allen and Maes contemporaneously transmit the video content to a server and then live stream the video to users on the network. *See* Pet. 49–50.

e) Allegations that Maes is Non-Analogous Art

Patent Owner contends Maes is not analogous art and should not be considered in any obviousness analysis. PO Resp. 27. According to Patent Owner, Maes is not in the same field of endeavor and does not solve or mention the same problems as those presented in the ’574 Patent. *Id.* at 27–28. Patent Owner then argue that “[t]he ’574 Patent has no relation whatsoever to the speech recognition technology of Maes and Maes has no relation whatsoever to the scheduling of autonomous video broadcasting in

the '574 Patent.” *Id.* at 29. Patent Owner relies on the holding in *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992) to support its position.

Petitioner contends Maes is from the same field of endeavor as the '574 Patent because both are related to broadcasting media over the Internet. Reply 8. According to Petitioner, the '574 Patent “discloses a system for broadcasting live video content from one device to other devices over the Internet” (Ex. 1001, 1:23–31, Fig. 2), while Maes “similarly discloses a system for transmitting real-time conversational content from one device to another device over the Internet” (Ex. 1009, code (57), ¶¶ 3, 169, Fig. 19). Reply 8. Petitioner also argues that Maes discloses using the same data transmission protocols as the '574 Patent, such as HTTP, SDP, and RTP” and uses similar structures to perform its function. *Id.* (citing Ex. 1009 ¶¶ 19, 125, 205–207, Fig. 19; Ex. 1001, 6:3–9, 18:54–56, 22:15–19, Figs. 2, 4).

A prior art reference is analogous if it is (1) within the same field of endeavor as the claimed invention or (2) reasonably pertinent to the particular problem with which the inventor is involved. *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). There are a number of decisions by our reviewing court that refer to “field of endeavor” as the first factor for determining whether a reference is analogous art. In *In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979), the court determined that two references were in the “same field of endeavor” because they both related to “subsonic variable venturi carburetors.” Similarly, in *In re Deminski*, 796 F.2d 436 (Fed. Cir. 1986), references teaching compressors with pistons were considered to be in the same field as a claimed compressor, even though one reference involved pumping water out of underground mines and the other involved

“use with gas pipelines” because they had “essentially the same function and structure.” *In re Deminski*, 796 F.2d at 442.

Accordingly, our reviewing court have considered prior art to be in the same field of endeavor as a claimed invention when the prior art described devices with the same structure (carburetors, compressors) and performed the same function (pumping). *See also In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). This is in contrast to *In re Clay*, where the court found the references non-analogous because the functions were different (i.e., the extraction of crude petroleum versus the storage of refined liquid hydrocarbons, respectively), even though the industry was the same (i.e., the petroleum industry). *See In re Clay*, 966 F.2d at 659.

In this case, we agree with Petitioner that Maes is in the same field of endeavor as the claimed invention because they involve similar structural features and employ a similar general system of sending content over the internet from one device to other devices. Maes may refer to its protocols for distributing data as “conversation protocols” but those protocols are merely a difference in terminology for the content transmitted or broadcasted over the internet. Thus, we find that Patent Owner’s reliance on *Clay* is misplaced.

f) Alleged Reasons to Combine the Teachings of Allen with Maes

Petitioner contends that a person of ordinary skill in the art at the time of the invention would have had reasons to combine the teachings of Allen and Maes because both involve transmitting digital content from client devices to servers over a WAN or the Internet. Pet. 31 (citing Ex. 1007 ¶ 216). According to Petitioner, Allen does not disclose using particular signaling/description or transport protocols to transmit digital content, but

such protocols would have been needed to establish MCD-server communications and transport MCD-captured media signals to servers. *Id.* Petitioner then relies on Maes’s disclosure of transmitting digital content to servers using standardized signaling/description and transport protocols such as SIP, SDP, and RTP that would have been well-known to a person of ordinary skill in the art by the critical date. *Id.* (citing Ex. 1009 ¶¶ 125, 159, 203–207).

Petitioner argues that SIP was “well-known” and standardized in 1999 (Ex. 1034, 1) “in IETF Request for Comments [RFC] 2543,” which Maes incorporates by reference. *Id.* (citing Ex. 1009 ¶ 204; Ex. 1007 ¶ 217). Petitioner asserts that “[u]biquitous and standardized protocols such as SIP, SDP, and RTP would have provided a [person of ordinary skill in the art] with a predictable set of tools for transmitting digital content to servers.” *Id.* at 32 (citing Ex. 1007 ¶ 220). Petitioner thus concludes that with the standardization, ubiquity, and predictability of signaling protocols like SIP/SDP and transport protocols for audio/video like RTP, a person of ordinary skill in the art “would have been strongly motivated, and it would have been an obvious design choice, to combine Allen with Maes’s disclosure to configure Allen’s MCD to use such well-known signaling/description and audio/video transport protocols.” *Id.* Petitioner asserts that to do so would require only ordinary skill and would produce predictable results. *Id.*

Patent Owner contends Allen and Maes would not have been combined by one having ordinary skill in the art for several reasons. PO Resp. 51–53. First, Patent Owner argues that the combination would not actually solve the problems presented in the ’574 Patent. *Id.* at 51. And,

according to Patent Owner, none of the problems addressed in the '574 Patent are even at issue in Maes. *Id.* at 51–52.

Second, Patent Owner argues “there were several common and more efficient ways for a POSITA to solve the Hidden ABD Problem at the time of filing, Ex. 1001, 1:35–2:2, and these other methods were available to a person with networking knowledge (e.g., a POSITA) at the time of filing.” PO Resp. 52 (citing Ex. 2019, 64:24–65:7). Patent Owner asserts that the Petition fails to explain why a person of ordinary skill in the art would have been “motivated to use the claimed autonomous requests over the existing methods, especially considering the drawbacks of autonomous requests that would discourage a POSITA from using them.” *Id.* (citing Ex. 2017 ¶¶ 66–70).

Patent Owner also relies on the testimony of Dr. Easttom to support its position, because he testifies that Maes uses router configuration to allow for SIP. *See* Ex. 2019, 204:9–24. According to Patent Owner, because Maes’s SIP protocol does not work without router configuration, “a POSITA would never have looked to Maes to achieve the claimed invention, which specifically forbids such configuration to communicate with the ABD.” PO Resp. 52.

Lastly, Patent Owner argues there was no demand for a live stream system in 2010 and “generally” those of ordinary skill in the art were not “even trying to solve the main problem of '574 Patent: creating a livestreaming system for the common, unsophisticated user.” PO Resp. 52–53.⁹ Patent Owner asserts that the method used in the '574 Patent was

⁹ We note, however, Patent Owner’s argument here is inconsistent with its argument that “others were encountering problems similar to those

counter intuitive, inefficient, and had serious drawback. *Id.* at 53. Thus, Patent Owner concludes that a person of ordinary skill in the art would have been “demotivate[d]” from creating and using such a system. Sur-Reply 19.

Based on the entirety of the trial record, we are persuaded that a person of ordinary skill in the art would have been motivated to combine Allen and Maes as Petitioner proposes, and we do not agree with Patent Owner’s contrary arguments. As noted by Patent Owner, a reason to combine prior art teachings may be found in “any need or problem known in the field of endeavor at the time of invention and addressed by the patent.” PO Resp. 51 (quoting *KSR*, 550 U.S. at 420); see *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 799–800 (Fed. Cir. 2021) (“if there’s a known technique to address a known problem using ‘prior art elements according to their established functions,’ then there is a motivation to combine.”). Thus, a showing of obviousness does not require patentee’s problem to be addressed by the art, and does not turn on whether the combination of Maes with Allen solves a hidden ABD problem. A showing of obviousness also is not gauged based on specific level of demand for a particular solution or invention. See also *Intel Corp.*, 21 F.4th at 797 (The court noted that “‘universal’ motivations known in a particular field to improve technology provide ‘a motivation to combine prior art references even absent any hint of suggestion in the references themselves.’”).

Patent Owner’s arguments that autonomous requests have drawbacks and would discourage a person having ordinary skill in the art from using them is equally unavailing. PO Resp. 52. As Petitioner asserts, and we

addressed in the patent and were struggling to solve them.” See PO Resp. 55.

agree, Allen operates using autonomous requests. Pet. 39, 47 (“Allen describes its MCD as communicating autonomously, including to access a schedule and prompt itself to record and transmit media signals at indicated times”). Petitioner does not appear to rely on adding a teaching of autonomous requests to Allen, such that the advantages and disadvantages of such a combination would be germane to the obviousness determination.

Likewise, we do not agree with Patent Owner’s arguments regarding Maes’s use of a router that requires configuration. PO Resp. 52. Petitioner explains, and we agree, that as construed above “all routers require some sort of configuration at set up, and such configurations should not constitute ‘modification or circumvention’ of the router.” Reply 10 (citing Ex. 2019, 286:15–16 (“Every router needs configuration to allow all the communication.”); Ex. 1056 ¶ 51). Configuration at set up is consistent with the claimed ABD, which requires only that the ABD may not modify or circumvent the router while performing the claimed live event content and its scheduling information actions. Moreover, Petitioner’s combination does not appear to rely on inserting a router into the system of Maes. Rather, Petitioner appears to rely on Maes for teaching (1) that only some communications, such as those using request/response protocols like SIP/HTTP, may pass through routers, gateways, and firewalls, (2) for situating a router between Allen’s MCD and its server, and (3) the concept of “real-time conversational computing.” See Pet. 31, 35, 40, 43–45, 49–51.

Accordingly, we determine Petitioner has demonstrated by a preponderance of the evidence that there was a reason for a person of ordinary skill in the art in 2010 to combined the teachings of Allen and Maes.

g) *Objective Indicia of Non-Obviousness*

Patent Owner also presents arguments and evidence of objective indicia or secondary considerations of nonobviousness. PO Resp. 55–60; PO Sur-Reply 19–22. Objective indicia of nonobviousness may include long-felt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, industry praise, and expert skepticism. *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1379 (Fed. Cir. 2012); *Graham*, 383 U.S. at 17–18, 86 S.Ct. 684; *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1369 (Fed.Cir.2007). “[O]bjective indicia ‘may often be the most probative and cogent evidence of nonobviousness in the record,’” and “help turn back the clock and place the claims in the context that led to their invention.” *Id.* at 1378 (quoting *Ortho–McNeil Pharm. v. Mylan Labs., Inc.*, 520 F.3d 1358, 1365 (Fed. Cir. 2008)). Evidence of objective indicia of nonobviousness “must always when present be considered en route to a determination of obviousness.” *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012); see *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc).

Objective indicia of nonobviousness are “only relevant to the obviousness inquiry ‘if there is a nexus between the claimed invention and the [objective indicia of nonobviousness].’” *In re Affinity Labs of Tex., LLC*, 856 F.3d 883, 901 (Fed. Cir. 2017) (quoting *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1312 (Fed. Cir. 2006)). For objective indicia of nonobviousness to be accorded substantial weight, their proponent must establish a nexus between the evidence and the merits of the claimed invention. *ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016).

Patent Owner contends there is a clear nexus between the Echo 360 product and the challenged claims because Echo360 is an embodiment of Allen. PO Resp. 57 (citing Ex. 2017 ¶ 169); Sur-Reply 25. Yet, Patent Owner's evidence regarding the Echo 360 product is only a screenshot of a lecture abstract discussing the use of a system "based on the Echo 360 server along with 27 client PCs running the Echo 360 software" and a YouTube video cited in a footnote in Dr. Akl's Responsive Declaration. *See* Ex. 2016; Ex. 2017, n17. Unfortunately, the YouTube video merely discusses the capabilities of the Echo 360 and how one user implemented and adjusted their system and system configuration. Contrary to Patent Owner's statements during oral argument, the YouTube video does not "point[] to how [the product] works." *See* Tr. 61:23–62:1. More importantly, the video does not provide specific information regarding how the Echo 360 product compares to the challenged claims (or to Allen). Dr. Akl opines about the lecture discussion found in the YouTube video, but also fails to provide any testimony comparing Echo 360 to Allen or to the challenged claims. Therefore, Patent Owner provides us with insufficient evidence showing that the Echo 360 product is an actual embodiment of Allen or that it is commensurate with the scope of the claims. *See Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013) (There is no nexus unless the evidence presented is "reasonably commensurate with the scope of the claims"). Without an explanation or analysis that corroborates the relationship between the claims of the '574 patent and the Echo 360 product, we cannot presume a nexus.

Similarly, Patent Owner contends there is a nexus between the Slingbox product and the challenged claims "because they both concern trying to solve the Hidden ABD Problem for communicating remotely with a

streaming device situated behind a router.” PO Resp. 56 (citing Ex. 2026, 5, 10, 18 (Information Disclosure Sheet “IDS”). Yet, neither Patent Owner nor Dr. Akl undertake an analysis comparing the features of the Slingbox product to the challenged claims. Rather, Patent Owner only cites to two reviews of the product and its own IDS submission to the USPTO. *Id.* (citing Exs. 2012, 2013, 2026). Thus, we find Patent Owner’s evidence is insufficient to establish a presumed nexus between the Slingbox product and the challenged claims.

As the Federal Circuit has explained, “a patentee is entitled to a rebuttable presumption of nexus between the asserted evidence of secondary considerations and a patent claim if the patentee shows that the asserted evidence is tied to a specific product and that the product ‘is the invention disclosed and claimed.’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988)). That is, presuming nexus is appropriate “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Id.* (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)). Once “the patentee has presented a prima facie case of nexus, the burden of coming forward with evidence in rebuttal shifts to the challenger . . . to adduce evidence to show that the commercial success was due to extraneous factors other than the patented invention.” *Demaco*, 851 F.2d at 1392–93.

Here, Patent Owner has failed to demonstrate that either the Echo 360 product or the Slingbox product are coextensive with the challenged claims. Therefore, we conclude that Patent Owner is not entitled to a presumption of nexus. But, “[a] finding that a presumption of nexus is inappropriate does

not end the inquiry into secondary considerations.” *Fox Factory*, 944 F.3d at 1373. “To the contrary, the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Id.* at 1373–74 (quoting *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996)).

Based on the evidence of record and the lack of analysis, as discussed above, we find that Patent Owner also fails to demonstrate that its evidence regarding the Echo 360 product or Slingbox product are a “direct result of the unique characteristics of the claimed invention.” Therefore, we end our inquiry into Patent Owner’s evidence of objective indicia of non-obviousness and accord the evidence no weight. Weighing all the factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, objective evidence of non-obviousness, we conclude that Petitioner has shown by a preponderance of the evidence that claim 1 would have been obvious to a person of ordinary skill in the art at the time of the invention. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

2. *Analysis of Claims 2–17, 21–24, 26, 30*

Claims 6, 12, and 22 are independent claims having similar limitations to claim 1, while claims 2–5, 7–11, 13–17, 21, 23, 24, 26, and 30 depend from their respective independent claims. Petitioner has provided additional explanation for the manner by which the combination of Allen and Maes is asserted to teach each limitation not found in claim 1. Pet. 33–58 (citing Ex. 1007 ¶¶ 226–305). Patent Owner has not provided any arguments separate from those relating to claim 1. Nonetheless, the burden remains on

Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

Having reviewed all arguments and supporting evidence in this trial record, including the arguments summarized above for claim 1 as well as those regarding Patent Owner’s objective indicia of non-obviousness, we determine that Petitioner has demonstrated by a preponderance of the evidence that the limitations recited in claims 2–17, 21–24, 26, 30 would have been obvious to a person of ordinary skill in the art.

3. Conclusion on Alleged Obviousness in View of Allen and Maes

Based on the entire trial record, we find Petitioner has demonstrated by a preponderance of the evidence that claims 1–17, 21–24, 26, 30 are unpatentable under § 103 as having been obvious to a person of ordinary skill in the art in view of the combined teachings of Allen and Maes.

B. Alleged Obviousness of Claims 18–20, 25, and 27–29 in View of Allen, Maes, and Slater

Petitioner contends claims 18–20, 25, and 27–29 would have been obvious to a person of ordinary skill in the art at the time of the invention, in view of Allen, Maes, and Slater and relies on many of the same arguments asserted in its Allen and Maes challenge. Pet. 51–55. Petitioner provides additional explanation for the manner by which the combination of Allen, Maes, and Slater is asserted to teach each limitation of dependent claim 18–20, 25, and 27–29 not found in independent claims 12 and 22. Pet. 58–60 (citing Ex. 1007 ¶¶ 309–315). Specifically, Petitioner argues that Slater discloses the claimed usage information/statistics because “Slater’s server collects information/statistics including client IP addresses, videos accessed by the client, and usage of the videos such as access patterns, access times, and outgoing bit rates.” *Id.* at 59–60 (citing Ex. 1013, 12:13–22, 13:49–57,

36:44–50; Ex. 1007 ¶¶ 314–315). Petitioner further provides rationale for combining the teachings of Slater with Allen and Maes. *Id.* at 58–59 (citing Ex. 1007 ¶ 307).

Patent Owner relies on many of the same arguments regarding the combination of Allen and Maes as it does regarding Allen, Maes, and Slater, but also addresses specific limitations recited in claims 18–20 and 29. PO Resp. 60. Claims 18–20 require that the system logs viewer usage information, and that the usage information be specifically stored on the scheduling logic (scheduling server). Patent Owner contends that the Petition fails “to show that any cited reference discloses usage information stored on a scheduling server, and Slater has no scheduling server.” *Id.* (citing Pet. 59–60). Patent Owner further argues that the Petition fails to explain why a person of ordinary skill in the art in 2010 would have stored such information on the scheduling server as opposed to the media servers that are serving the video to viewers. *Id.*

Claims 20 and 29 require that the system store or log the viewing duration of users. Patent Owner asserts that the Petition relies on Slater for this limitation, but Slater only discloses logging “access times,” not duration or viewing end times. *Id.* (citing Pet. 60). Patent Owner does not address the specific limitations found in the other challenged claims. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

Petitioner responds that a person of ordinary skill in the art in 2010 would have understood that “Slater’s ‘access times’ include viewing duration of the content because it is necessary for billing purposes. Reply 16–17(citing Ex. 1007 ¶ 314). Petitioner also argues that Hurst discloses a “statistics server 212 [] configured to collect content usage and

client performance statistics.” *Id.* (citing Ex. 1014 ¶ 45). According to Petitioner, Hurst’s statistics collection includes “how long the content was presented” (i.e., viewing duration), and “the IP address of the client device.” *Id.* (citing Pet. 60–61; Ex. 1014 ¶¶ 46, 72). Petitioner then asserts that even if Slater does not explicitly disclose a scheduling logic, then it relies on Allen’s scheduler 658, which is configured to store access data such as a recording schedule. *Id.* (citing Ex. 1008 ¶ 1082).

We do not agree with Patent Owner. Again, we look at the combined teachings of Allen, Maes, and Slater as proffered in the Petition. We do not look at them in isolation as argued by Patent Owner. Both Allen and Slater disclose the use of a server with a scheduling logic. In our analysis, we credit the testimony of Dr. Easttom, who explains that “Slater discloses a ‘master server’ that collects user and usage information/statistics, including client IP addresses, videos accessed by the client, and usage of the videos such as access patterns, access times, and outgoing bit rates. Ex. 1007 ¶ 314 (Ex. 1013, 12:13–14, 13:49–57, 36:44–50). Dr. Easttom further testifies that “Slater thus provides a server or scheduling logic that stores usage information or statistics regarding client IP addresses and video access patterns and times.” *Id.* Therefore, Dr. Easttom opines that a person of ordinary skill in the art at the critical time “would have understood that, or found it obvious, that tracking video access patterns and access times would encompass viewing durations for the videos.” *Id.*

Given the combined teachings of Allen, Maes, and Slater, we find that the references teach a scheduling server that collects performance statistics. Furthermore, we determine that Dr. Easttom’s testimony is consistent with and supported by the direct disclosures of the cited references. Therefore, we find that a person of ordinary skill in the art at the critical time would

have determined duration of viewing times from the collected access time. *See* Ex. 1013, 12:13–22, 13:49–57, 36:44–50. Additionally, we find that a person of ordinary skill in the art in 2010 would have had reason to combine the teachings of Slater with those of Allen and Maes, as proposed. *See* Pet. 58–58; Ex. 1007 ¶ 307.

Accordingly, we determine that Petitioner has demonstrated by a preponderance of the evidence that there was a reason for a person of ordinary skill in the art in 2010 to combined the teachings of Allen, Maes, and Slater, and that claims 18–20, 25, and 27–29 would have obvious to a person of ordinary skill in the art.

C. Alleged Obviousness of Claims 18–20 and 27–29 in View of Allen, Maes, and Hurst

Petitioner contends claims 18–20 and 27–29 would have been obvious to a person of ordinary skill in the art at the time of the invention in view of the combined teachings of Allen, Maes, and Hurst. Pet. 60–61 (citing Ex. 1007 ¶¶ 316–321). Petitioner specifically argues that Hurst discloses the claimed usage information/statistics because Hurst’s server collects “content usage and client performance statistics,” including “what content was displayed or presented” and “how long the content was presented,” i.e., a viewing duration and client/user IP addresses. *Id.* at 60–61 (citing Ex. 1014 ¶¶ 45, 46, 72; Ex. 1007 ¶¶ 320–321).

Petitioner then asserts that a person of ordinary skill in the art would have had reason to combine the teachings of Allen, Maes, and Hurst, because both Allen and Hurst are concerned with streaming video to users from servers. *Id.* at 60. According to Petitioner, a person of ordinary skill in the art would have had reason to incorporate Hurst’s statistics gathering features into Allen’s system to measure performance or track usage, such as

to gather student viewing statistics like identifying students via IP address and how the students consume video, such as whether a student watched or completed a video lecture. *Id.* at 60 (citing Ex. 1007 ¶ 316). Petitioner concludes that this would require only ordinary skill, and produce predictable results. *Id.*

Patent Owner relies on many of the same argument regarding the combination of Allen and Maes as it does regarding Allen, Maes, and Hurst, but does not address specific limitations recited in claims 18–20 and 29 with regard to Hurst. PO Resp. 60. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

Petitioner responds that Hurst discloses a “statistics server 212 [] configured to collect content usage and client performance statistics.” Reply 17 (citing Ex. 1014 ¶ 45). According to Petitioner, Hurst’s statistics collection includes “how long the content was presented” (i.e., viewing duration), and “the IP address of the client device.” *Id.* (citing Pet. 60–61; Ex. 1014 ¶¶ 46, 72). Petitioner then asserts that even if Hurst does not explicitly disclose a scheduling logic, then it relies on Allen’s scheduler 658, which is configured to store access data such as a recording schedule. *Id.* (citing Ex. 1008 ¶ 1082).

We do not agree with Patent Owner. Again, we look at the combined teachings of Allen and Maes as proffered in the Petition. We do not look at them in isolation as argued by Patent Owner. Given the combined teachings of Allen, Maes, and Hurst, we find that the references teach a scheduling server that collects performance statistics, including viewing duration. *See* Ex. 1014 ¶¶ 46. Additionally, we find that a person of ordinary skill in the

art in 2010 would have had reason to combine the teachings of Hurst with those of Allen and Maes, as proposed. *See* Pet. 60; Ex. 1007 ¶ 316.

Accordingly, we determine that Petitioner has demonstrated by a preponderance of the evidence that there was a reason for a person of ordinary skill in the art in 2010 to combined the teachings of Allen, Maes, and Hurst and that claims 18–20 and 27–29 would have obvious to a person of ordinary skill in the art.

IV. PATENT OWNER’S MOTION TO EXCLUDE

Patent Owner filed a Motion to Exclude. Paper 52 (Mot. Exclude). Petitioner filed an Opposition (Paper 55), and Patent Owner filed a Reply (Paper 59). We address Patent Owner’s Motion in this Decision. We have considered each argument in these filings, and deny Patent Owner’s motion to exclude. We note that we have not relied on any of the disputed evidence in finding any claim not unpatentable or unpatentable, and the Motion to Exclude also may be dismissed as moot for that reason.

A. Legal Principles

Our determination considers that “[t]he policy considerations for excluding expert testimony, such as those implemented by the gatekeeping framework established by the Supreme Court in *Daubert* . . . are less compelling in bench proceedings such as inter partes reviews than in jury trials.” *Nestle Healthcare Nutrition, Inc. v. Steuben Foods, Inc.*, IPR2015-00249, Paper 76 at 23 (PTAB June 2, 2016); *see also Seaboard Lumber Co. v. U.S.*, 308 F.3d 1283, 1302 (Fed. Cir. 2002) (stating that the concerns underlying *Daubert* are “of lesser import in a bench trial, where no screening of the fact finder can take place”). Additionally, “we take into account the qualifications of an expert witness—and any shortcomings revealed through cross-examination—when evaluating the weight to be given that witness’s

testimony. . . . the wholesale exclusion of a witness’s declarations is rarely called for in a proceeding before the Board.” *Ascend Performance Materials Operations LLC v. Samsung SDI Co., Ltd.*, IPR2020-00349, Paper 53 at 11 (PTAB July 15, 2021). Under that framework, we consider Patent Owner’s arguments as they pertain to the *inter partes* review before us.

B. Analysis

Patent Owner moves to exclude paragraphs 8–29, 34–39, and 43–45 of Dr. Easttom’s declaration, Exhibit 1056, because of “numerous conclusory and unsupported statements about technologies.” Mot. Exclude 1. Patent Owner argues that these statements must be excluded because “an expert [must] disclose his sources.” *Id.* at 2. Patent Owner further argues that Dr. Easttom’s testimony is materially false and could not have been the result of any reasonable investigation. *Id.* Patent Owner also seeks to exclude exhibits that are cited in Exhibit 1056 because they are neither prior art nor cited in Petitioner’s Reply. *Id.* at 1 (seeking to exclude Exhibits 1057–1063 and 1065–1067).

1. Testimony relating to the “Hidden ABD Problem”

Patent Owner contends that paragraphs 8–29, and Exhibits 1057–1063 cited therein, should be excluded because there is “no utility for the testimony in this case” because it seeks to prove that the Hidden ABD Problem at issue in the proceeding was “already solved.” Mot. Exclude 5–6. Patent Owner argues that this testimony is irrelevant because the ’574 Patent “already explains that there were several existing solutions to the Hidden ABD Problem.” *Id.* at 5. Patent Owner further argues the testimony “is also prejudicial to the extent it insinuates that it would have been obvious for a POSITA to use the ’574 Patent’s particular chosen solution” *Id.* Patent

Owner argues that this irrelevance and prejudice, with its resulting confusion, require exclusion of this evidence under sections 401–403 of the Federal Rules of Evidence.

We are not persuaded by this argument. Patent Owner’s Response argues that the ’574 patent is a “combination of solutions” to problems, including the “Hidden ABD Problem.” Resp. 9–10. Thus, we do not agree that Dr. Easttom’s testimony on known solutions to the Hidden ABD Problem is irrelevant or prejudicial to the proceeding such that it should be excluded under sections 401–403 of the Federal Rules of Evidence.

Patent Owner next contends that Dr. Easttom’s statements that Exhibits 1057–1063 were widely cited and would have been familiar to a person having ordinary skill in the art are unsupported. Mot. Exclude 6. Specifically, Patent Owner argues that Dr. Easttom does not provide publication dates to show that these documents would qualify as “printed publications” at the time of invention. *Id.* Patent Owner argues that this evidence, therefore, is not based on sufficient, disclosed facts or data, and should be excluded under section 702 of the Federal Rules of evidence.

We are not persuaded by this argument. First, there is no blanket requirement that corroborating evidence be in the form of prior art documents. *See, e.g., In re Wilson*, 311 F.2d 266, 268-269 (CCPA 1962) (finding a post-critical date “teaching reference” to be permissible evidence of the inherent characteristics of a product). The date of a document (or lack thereof) goes to the weight to be given to evidence, rather than its admissibility. Second, Dr. Easttom’s corroborating evidence is based on sufficient facts and data that have been disclosed in the proceeding. For example, Dr. Easttom cites Ex. 1057 to support his testimony that “[i]n the early 1990s,” the Internet faced “IP address depletion” and “scaling in

routing” as its “most compelling problems.” Ex. 1056 ¶ 8 (citing Ex. 1057 Abstr., § 1). Ex. 1057 describes itself as a “May 1994” memo that “provides information for the Internet community” and that its distribution is “unlimited.” Ex. 1057 states, “[t]he two most compelling problems facing the IP Internet are IP address depletion and scaling in routing;” *i.e.*, that these problems are well known to those in the IP Internet field at that time. *Id.* In view of the totality of the evidence presented, we determine that Dr. Easttom’s testimony is not of such character as to warrant exclusion under section 702 of the Federal Rules of Evidence. In considering the above testimony, we note that Patent Owner has deposed Dr. Easttom (Ex. 2055), and we have considered the statements made in that deposition in determining the weight given to Dr. Easttom’s testimony.

2. *Testimony related to prior art systems and processors*

Patent Owner contends that Dr. Easttom provides statements concerning alleged prior art systems and processors that are supported insufficiently by corroborating evidence. Mot. Exclude 11–12 (citing Ex. 1056 ¶¶ 34–39), 12–13 (citing Ex. 1056 ¶¶ 43–45), 14–15 (citing Exs. 1065–1067). Patent Owner argues that Dr. Easttom’s analysis lacks claim charts or element-by-element analysis, misrepresents Patent Owner’s expert by changing a word in a quote, and/or lacks sufficient sources to support his statements. *Id.* at 11–15. Patent Owner further argues that Dr. Easttom’s statements concerning alleged prior art systems are unsupported, irrelevant, and prejudicial in that the statements misrepresent the state of the prior art at the relevant time. *Id.* at 12–13. Patent Owner then argues that Dr. Easttom’s statements concerning processors are irrelevant because there is no evidence that any of the cited processors predate the patent or include the necessary hardware for an ABD. *Id.* at 13.

Petitioner, to the contrary, argues that the statements concerning alleged prior art systems were made in response to statements made by Dr. Akl in his declaration supporting Patent Owner's Response. Opp. Mot. Exclude 8–9 (citing Ex. 1056 ¶¶ 35–38).

We agree with Petitioner that the indicated statements of Dr. Easttom were responsive to statements made by Dr. Akl in his declaration supporting Patent Owner's Response. For example, Dr. Easttom states that Dr. Akl was incorrect in characterizing the 2005 version of Slingbox as lacking automatic router setup, citing to the 2005 Slingbox user manual. Ex. 1056 ¶ 35 (citing Ex. 2017 ¶ 168; Ex. 1065, 24, 35). Because Dr. Easttom's statements respond to statements in Dr. Akl's declaration, they qualify as relevant evidence under FRE 401. Because Dr. Easttom provides citations to supporting evidence, bearing some indicia supporting their timeliness, Dr. Easttom's statements are supported sufficiently by identified sources such that their exclusion is not warranted by the Federal Rules of Evidence.

Petitioner further argues that the statements concerning prior art computer processors need not be proven correct to be relevant, so long as Dr. Easttom's opinions are explained and result from reliable principles and methods based on the facts of the case. Opp. Mot. Exclude 10–11. Petitioner points to Dr. Easttom's reliance on his personal experience and knowledge, and examples of specific processors with their public release dates. *Id.* at 11.

We agree with Petitioner that the indicated statements of Dr. Easttom were made based upon his personal knowledge, based upon his experience as set forth in the declaration, and supported by examples of the “1991 S3 Graphics . . . S3 86C911 processor” and the NVIDIA's 1999 “Geoforce GPU.” Dr. Easttom further provides footnotes to corroborate these

examples. Ex. 1056, 24 n. 2–3. Because these statements and analysis are provided to support Dr. Easttom’s opinion that Patent Owner’s ABD construction would have been a “mere design choice” known to a person having ordinary skill in the art at the relevant time, yielding predictable results, these statements are relevant evidence under FRE 401. Because Dr. Easttom provides sources for purposes of corroboration, he has disclosed factual support for his opinion. Consequently, Dr. Easttom’s statements are sufficiently supported by identified sources such that their exclusion is not warranted by the Federal Rules of Evidence.

In view of the totality of the evidence presented, we determine that Dr. Easttom’s testimony is not of such character as to warrant exclusion under section 702 of the Federal Rules of Evidence. In considering the above testimony, we note that Patent Owner has deposed Dr. Easttom (Ex. 2055), and we have considered the statements made in that deposition in determining the weight given to Dr. Easttom’s testimony. Consequently, we deny Patent Owner’s Motion to Exclude.

V. PETITIONER’S MOTION TO STRIKE

Petitioner filed a Motion to Strike (Paper 50, “Mot. Strike”) to which Patent Owner filed an Opposition (Paper 54, “Opp. Mot. Strike”) and Petitioner filed a Reply (Paper 58, “Reply Mot. Strike”). We address Petitioner’s Motion in this Decision. As discussed below, we have considered each argument in these filings, and grant Petitioner’s Motion to Strike.

A. Legal Principles

A sur-reply “may not be accompanied by new evidence other than deposition transcripts of the cross-examination of any reply witness.” 37 C.F.R. § 42.23(b).

B. Analysis

Petitioner argues that Patent Owner filed Exhibits 2054 and 2056–2074 with its Sur-reply, and that these Exhibits comprised new evidence in contravention of the Board’s rules. Mot. Strike 1–2. Petitioner argues that entry of Patent Owner’s Sur-reply evidence unduly prejudices Petitioner by not permitting it a response to such evidence. Reply Mot. Strike 1.

Patent Owner argues that this issue is moot because Patent Owner’s Motion to Exclude relies upon nearly all of the same evidence. Opp. Mot. Strike 1. Patent Owner argues that Petitioner did not move to strike this evidence from the Motion to Exclude. *Id.* at 1, 9–10. Patent Owner further argues that § 42.23(b) prevents Patent Owner from the opportunity to submit rebuttal evidence per 5 U.S.C. § 556(d). *Id.* at 2, 10–12. Patent Owner further argues that the submitted evidence was necessary to respond adequately to Dr. Easttom’s invitations for further research presented in his cross-examination. *Id.* at 2–9.

We agree with Petitioner that Patent Owner filed new evidence in contravention of the Board’s rules. During oral argument, Patent Owner agreed that it (1) was aware that our rules did not allow such a filing and (2) did not contact the Board to seek any relief before filing the exhibits. Tr. 86:9–17. Our rules provide for waiver or suspension of any requirement placed by our rules, including the prohibition on submitting new evidence with a Sur-reply, and for placing conditions on the waiver or suspension. 37 C.F.R. § 42.5(b). Thus, the proper avenue for seeking entry of additional evidence is not by submitting such evidence *sub silentio*, but by requesting authorization to file such evidence and permitting the Board to determine whether such a submission should be entered and the scope and timing of the

submission, as well as determining whether the other party will be provided with further opportunity to respond with or without additional evidence.

Moreover, Patent Owner's reliance on such evidence to support its Motion to Exclude does not cure its improper method of submission.

Consequently, we grant Petitioner's Motion to Strike Exhibits 2054 and 2056–2074.

VI. CONCLUSION¹⁰

For the foregoing reasons, we determine Petitioner has established by a preponderance of the evidence that all of the asserted claims, claims 1–30, are unpatentable. Consequently, we need not further determine patentability based on Petitioner's remaining assertions of obviousness. In summary,

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–17, 21–24, 26, 30	103	Allen, Maes	1–17, 21–24, 26, 30	
18–20, 25, 27–29	103	Allen, Maes, Slater	18–20, 25, 27–29	
18–20, 27–29	103	Allen, Maes, Hurst	18–20, 27–29	

¹⁰ 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).

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–17, 21– 24, 26, 30	103	Allen, Maes, Horowitz ¹¹		
18–20, 25, 27–29	103	Allen, Maes, Horowitz, Slater ¹²		
18–20, 27–29	103	Allen, Maes, Horowitz, Hurst ¹³		
1–17, 21– 24, 26, 30	103	Kim, Maes ¹⁴		
18–20, 25, 27–29	103	Kim, Maes, Slater ¹⁵		
18–20, 27–29	103	Kim, Maes, Hurst ¹⁶		
Overall Outcome			1–30	

¹¹ Because these claims have been determined to be unpatentable over Allen and Maes, we need not reach this asserted obviousness contention.

¹² Because these claims have been determined to be unpatentable over Allen, Maes, and Slater, we need not reach this asserted obviousness contention.

¹³ Because these claims have been determined to be unpatentable over Allen, Maes, and Hurst, we need not reach this asserted obviousness contention.

¹⁴ Because these claims have been determined to be unpatentable over Allen and Maes, we need not reach this asserted obviousness contention.

¹⁵ Because these claims have been determined to be unpatentable over Allen, Maes, and Hurst, we need not reach this asserted obviousness contention.

¹⁶ Because these claims have been determined to be unpatentable over Allen, Maes, and Hurst, we need not reach this asserted obviousness contention.

VII. ORDER

For the foregoing reasons, it is:

ORDERED that Petitioner has demonstrated by a preponderance of evidence that claims 1–30 of the '574 patent are unpatentable;

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

FURTHER ORDERED that Patent Owner's Motion to Exclude is *denied*; and

FURTHER ORDERED that Petitioner's Motion to Strike is *granted*.

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