Trials@uspto.gov
571-272-7822

Paper 19
Date: April 26, 2022

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

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

BRADEN, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Resi Media LLC ("Petitioner") filed a Petition requesting an *inter partes* review of claims 1–30 (the "challenged claims") of U.S. Patent No. 9,686,574 B2 (Ex. 1001, "the '574 patent"). Paper 1 ("Pet."). Boxcast Inc. ("Patent Owner") filed a Preliminary Response. Paper 8 ("Prelim. Resp."). With our permission, Petitioner filed a Reply, to address arguments as to discretionary denial under § 314(a). Paper 10 ("Reply"). Patent Owner filed a Sur-reply. Paper 14 ("Sur-reply").

We have authority to determine whether to institute an *inter partes* review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4. An *inter partes* review may not be instituted unless it is determined that "the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314 (2018); *see also* 37 C.F.R § 42.4(a) ("The Board institutes the trial on behalf of the Director."). The reasonable likelihood standard is "a higher standard than mere notice pleading," but "lower than the 'preponderance' standard to prevail in a final written decision." *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (precedential).

For the reasons provided below and based on the record before us, we determine Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. We decline to deny the Petition on a discretionary basis as requested by Patent Owner. Accordingly, we institute an *inter partes* review of the '574 patent and all of the asserted grounds of unpatentability.

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.

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.*, Case No. 2:21-cv-00217-JRG (E.D. Texas). 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), 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 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:

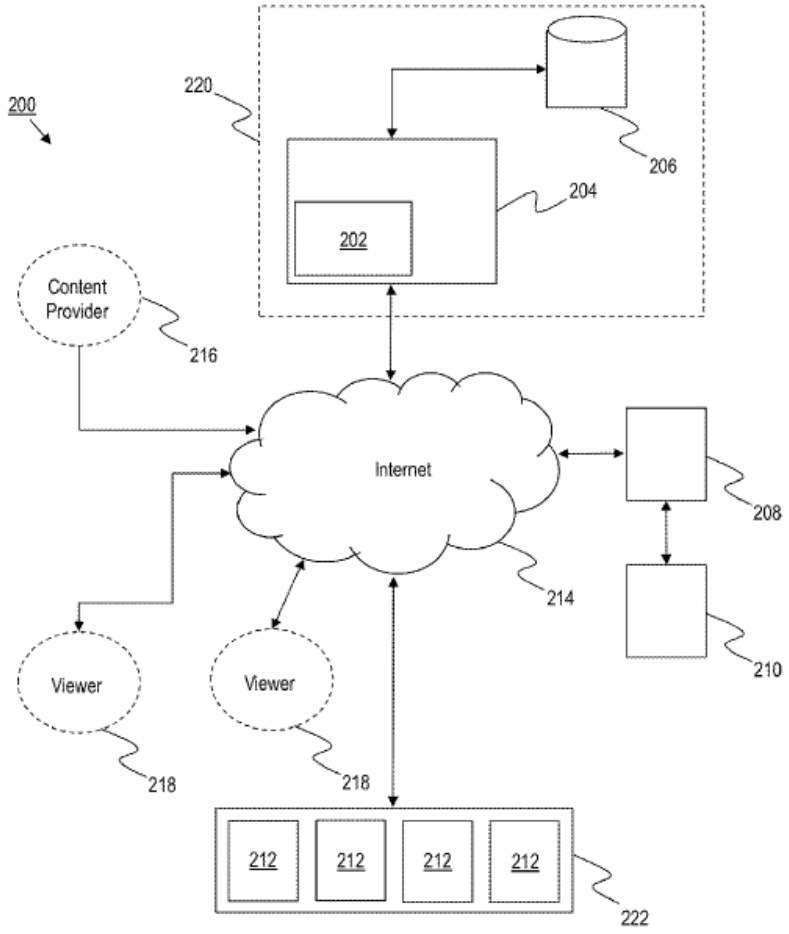

FIG. 2

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:

> **s**implif[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 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 Declaration of William C. Easttom, II, Ph.D. ("Dr. Easttom"). Ex. 1007. Patent Owner provides the testimony of Robert Akl, Ph.D. ("Dr. Akl") to support its position. Ex. 2001.

II. PRELIMINARY MATTERS

A. Analysis of Discretionary Denial Under 35 U.S.C. § 314(a)

Institution of an *inter partes* review is discretionary. Section 314(a) of Title 35 of the United States Code provides that "[t]he Director may not authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition . . . and any

[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, for purposes of institution, we apply the pre-AIA version of 35 U.S.C. § 103.
[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).

response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." The U.S. Supreme Court has explained that because § 314 includes no mandate to institute review, "the agency's decision to deny a petition is a matter committed to the Patent Office's discretion." *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016); *see also Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (explaining that under § 314(a), "the PTO is permitted, but never compelled, to institute an IPR proceeding"). The Director has delegated this authority under § 314(a) to the Board. 37 C.F.R. § 42.4(a) ("The Board institutes the trial on behalf of the Director.").

In this proceeding, Patent Owner argues that we should exercise discretion to deny institution under § 314(a), "because of the advanced nature of the parallel district court proceeding[] and the significant overlap of issues and evidence in both proceedings." Prelim. Resp. 15. Patent Owner contends that all of the factors identified in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*"), weigh in favor of denying institution. *Id.* at 16. Petitioner contests Patent Owner's argument and "stipulates that, if the Board institutes, Petitioner will not pursue invalidity in the district court on any grounds raised or that reasonably could have been raised in this Petition." Pet. 85.

In *Fintiv*, the Board ordered supplemental briefing on a nonexclusive list of factors for consideration in analyzing whether the circumstances of a parallel district court action are a basis for discretionary denial of trial institution under *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752,

Paper 8 (PTAB Sept. 12, 2018) (precedential). *Fintiv*, Paper 11 at 5−16. Those factors include:

> 1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
>
> 2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
>
> 3. investment in the parallel proceeding by the court and the parties;
>
> 4. overlap between issues raised in the petition and in the parallel proceeding;
>
> 5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
>
> 6. other circumstances that impact the Board's exercise of discretion, including the merits.

Id. at 5−6. Here, we consider these factors to determine whether we should exercise discretion to deny institution. In evaluating the factors, we take a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review. *Id.* at 6.

Factor 1: Whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted

Patent Owner argues that this factor supports denial because "the district court has already denied Petitioner's request for a stay in the parallel proceeding." Prelim. Resp. 17 (citing Ex. 2007). Petitioner argues that the initial denial of a stay, which was "without prejudice to refiling," should not weigh in favor of the Board exercising its discretion to deny institution, because "Petitioner will again seek a stay upon institution." Reply 1.

Patent Owner contends the previous denial of Petitioner's motion to stay "undoubtedly favors denying institution of this proceeding." Sur-Reply 2−3. According to Patent Owner, "the significant investment that will

have been devoted by the Court and parties and the advanced nature of the case at the time of institution in this proceeding make a future stay highly unlikely." *Id.* at 3.

On the record before us, we agree with Patent Owner that a motion to stay has been denied by the District Court. But, as argued by Petitioner, the motion to stay was denied without prejudice to refiling. Specifically, the District Court found the motion to be premature because the Board had not yet decided whether to institute *inter partes* review. Ex. 2007, 2 (permitting refiling of the motion within fourteen days following an institution decision by the PTAB). We decline to speculate how the court might decide the motion to stay in the event it is refiled as permitted. Accordingly, we find that this factor does not weigh for or against exercising our discretion to deny institution.

Factor 2: Proximity of the court's trial date to the Board's projected statutory deadline for a final written decision

The parties originally indicated that the district court was scheduled to hold a Markman hearing before institution (February 2022) and set an initial trial date eight months before a Final Written Decision (September 12, 2022) would be issued in this proceeding. Pet. 85; Prelim. Resp. 18 (citing Ex. 2009).

Recently, an Order was issued *sua sponte* in the parallel litigation where the district court denied Patent Owner's Motion for Preliminary Injunction, remanded the parties to mediation, stayed all case deadlines pending the mediation, and reset the Markman and Motions hearing to May 16, 2022. Ex. 1055, 1. The Order did not explicitly reset the trial date; however, the stay introduces at least some uncertainty into the timing of further events. Therefore, it is our understanding that the district court trial

is scheduled currently to begin approximately eight months before our deadline to reach a final decision. Accordingly, we find that factor 2 weighs in favor of exercising our discretion to deny institution.

Factor 3: Investment in the parallel proceeding by the court and the parties

Patent Owner contends the third *Fintiv* factor also weighs strongly in favor of denial because "the parties have invested and will continue to invest significant resources in the parallel proceeding." Prelim. Resp. 20. Patent Owner relies on work related to its Motion for Preliminary Injunction and related discovery, as well as its contentions that fact discovery and claim construction will be completed by the time this Decision on Institution issues. *Id.*

Petitioner disputes Patent Owner's contentions. Petitioner first argues that Patent Owner's Preliminary Injunction Motion is focused on irreparable harm, an issue that does not resolve any challenges pending in the district court or in the Petition. Reply 2. Petitioner then argues expert discovery, dispositive motions, pretrial motions, and trial will not be completed as of the date of this Decision on Institution. *Id.*

Based on the present record, we are persuaded by Patent Owner's showing that the district court and the parties have invested in the merits of the invalidity positions by exchanging invalidity contentions and claim construction briefs. We agree with Petitioner, however, that a portion of work still remains to be done in the district court proceeding because Patent Owner's Motion for Preliminary Injunction was denied by the district court and all pending deadlines were stayed until May 16, 2022 to allow the parties time to attend mediation. *See* Ex. 1055, 1; Reply 2.

Moreover, the evidence shows that Petitioner acted diligently, filing its Petition only four months after the complaint was filed and one month after receiving Patent Owner's preliminary infringement contentions. Pet. 85 (citing Ex. 1050, 2); *see* Ex. 1047, 4. Specifically, per the district court's scheduling order, Patent Owner was to serve its preliminary infringement contentions on September 15, 2021. Ex. 1047, 4. The Petition was filed exactly one month later, on October 15, 2021.

Therefore, weighing the facts in this particular case, including the time invested by the parties and the district court in the parallel litigation, the extent to which the current investment in the district court proceeding relates to issues of patent validity, and the timing of the filing of the Petition, we find that factor 3 weighs slightly against exercising our discretion to deny institution.

Factor 4: Overlap between issues raised in the petition and in the parallel proceeding

Petitioner argues that this factor weighs heavily in favor of institution, because the Petition stipulates that "Petitioner will not pursue invalidity in the district court on any grounds raised or that reasonably could have been raised in this Petition." Pet. 85.

Patent Owner challenges Petitioner's stipulation as "hollow" because "Petitioner has already pursued invalidity in the district court on the same grounds presented in the Petition." Prelim. Resp. 23. According to Patent Owner, "Petitioner should have withdrawn its opposition to Patent Owner's motion for preliminary injunction in the parallel proceeding or, at a minimum, its invalidity arguments vis-à-vis likelihood of success on the merits." *Id.* Patent Owner concludes that because "Petitioner has not done so," it is "effectively nullifying its purported 'stipulation.'" *Id.*

We are persuaded by Petitioner's arguments that the overlap is limited as a result of the stipulation. Notably, Petitioner's stipulation that it will not pursue in district court "any grounds raised or that reasonably could have been raised in this Petition" is similar to the stipulation provided in *Sotera*. *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18–19 (PTAB Dec. 1, 2020) (precedential as to § II.A) ("*Sotera*"). We find Petitioner's stipulation meaningfully limits the concerns of duplicative efforts between the district court and the Board, as well as concerns of potentially conflicting decisions. Therefore, we determine that this factor weighs strongly against exercising our discretion to deny institution.

Factor 5: Whether the petitioner and the defendant in the parallel proceeding are the same party

It is undisputed that Petitioner is a defendant in the parallel litigation. *See* Prelim. Resp. 24. Petitioner does not address this factor.

As the Board explained in *Fintiv*, "[i]f a petitioner is unrelated to a defendant in an earlier court proceeding, the Board has weighed this fact *against exercising discretion* to deny institution under *NHK*." *Fintiv*, Paper 11 at 13–14 (emphasis added). The Board determined in *Sand Revolution* that "[a]lthough it is far from an unusual circumstance that a petitioner in *inter partes* review and a defendant in a parallel district court proceeding are the same, or where a district court is scheduled to go to trial before the Board's final decision would be due in a related *inter partes* review, this factor weighs in favor of discretionary denial." *Sand Revolution II, LLC v. Continental Intermodal Group–Trucking LLC*, IPR2019-01393, Paper 24 at 12–13 (June 16, 2020) (informative) ("*Sand Revolution*"). Here, it is undisputed that Petitioner is a defendant in the parallel litigation scheduled to go to trial before the final written decision is due in this

proceeding. Therefore, we find that factor 5 weighs in favor of exercising our discretion to deny institution.

Factor 6: Other circumstances that impact the Board's exercise of discretion, including the merits.

The final *Fintiv* factor is a catch-all that considers any other relevant circumstances. The decision whether to exercise discretion to deny institution is based on "a balanced assessment of all relevant circumstances in the case, including the merits." Consolidated Trial Practice Guide 58 (Nov. 2019), *available at* https://www.uspto.gov/TrialPracticeGuide Consolidated. "For example, if the merits of a ground raised in the petition seem particularly strong on the preliminary record, . . . the institution of a trial may serve the interest of overall system efficiency and integrity because it allows the proceeding to continue in the event that the parallel proceeding settles or fails to resolve the patentability question presented in the PTAB proceeding." *Fintiv*, Paper 11 at 14−15. A full merits analysis is not necessary as part of deciding whether to exercise discretion not to institute, but rather the parties may point out, as part of the factor-based analysis, particular "strengths or weaknesses" to aid the Board in deciding whether the merits tip the balance one way or another. *Id.* at 15−16.

With respect to the merits of the proceeding, Patent Owner argues that "Petitioner has failed to show a reasonable likelihood that any of the challenged claims are unpatentable based on numerous deficiencies in Petitioner's invalidity grounds and the relied upon prior art." Prelim. Resp. 24. Patent Owner further argues that "[i]n any event, even if the merits did favor Petitioner (which they do not), the other *Fintiv* factors discussed above overwhelmingly favor denial of institution." *Id.*

We have reviewed Petitioner's unpatentability arguments and supporting evidence. As discussed below, on this record, we determine that Petitioner has demonstrated sufficiently for purposes of this Decision a reasonable likelihood that the challenged claims of the '574 patent are unpatentable. Based on this preliminary record, however, we are unable to discern whether the merits are particularly strong here.

Therefore, weighing the facts in this particular case, including the strength of the merits of the grounds in the petition, we find that factor 6 weighs neither in favor of nor against exercising our discretion to deny institution.

Conclusion on Discretionary Denial Under § 314(a)

As noted in *Fintiv*, we consider the above factors when taking "a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review." *Fintiv*, Paper 11 at 6. Under such a holistic view, we determine that the above-discussed factors do not support exercising our discretion to deny institution.

Accordingly, under the particular circumstances of this case, we are not persuaded that the interests of efficiency and integrity of the system would be best served by invoking our discretion under § 314(a) to deny institution of a potentially meritorious Petition.

B. 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 "words of a claim 'are generally given their ordinary and customary meaning.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). The ordinary and customary meaning of a claim term applies

"unless the patentee demonstrated an intent to deviate from [it] . . . by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." *Teleflex, Inc. v. Ficosa N. America Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002); *see also Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014). Thus, although we "look to the specification and prosecution history to interpret what a patentee meant by a word or phrase in a claim," we do not read "extraneous limitations . . . into the claims from the specification or prosecution history" absent an express definition or clear disavowal of claim scope. *Bayer AG v. Biovail Corp.*, 279 F.3d 1340, 1348 (Fed. Cir. 2002).

Petitioner provides constructions of seven terms or phrases. Pet. 7–14. Patent Owner argues the terms are clear and do not require any special construction. Prelim. Resp. 12. According to Patent Owner, the terms should be given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. Patent Owner further argues that Petitioner's proposed constructions (1) are "divorced from the plain and ordinary meaning," and (2) are inconsistent with its constructions proffered in the district court proceeding. *Id.* 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.*, 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)).

1. "without modification or circumvention of the router"

With respect to the phrase "without modification or circumvention of the router" in claim 1, and similar phrases in claims 6, 12, and 22, Petitioner

proposes a construction of "using communication protocol(s) that enable communication through the router." Pet. 8. Petitioner points to 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 points to 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 further points to extrinsic evidence to show that a person of ordinary skill would know that routers and firewalls "were ubiquitous and certain communications protocol(s) could enable transmissions to pass through (*i.e.*, not circumvent) a router/firewall without modifying the router/firewall." *Id.* (citing Ex. 1007 ¶¶ 52–55, 188; Exs. 1015, 1016, 1036–1041).

Patent Owner argues that the proposed construction is "divorced from the plain and ordinary meaning of the claim term and does not appear to be relevant to Petitioner's invalidity arguments." Prelim. Resp. 13.

The teaching of an unmodified or non-circumvented router is a subject of Patent Owner's arguments for each of the grounds raised by Petitioner. *See, e.g.*, Prelim. Resp. 39–40, 51–53. Thus, the meaning of the term is in controversy. Although we credit Petitioner's evidence supporting protocols that permit transmissions to pass through a router/firewall, Petitioner has insufficiently explained how the scope of "without modification or circumvention of the router" is limited to use of protocols. We note that

Patent Owner asserts that a local proxy server "inside" the router may be used to circumvent that router. Prelim. Resp. 40–41. Patent Owner does not provide a clear explanation of how the router is circumvented, and does not relate the circumvention to the presence or absence of protocols. Based on the evidence in the record, we construe the phrase "without modification or circumvention of the router" under its ordinary and customary meaning for purposes of institution, recognizing that further briefing may help clarify the construction further.

2. "autonomous broadcast device" ("ABD")

With respect to the term "autonomous broadcast device" ("ABD"), Petitioner argues that it should be construed as a means-plus-function term under 35 U.S.C. § 112(6). Pet. 7. Petitioner's proposed construction, however, is "a device capable of broadcasting video and audio content is without user intervention." *Id.* We find no meaningful distinction between Petitioner's construction and the ordinary and customary meaning of the term. Therefore, for purposes of institution, we adopt Petitioner's construction, without determining whether the term invokes § 112(6), as it is consistent with the claims and Specification.

3. "scheduling logic"

With respect to the term "scheduling logic," Petitioner argues that it should be construed as a means-plus-function term under 35 U.S.C. § 112(6). Pet. 12. Petitioner's proposed construction, however, is "hardware, firmware, software, and/or combinations of each to perform a function(s) or an action(s)" that are "related to scheduling." *Id.* (citing Ex. 1001, 7:37–44). We find no meaningful distinction between Petitioner's construction and the ordinary and customary meaning of the term; nor is this

term "in controversy" at this stage of the proceeding. For purposes of institution, we adopt Petitioner's construction, without determining whether the term invokes § 112(6), as consistent with the claims and Specification.

4. Additional Claim Terms

With respect to the terms "streaming information" "contemporaneously with the live event," "transmitted [received] out of band," and "dynamically scaling the server" both parties point to the corresponding explanations in the Specification. Pet. 10–11, 13–14; Prelim. Resp. 14–15. Neither party provides evidence for the meaning of these terms beyond the Specification. Patent Owner further argues, and we agree, that these terms do not appear to matter for Petitioner's invalidity arguments. Prelim. Resp. 13–14. Consequently, we need not construe those terms beyond the meaning given by the cited portions of the Specification for purposes of institution.

C. Principles of Law

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.[8] *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.

D. 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). Further, 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).

[8] At this stage of the proceeding, Patent Owner has not presented objective evidence of non-obviousness.

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 asserts 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.

Pet. 11–12 (citing Ex. 1007 ¶ 28; Ex. 2001 ¶ 20).

Under either party's assertion, 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 the parties' assessments is whether "2–3 years" or "four years" of experience is appropriate. Although both parties rely on their declarants, neither declarant 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). For purposes of this Decision, we do not determine

this difference to be dispositive; rather, we determine that the appropriate level is between two and four years of experience.

E. 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.

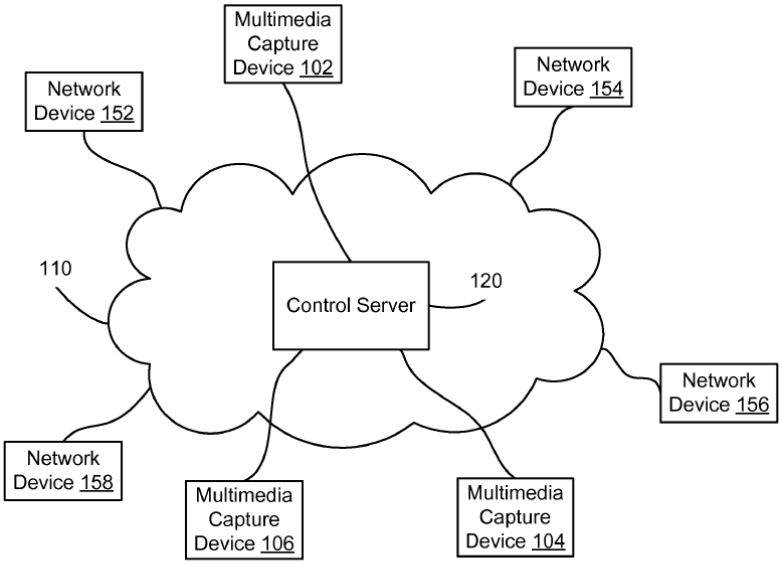

FIG. 1

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.

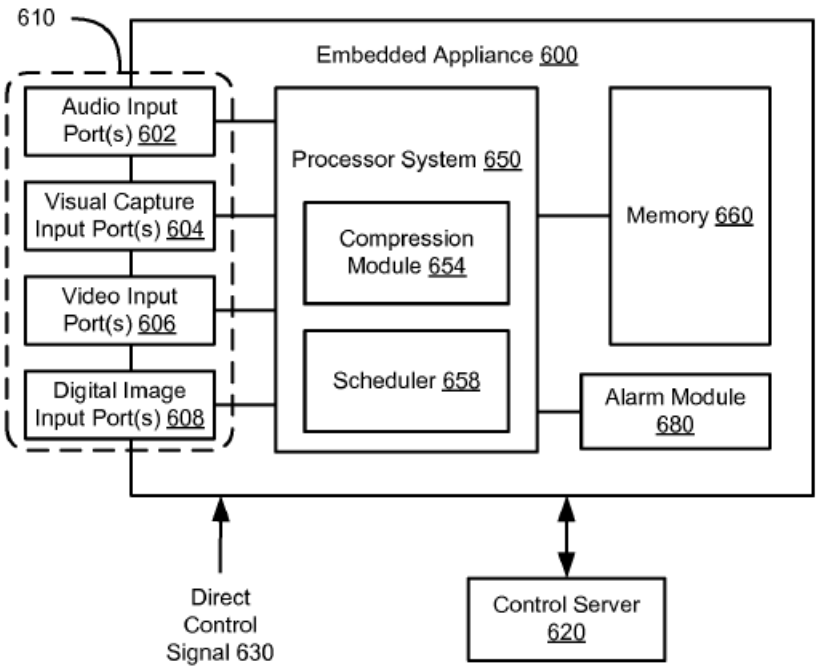

FIG. 6

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.

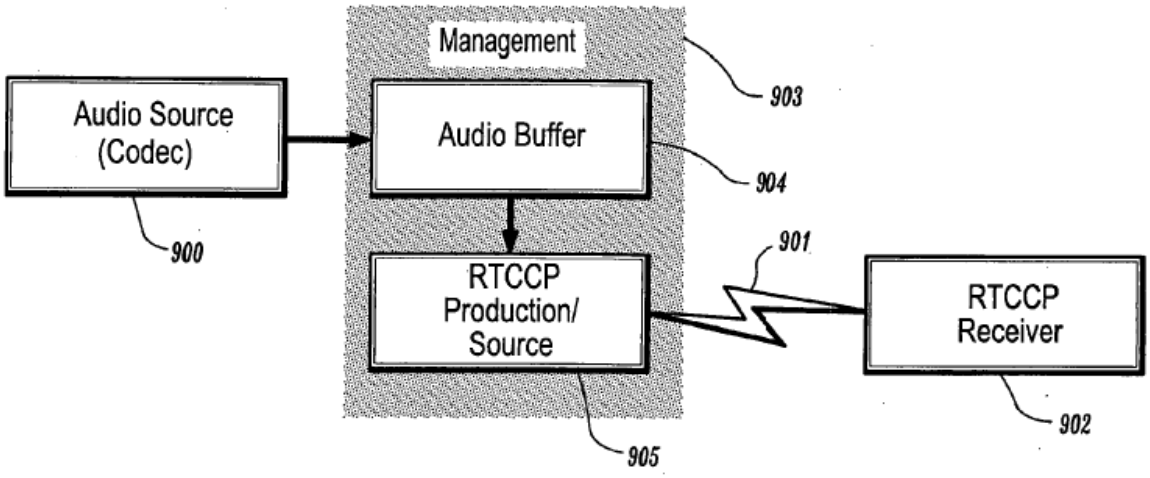

FIG. 9

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.

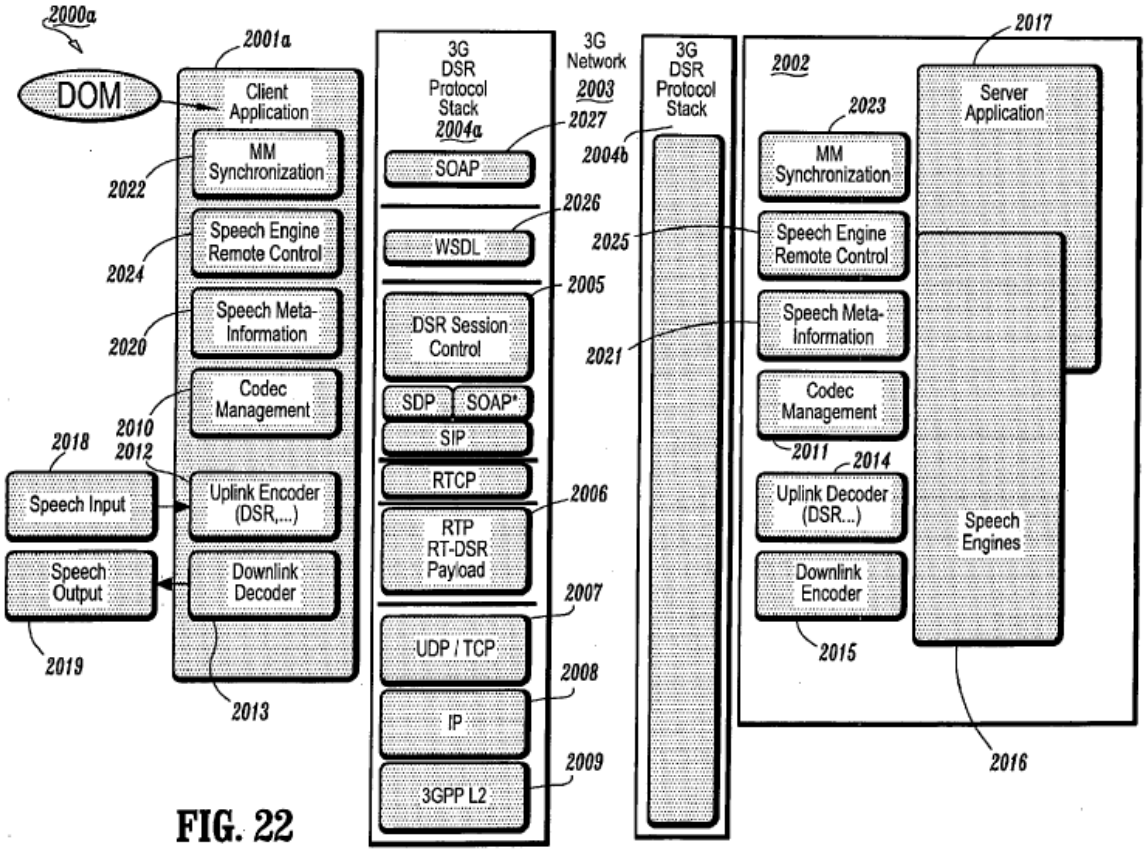

FIG. 22

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.

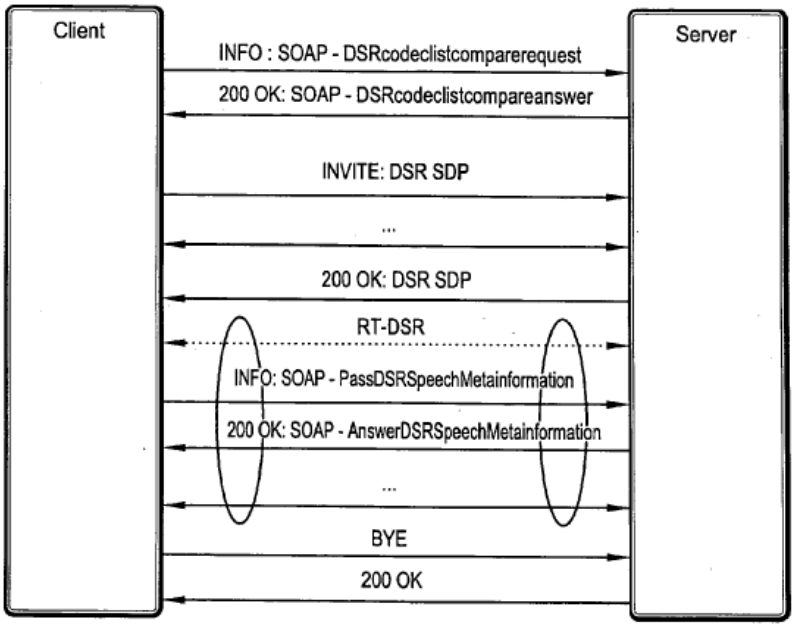

FIG. 28

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. Horowitz (Ex. 1010)

Horowitz is a U.S. Patent Publication, published on April 22, 2004, titled "Dynamic Program Events Recording." Ex. 1010, codes (12), (43), (54). Horowitz is directed to recording a video broadcast in its entirety when a request is made for an updated event schedule corresponding to the video broadcast. *Id.* at code (57). According to Horowitz, this enables the

recording of an entire program even if a show is disrupted or off-schedule for some reason or if it conflicts with another program to be recorded. *Id.* ¶ 18. Horowitz discloses a client device that records content "by requesting and receiving actual starting and ending times of the program to ensure the entire program is recorded." *Id.* ¶¶ 1, 51. One embodiment of Horowitz is illustrated in Figure 6, reproduced below.

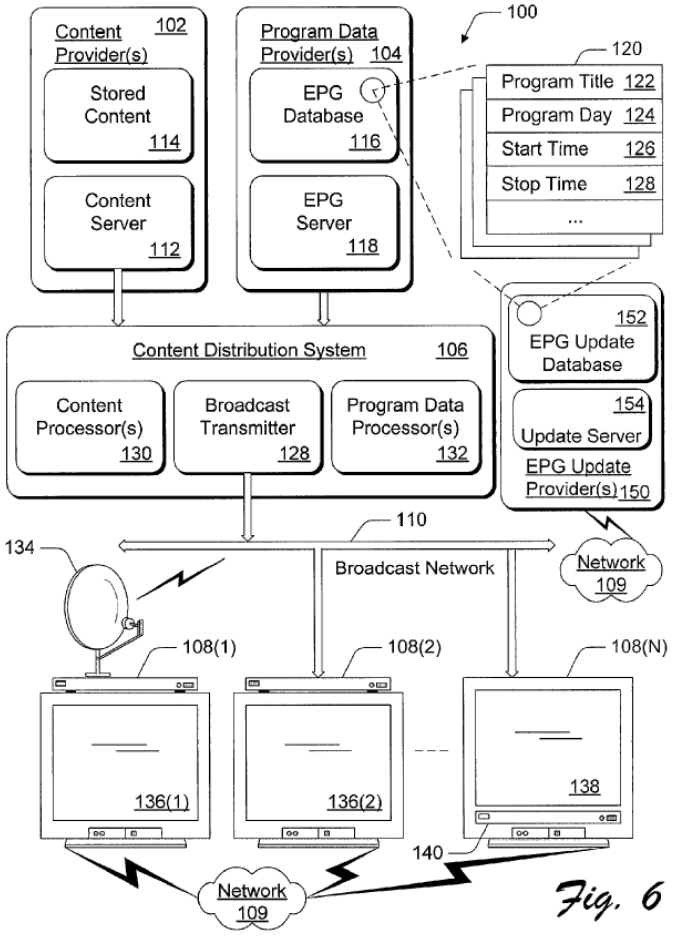

Figure 6 of Horowitz, above, shows exemplary environment **100**, which is a television system that facilitates distribution of content and program data to multiple viewers. *Id.* ¶ 40. Horowitz discloses that client devices **108** receive broadcast content over network **109**, such as "live content (e.g., content that was not previously stored, such as live feeds)," and can be scheduled to record said content. *Id.* ¶¶ 41, 48, 20–21. Per

Horowitz, client devices **108** keep schedules up-to-date by transmitting "a request to one or more of the [electronic program guide] EPG update providers **150**" over the network 109. *Id.* ¶ 51. In response, Horowitz's update server **154** "serves EPG update data stored in EPG database **152** to any requesting client device **108**." *Id.* One embodiment of this process is illustrated in Figure 5, reproduced below.

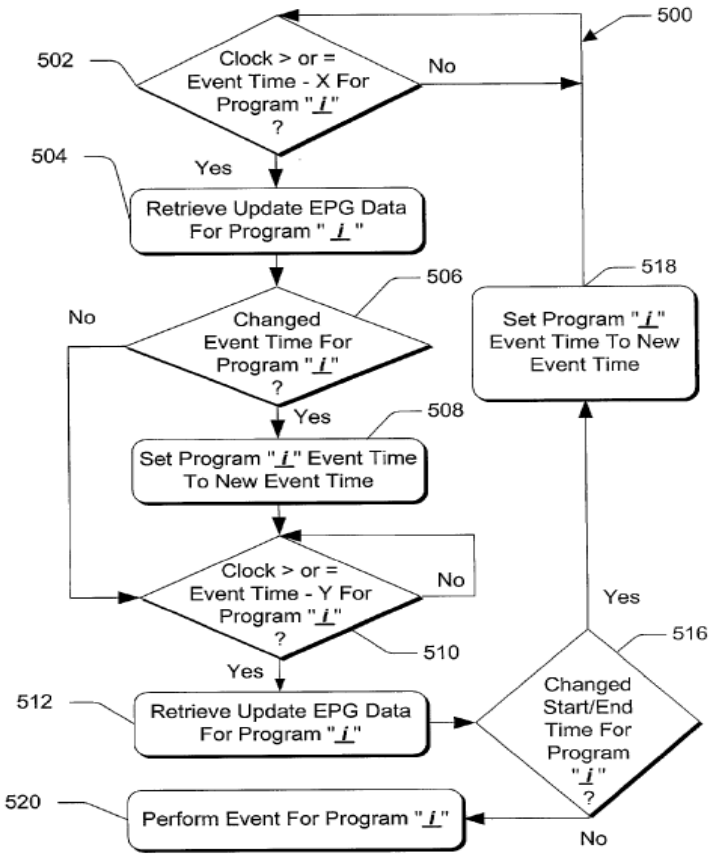

Fig. 5

Figure 5 shows a flow diagram of a procedure for requesting and receiving, at various times, an actual event schedule for a recording selection.

Ex. 1010 ¶ 14. Horowitz discloses updating a date, a start time, and a stop time for a television program that is scheduled to be recorded by a client device. *Id.* ¶ 33. The method, according to one embodiment in Horowitz, can be used to update original start, stop and duration times that were

obtained by the client device from original EPG data, or from another source such as a viewer's own knowledge. *Id.* Horowitz discloses that at predetermined times before an "event time," the client device: transmits a request for updated schedule information to the EPG update provider, receives the update data, and updates its information for the program scheduled to be recorded. *Id.* ¶¶ 34–36, Fig. 5, 502/504, 510/512. Horowitz further discloses that an "event time" is "for a program that is scheduled to be recorded," and includes "a start time, a stop time, or duration of the program." *Id.* ¶¶ 34–35.

4. Kim (Ex. 1012)

Kim is a Korean Patent Publication, published on September 15, 2003, titled "Fully Automatic Remote Management System Related to Video Streaming Encoder." Ex. 1012, codes (11), (19), (43), (54). Kim is directed to a video streaming encoder for use in, e.g., security, Internet broadcasting, and remote education. *Id.* at Abstract, 3:18-21. Kim provides a "fully automatic remote management system," in which "the video streaming encoder system should start by itself, captures and saves the video at the scheduled time, and at the same time, transports it to the media server." *Id.* at 3:16–17, 3:33–4:1. One embodiment of Kim is illustrated in Figure 1, reproduced below.

FIG. 1

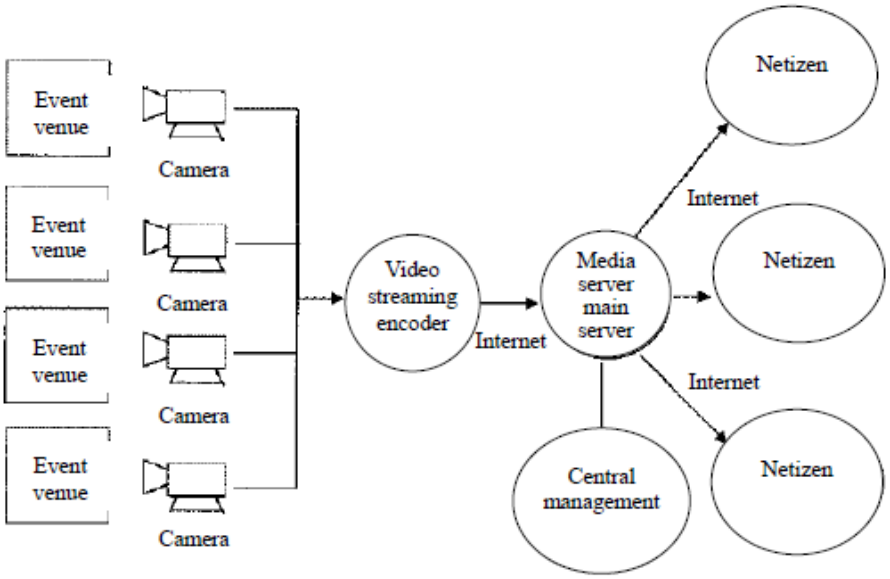

Figure 1 is a diagram of Kim's video streaming encoding system. *Id.* at 3:1. Kim discloses that the encoder in Figure 1, above, receives digital content from a camera at a venue and transmits the content over the Internet to a media server, which can stream the video over the Internet to one or more "netizens." *Id.* at 3:23–28, 4:24–25. Kim further discloses that a user "makes a reservation for the date and time when video transmission is required at the event venue where the camera is installed" and the video streaming encoder "downloads . . . the same-day video transmission schedule," "automatically captures the video at the scheduled date and time," "sends it to the media server ... according to the video transmission reserved date," and "automatically turn[s] OFF." *Id.* at 5:7–29. Another embodiment of Kim is shown in Figure 2, reproduced below.

FIG. 2

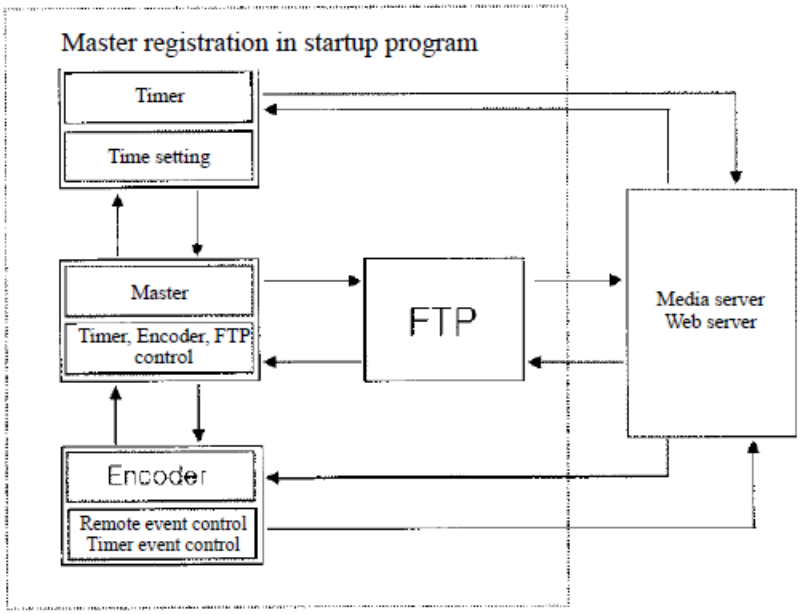

Figure 2 illustrates a configuration diagram of a remote management program related to a video streaming encoder. *Id.* at 3:2–3. According to Kim, the encoder automatically connects to the server to download recording reservations. *Id.* at 6:10–16, 6:27–32. Kim discloses that the encoder can operate without control signals from the server "using the reservation time table that is downloaded from the server in advance." *Id.* at 6:17–23.

5. 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.

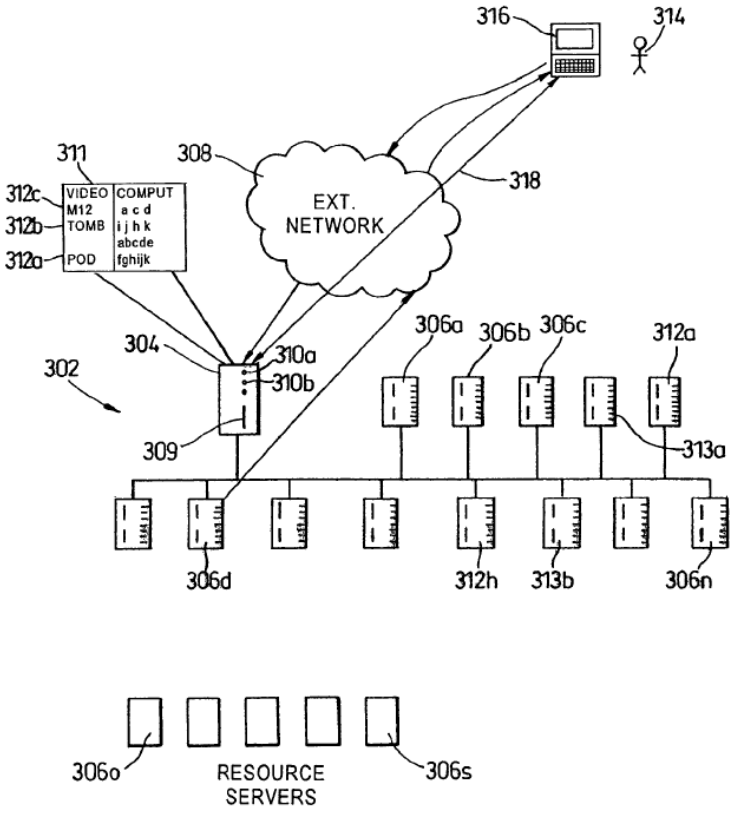

Fig. 3

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.

6. 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.

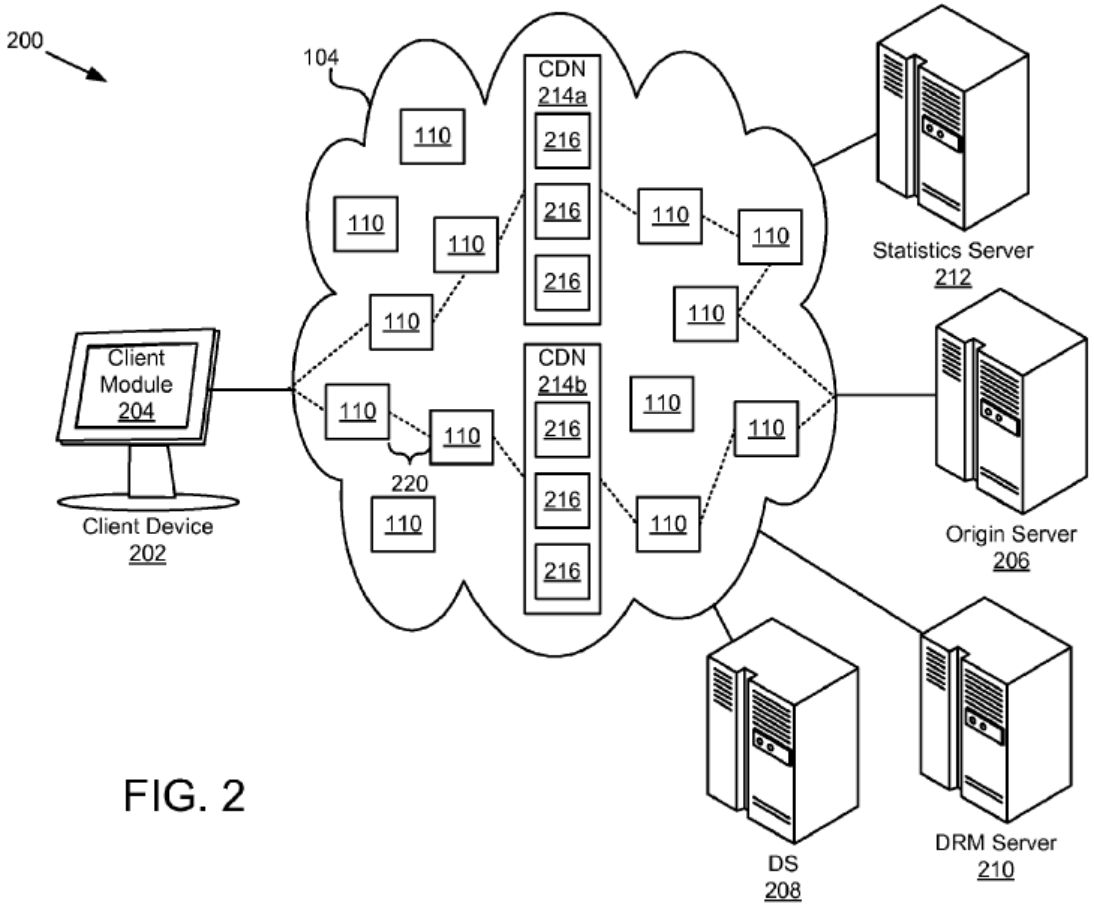

FIG. 2

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

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 ABD situated behind a router (that prevents remote access to the ABD), where the ABD sends a request and receives in response data relating to a recording start time" as required by all of the challenged claims. Prelim. Resp. 39–45. For the reasons discussed below, at this stage of the proceeding, we are persuaded that Petitioner has established a reasonable likelihood of success.

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 804 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 first notes that Allen does not expressly disclose routers or firewalls that would block communications between its components. Prelim. Resp. 39. Patent Owner then contends that the mere mention of a WAN by Allen does not indicate that "routers must be present." *Id.* at 44. Indeed, Patent Owner's declarant, Dr. Akl, testifies that a "large network could also be configured using switches instead of routers, which are simpler and often configured to allow local traffic to pass unabated." Ex. 2001 ¶ 85.

At this stage of the proceeding, we are satisfied 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. Despite Dr. Akl's testimony to the contrary, given the level of skill at the time of the invention, 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. As Patent Owner concedes, the "Internet is the largest and most complex WAN in existence." Prelim. Resp. 43.

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 discussing 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 Petitioner's reliance on either Allen or Maes for this limitation is unfounded. Prelim. Resp. 42. Patent Owner first argues, based on description in the '574 patent and testimony from its declarant, that WAN is a separate network type from the Internet. *Id.* at 43 (citing Ex. 1001, 8:44–47; Ex. 2001 ¶ 82). Patent Owner then argues that a WAN could use switches as an alternative option to routers. *Id.* at 44 (citing Ex. 2001 ¶ 85). Patent Owner also states that a person of ordinary skill in the art would not use the term "within a network" to describe Internet communications between two local networks." *Id.* at 43. Patent Owner also points to Allen's mention of "total bandwidth available within a portion of a network" and bandwidth bottlenecks as being inconsistent with the Internet. *Id.* at 43–44.

Patent Owner further contends that Maes' Distributed Conversational Protocols are not the same as a router that "prevents remote access to the ABD from outside the router." Prelim. Resp. 44–45 (citing testimony by Petitioner's declarant in the district court litigation that use of typical routers in Maes would not function without modification of the router, Ex. 2005, 135:3–7).

With respect to the use of a router that prevents remote access to the ABD from outside the router, Patent Owner argues that Allen does not expressly describe use of a router, and that use of a router blocking access to the ABD would prevent operations such as Allen's "ping"-based determination of ABD operational status. Prelim. Resp. 41–42. Patent Owner further argues that Maes' gateways are not typical routers, and are designed for the "free flow of traffic." *Id.* at 44–45.

At this stage of the proceeding, we are satisfied Petitioner has demonstrated sufficiently that the combined teachings of Allen and Maes would have taught or at least suggested the challenged limitation to one of skill in the art at the time of the alleged invention. Specifically, 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, Dr. Akl testifies 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. We note Patent Owner does not argue against Petitioner's assertion that Maes teaches establishing Internet connections. In view of the evidence presented at this stage of the proceedings, and for purposes of institution, we determine that Petitioner has sufficiently shown that the combination of references teaches or suggests communications over the Internet.

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

¶ 182), 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). Pet. 40.

Petitioner relies on Maes and Dr. Easttom when asserting that request protocols may pass unhindered through unmodified and uncircumvented firewalls. *Id.* (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. *Id.* at 41 (citing Ex. 1008 ¶ 182; 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 transmitter over a network." *Id.* (citing Ex. 1007 ¶ 246).

Patent Owner contends Allen's MCD does not meet the "sending a request" limitation because Allen's MCD is "prompted" to act by the controlling server, and therefore is not requesting instructions as claimed. Prelim. Resp. 40 (citing Ex. 1008 ¶¶ 1022–1023, 1062 ("in response to a request from the control server")).

Patent Owner then argues that these prompts from the server to the MCD, and control server "pings" to the MCD to check proper operation, would cause Allen to be unworkable should there exist intervening routers or firewalls blocking such communications. *Id.* at 41 (citing Ex. 1008 ¶ 1084; Ex. 2001 ¶ 80). Patent Owner further argues that Petitioner incorrectly describes a request from the MCDs to a control server, but instead is from the control server to a separate "scheduler," which is "coupled to or part of the control server," and that implies that the MCD-scheduler communication is similarly initiated by the server. *Id.* at 41–42 (citing Ex. 1008 ¶ 1100–1101). Patent Owner points to a specific embodiment in Allen where the MCD only receives communication from the scheduler. *Id.* (citing Ex. 1008 ¶ 1101).

At this stage of the proceeding, we are satisfied Petitioner has shown sufficiently that the combination of references to teach or suggest an ABD that issues a request for a schedule. Patent Owner acknowledges that Allen discloses that the MCDs can access a schedule on the control server. *See* Prelim. Resp. 40. To the extent that Allen provides other examples of MCDs being prompted by a server or lacks explanation as to how such accessing would occur, Allen remains prior art for what it teaches or suggests. We 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. Consequently, for purposes of institution, we determine Petitioner has sufficiently shown that the combination of references 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 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. Petitioner provides arguments and citations to Dr. Easttom's testimony in support of its position with regards to each claim element. Pet. 33–51 (citing Ex. 1007 ¶¶ 226–262). At this time, Patent Owner does not provide arguments specific to these limitations of claim 1. Prelim. Resp. 39–46 (citing Ex. 2001¶¶ 80–94). Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

We have reviewed Petitioner's arguments, the cited prior art, and the cited testimony from Dr. Easttom regarding the currently undisputed

limitations of claim 1. At this stage of the proceeding and based on the current record, we are persuaded that Petitioner's showing is sufficient to support institution.

e) 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, because Maes would not work with a router as it describes specialized gateways termed "Distributed Conversational Protocols." Prelim. Resp. 45-46. According to Patent Owner, there would be no need to insert "Distributed Conversational Protocols" into the network of Allen because (1) nothing in Allen suggests that its system is controlled by speech commands, (2) Maes' gateways pose no barrier between the client devices in Maes and the Internet, (3) Maes' gateways are nothing like the type of local area network routers, and (4) Maes does not address how or even whether its systems would function if there were a typical router at the location of the client device. *Id.* at 46 (citing Ex. 2001 ¶¶ 93–94; Ex. 2005, 135:3–7; Ex. 2011, 45:4–25).

Based on the current record, we are not persuaded by Patent Owner's argument. We agree with Petitioner, because for purposes of institution we understand Petitioner's combination as not relying on inserting a router into the system of Maes. Rather, Petitioner appears to rely on Maes for teaching that only some communications, such as those using request/response protocols like SIP/HTTP, may pass through routers, gateways, and firewalls, and for teaching certain encryption-related protocols. *See* Pet. 31, 35, 40, 43–45. Consequently, Patent Owner has not addressed sufficiently the combination set forth by Petitioner, and therefore, is not persuasive. In view

of Petitioner's expressed rationale for combining the teachings of Allen and Maes as arranged in the Petition, we conclude Petitioner has established adequately for purposes of this Decision that the combined disclosures of Allen and Maes teaches or at least suggests the limitations of claim 1.

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 Petitioner's arguments and supporting evidence in this present record, including the arguments summarized above for claim 1, we determine Petitioner has established adequately for purposes of this Decision that the combination of Allen and Maes teaches or suggests the limitations of claims 2–17, 21–24, 26, 30. Accordingly, we determine that Petitioner has demonstrated a reasonable likelihood that these claims also would have been obvious over the combination of Allen and Maes.

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

Based on the evidence in the present record, we are persuaded Petitioner has demonstrated a reasonable likelihood of prevailing in showing 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). Petitioner further provides rationale for combining the teachings of Slater with Allen and Maes. *Id.* at 58–59 (citing Ex. 1007 ¶ 307).

Patent Owner has not provided any arguments regarding Allen, Maes, and Slater separate or different from those relating to the combination of Allen and Maes. Prelim. Resp. 46–47. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

Having reviewed Petitioner's arguments and supporting evidence in this present record, including the arguments summarized above for claim 1, we determine Petitioner has established adequately for purposes of this Decision that the combination of Allen, Maes, and Slater teaches or suggests the limitations of claims 18–20, 25, and 27–29. Accordingly, we determine that Petitioner has demonstrated a reasonable likelihood that these claims also would have been obvious over the combination of Allen, Maes, and Slater.

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 assets 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 has not provided any arguments regarding Allen, Maes, and Hurst separate or different from those relating to the combination of Allen and Maes. *See* Prelim. Resp. 47. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

Having reviewed Petitioner's arguments and supporting evidence in this present record, including the arguments summarized above for claim 1, we determine Petitioner has established adequately for purposes of this Decision that the combination of Allen, Maes, and Hurst teaches or suggests the limitations of claims 18–20 and 27–29. Accordingly, we determine Petitioner has demonstrated a reasonable likelihood that these claims also would have been obvious over the combination of Allen, Maes, and Hurst.

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

Petitioner contends claims 1–17, 21–24, 26, and 30 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. 61–65 (citing Ex. 1007 ¶¶ 322–336). Petitioner specifically argues that Horowitz discloses a client device that issues "a request" over an Internet connection and, in response, update server 154 "serves EPG update data stored in EPG database 152" to the client device. *Id.* at 63 (citing Ex. 1010 ¶¶ 48, 51). Per Petitioner, the EPG update data includes a schedule "used to update original start, stop and duration times." *Id.* (citing Ex. 1010 ¶ 33).

Petitioner further argues that Horowitz explicitly discloses streaming live video received as a live feed by a server to second users:

> Additionally, content server 102 controls distribution of live content (e.g., content that was not previously stored, such as live feeds) and/or content stored at other locations to the content distribution system 106.

Id. at 64 (citing Ex. 1010 ¶ 41; Ex. 1007 ¶ 329). According to Petitioner, it would have been obvious that the real-time media signals, i.e., live feeds, received by the servers of Allen contemporaneously with the live event from an MCD also could be transmitted as real-time media signals from the

servers to users as disclosed in Horowitz. *Id.* (citing Ex. 1007 ¶ 330). Additionally, Petitioner asserts that a person of ordinary skill in the art would have had reason to live stream video in Allen's system to accommodate students wishing to view an in-progress lecture remotely, or "time-shifted," and such would require only ordinary skill. *Id.* at 64 (citing Ex. 1008 ¶ 1002; Ex. 1007 ¶ 330).

Patent Owner disagrees, arguing, that Horowitz relates to recording television programs on a DVR, not broadcasting, and therefore to the time the program would be broadcasted, not the time the recording would be begun. Prelim. Resp. 47 (citing Ex. 1007 ¶ 324). Patent Owner characterizes Horowitz as "merely checking the current television program broadcast schedule." *Id.* at 47–48. Patent Owner further characterizes Horowitz as only sometimes sending schedule data to the DVR. *Id.* (citing Ex. 1010 ¶ 20).

Patent Owner argues that Horowitz describes DVR set-top boxes in 2002, arguing that most connections at that time were not through a router, but through the box's service provider. *Id.* at 48 (citing Ex. 2001 ¶ 90). According to Patent Owner, Horowitz's set-top box is not at the location of a live event, and the user provides the program input directly into the client device, without input from the service provider except immediately before and during the recording. *Id.* at 48–49 (citing Ex. 1010 ¶¶ 20, 28). Patent Owner further asserts that Horowitz relies on user input that is made directly into the client device, which would cause the ABD to constantly communicate with the schedule server, and consequently lead a person of ordinary skill away from using Horowitz for remote scheduling of live broadcasting. *Id.* at 49 (citing Ex. 2001 ¶ 91).

Patent Owner contends that the systems and purposes of Allen, Maes, and Horowitz are so different that a person of ordinary skill in the art would have had no reason to look to Horowitz for a solution to the firewall/router problem addressed in the '574 patent. *Id.* at 49–50 (citing Ex. 2001 ¶ 95).

We understand Patent Owner's position but its arguments do not detract from Petitioner's assertion that Horowitz's DVR receives a schedule "used to update original start, stop and duration times." Pet. 63 (citing Ex. 1010 ¶ 33). Although Petitioner points to differences in purpose and operation between Horowitz and Allen, Petitioner has also shown that Allen involves a request for the schedule and a response from the server. *Id.* at 63–64. Consequently, for purposes of institution, we determine Petitioner has shown sufficiently that the combination of references teaches or suggests an ABD receiving a recording start time of a live event in response to the request.

With respect to the reason to combine references, we are not persuaded by Patent Owner arguments that the references are different from each other, and that Horowitz's subject matter is very different from the '574 patent. Prelim. Resp. 49–50. Obviousness may be established, however, by combining the teachings of available prior art; i.e., art that is analogous to the '574 patent. Because Patent Owner has not alleged that any reference is not analogous, or provided arguments sufficient to make such a showing, we are not persuaded by this argument at this time.

Accordingly, we conclude Petitioner has established adequately for purposes of this Decision that the combination of Allen, Maes, and Horowitz teaches or suggests the limitations of the challenged claims.

E. Alleged Obviousness of Claims 18–20, 25, and 27–29 in View of Allen, Maes, Horowitz, 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, Horowitz, and Slater and relies on many of the same arguments asserted in its Allen and Maes challenge and its Allen, Maes, and Slater challenge. Pet. 65–66. Petitioner contends Horowitz's recording schedule update feature would not affect incorporating Slater's server scaling, would require only ordinary skill, and would produce predictable results. *Id.* (citing Ex. 1007 ¶ 338).

Patent Owner has not provided any arguments regarding Allen, Maes, Horowitz, and Slater separate or different from those relating to the combination of Allen and Maes. Prelim. Resp. 50. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

Having reviewed Petitioner's arguments and supporting evidence in this present record, including the arguments summarized above for claim 1, we determine Petitioner has established adequately for purposes of this Decision that the combination of Allen, Maes, Horowitz, and Slater teaches or suggests the limitations of claims 18–20, 25, and 27–29. Accordingly, we determine that Petitioner has demonstrated a reasonable likelihood that these claims also would have been obvious over the combination of Allen, Maes, Horowitz, and Slater.

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

Allen, Maes, Horowitz, and Hurst and relies on many of the same arguments asserted in its Allen and Maes challenge and its Allen, Maes, and Horowitz challenge. Pet. 66. Petitioner contends Horowitz's recording schedule update feature would not affect incorporating Hurst's statistics features, would require only ordinary skill, and would produce predictable results. *Id.* (citing Ex. 1007 ¶ 341).

Patent Owner has not provided any arguments regarding Allen, Maes, Horowitz, and Hurst separate or different from those relating to the combination of Allen and Maes. Prelim. Resp. 50. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

Having reviewed Petitioner's arguments and supporting evidence in this present record, including the arguments summarized above for claim 1, we determine Petitioner has established adequately for purposes of this Decision that the combination of Allen, Maes, Horowitz, and Hurst teaches or suggests the limitations of claims 18–20 and 27–29. Accordingly, we determine that Petitioner has demonstrated a reasonable likelihood that these claims also would have been obvious over the combination of Allen, Maes, Horowitz, and Hurst.

G. Alleged Obviousness of Claims 1–17, 21–24, 26, and 30 in View of Kim 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 Kim and Maes. Pet. 67–82. Patent Owner disagrees, arguing, *inter alia*, that Kim and Maes do not teach "an ABD situated behind a router (that prevents remote access to the ABD), where the ABD sends a request and receives in response data relating to a recording start time" as required

by all of the challenged claims. Prelim. Resp. 51–53. For the reasons discussed below, at this stage of the proceeding, we are persuaded that Petitioner has established a reasonable likelihood of success.

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 Kim discloses an encoder in communication with, and remote from, a media server and main server over the Internet. Pet. 68 (citing Ex. 1012, 5:7–16, 6:17–26, Fig. 1; Ex. 1007 ¶ 348). According to Petitioner, Kim's use of an encoder communicating over the Internet "strongly suggests" that the encoder is behind a router. *Id*. Petitioner argues that "it was ubiquitous to use routers/gateways with built-in firewalls to connect client devices to the Internet." *Id*. at 69. Petitioner further argues that a person of ordinary skill in the art "would have understood the most common network configuration for Kim's encoder would involve situating it behind a router." *Id.* (citing Ex. 1007 ¶ 349).

Petitioner then cites to Maes's disclosure of a client device connected "via . . . a router." Pet. 69 (citing Ex. 1009 ¶¶ 180, 232; Ex. 1007 ¶ 350). According to Petitioner, it would have been obvious "to situate the encoder of Kim behind a router/firewall based on Maes and the general knowledge of a [person of ordinary skill in the art], because using conventional and prevalent networking features within the Internet network of Kim would require only ordinary skill and produce predictable results." *Id.* (citing Ex. 1007 ¶ 350).

Patent Owner has not provided any arguments regarding this specific claim limitation. Prelim. Resp. 51–52. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

At this stage of the proceeding, we are satisfied that the combined disclosures of Kim 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. We specifically credit the testimony of Dr. Easttom that:

> It would have been obvious to situate the encoder of Kim behind a router/firewall based on Maes and the general knowledge of a [person of ordinary skill in the art]. Use of such conventional and prevalent networking features within the Internet network of Kim would require only ordinary skill and would produce predictable results.

Ex. 1007 ¶ 350.

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 "Kim discloses establishing an Internet connection for its encoder behind a router because Kim expressly discloses its encoder communicates over the Internet" and "it would be obvious for Kim's encoder to be behind a router." Pet. 69 (citing Ex. 1012, 5:7–16, 6:17–26). Petitioner then asserts that the use of firewalls would prevent remote access to the ABD from outside the router in the asserted combination. *Id.* (citing Ex. 1007 ¶ 352). According to Petitioner, Kim's

encoder would necessarily be behind a router, and, since Kim discloses communicating between the encoder and servers "through the Internet," Kim's encoder is remote from the server (claim 22), and the request and response are sent "via the Internet connection" and "over the network" (claims 1, 6, 12). *Id.* at 73 (citing Ex. 1007 ¶ 360).

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.* at 69 (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 ¶ 352).

Patent Owner contends Petitioner's reliance on either Kim or Maes for this limitation is unfounded. Prelim. Resp. 51. Patent Owner first argues, that use of a router blocking access to the ABD would prevent Kim from functioning properly because "Kim was meant to operate in an environment where there is a pre-existing free and open communication channel between the encoder and the server, perhaps using one of the prior-art methods described in the '574 Patent." *Id.* at 52 (citing Ex. 2001 ¶ 88).

At this stage of the proceeding, we are satisfied Petitioner has demonstrated sufficiently that the combined teachings of Kim and Maes would have taught or at least suggested the challenged limitation to one of skill in the art at the time of the alleged invention. Specifically, we credit Dr. Easttom's testimony that, at the critical time, "it was ubiquitous to use routers/gateways with built-in firewalls to connect client devices to the Internet." Ex. 1007 ¶ 349. Dr. Easttom further testifies that it would have been obvious to a person of ordinary skill in the art to put Kim's encoder behind a router. *Id.* ¶ 350. Therefore, we are not persuaded currently by

Patent Owner's argument that use of a router blocking access to the ABD would prevent Kim from functioning properly.

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"*

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." Ex. 1001, 26:38–42.

Petitioner contends Kim discloses autonomously issuing a request to a server and receiving data relating to a recording start time in response to the request because Kim's encoder "turns itself on" or "starts by itself," connects "to a main server," and retrieves (e.g., "downloads" or "grasps") "a schedule," and "automatically" captures video "at the scheduled date and time." Pet. 71–72 (citing Ex. 1012, 4:20–29, 5:14–20, 6:14–16, 7:20–21; Ex. 1007 ¶ 357). According to Petitioner, Kim's encoder is "installed with the 'Fully Automatic Remote Management Program'" that connects to the main server and "downloads the video transmission reservation time table from the server." *Id.* at 72–73 (citing Ex. 1012, 6:14–16).

Petitioner then contends Kim's use of (1) a main server for reservation/encoder scheduling and (2) a media server for receiving live video from the encoder and serving the live video to viewers qualifies as the recited "first and second servers" because Kim discloses a main server. Pet. 73 (citing Ex. 1012, 4:24–25, 6:17–18, 7:20–21). Petitioner then argues "it would have been obvious for the first server and the second server to be one server because a [person of ordinary skill in the art] could configure

servers in any number of ways, and/or use a single server for multiple functions." *Id.* (citing Ex. 1007 ¶ 360).

Petitioner relies on testimony from Dr. Easttom to support its position. Dr. Easttom opines that a person of ordinary skill in the art would have understood that in order to "download" data from the server, "the encoder would necessarily issue a request, and the server would respond to the request by serving the schedule to the client." Ex. 1007 ¶¶ 71, 359.

Patent Owner contends Petitioner misreads Kim, because Petitioner assumes that the term "grasp" in Kim means to "download" and that "download" requires a request. Prelim. Resp. 51. Patent Owner argues that Petitioner's assumption is incorrect for two reasons. *Id.* First, according to Patent Owner, the term "grasp" is not a term that has a specific meaning in networking. *Id.* (citing Ex. 2001 ¶ 86; Ex. 2005, 182:19–183:1 (Dr. Easttom agreeing "grasp" is not a term of art)). Patent Owner asserts that in light of the disclosures in Kim about checking its schedule once every day, a person of ordinary skill in the art would more likely interpret "grasp" to mean "appreciate" or "understand." *Id.* (citing Ex. 1012, 4:19–27, 6:10–13; Ex. 2001 ¶ 86). To Patent Owner that means Kim's encoder simply accesses an internally-stored schedule to determine when it needs to broadcast. *Id.* Patent Owner concluded that this is consistent with Kim's disclosure that the encoder "judges" how it should operate based on the schedule. *Id.* (citing Ex. 1012, 5:20). According to Patent Owner, it would not be apparent to a person of ordinary skill in the art the term "grasp" in this context would mean "downloading from a remote server over the Internet in a way where a communication channel is initiated from Kim's encoder." *Id.* (citing Ex. 2001 ¶ 86).

Second, Patent Owner contends Petitioner is incorrect in assuming that "download" means Kim issues a request. *Id.* at 51–52. Patent Owner argues that plain and ordinary meaning of "download" relates simply to "receiving data," and does not require that a prior request or communication of any kind be made. *Id*. at 52 (citing Ex. 2001 ¶ 87). Patent Owner asserts that "such a download could take place in Kim without a request using any of the prior-art methods described in the '574 Patent such as port forwarding, a DMZ or a VPN." *Id.* According to Patent Owner, "[t]here is no suggestion of a communication channel that is initiated or opened by a request from the encoder." *Id.*

At this stage of the proceeding, we are satisfied Petitioner has demonstrated sufficiently that the combined teachings of Kim and Maes would have taught or at least suggested the challenged limitation to one of skill in the art at the time of the alleged invention. Specifically, for purposes of this Decision, we credit Dr. Easttom's deposition testimony where he states "that to download something, you have to have requested the download." *See* Ex. 2005, 182:4–12. Based on the current record, we are persuaded Petitioner has shown adequately that Kim discloses "downloading." *See* Ex. 1012, 6:14–16.

d) receive data relating to a recording start time of a live event from the first server in response to the request"

Claim 1 recites "receive data relating to a recording start time of a live event from the first server in response to the request." Ex. 1001, 26:42–44.

Petitioner contends Kim discloses receiving digital content after a recording start time from a recording device proximate to the live event because Kim's encoder performs encoding "using the reservation time table

that is downloaded from the server in advance" and "automatically shoots, stores and captures with the camera," where the camera is proximate to the event venue (live event). Pet. 74 (citing Ex. 1012, 4:24–25, 6:17–20, Fig. 1; Ex. 1007 ¶ 361). According to Petitioner, receipt of this digital content does "not require any router/firewall circumvention" because "Kim's encoder and camera are co-located with the encoder using the camera to capture the video, i.e., both behind the same router/firewall." *Id*.

Patent Owner has not provided any arguments regarding this specific claim limitation. Prelim. Resp. 51–52. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

At this stage of the proceeding, we are satisfied that the combined disclosures of Kim and Maes would have taught or at least suggested to one of ordinary skill in the art an ABD that receives digital content after a recording start time from a recording device proximate to a live event because Kim explicitly discloses that the "video streaming encoder automatically shoots, stores and captures with the camera and transports to the media server at the time when the real-time service is reserved." *See* Ex. 1012, 4:24–25, 6:17–20, Fig. 1.

e) "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 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 Kim and Maes. Petitioner provides arguments and citations to Dr. Easttom's testimony in support of its position with regards to each claim element. Pet. 75–79 (citing Ex. 1007 ¶¶ 362–369). At this time, Patent Owner does not provide arguments specific to these limitations of claim 1. Prelim. Resp. 51–53 (citing Ex. 2001 ¶¶ 86–94). Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

We have reviewed Petitioner's arguments, the cited prior art, and the cited testimony from Dr. Easttom regarding the currently undisputed limitations of claim 1. At this stage of the proceeding and based on the current record, we are persuaded that Petitioner's showing is sufficient to support institution.

f) Alleged Reasons to Combine the Teachings of Kim 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 Kim and Maes because both involve transmitting digital content from client devices to servers over the Internet. Pet. 67 (citing Ex. 1012, 6:33–35, Fig. 2; Ex. 1007 ¶ 344). According to Petitioner, Kim does not disclose using particular signaling/description or transport protocols to transmit digital content, but such protocols would have been needed to communicate with 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; Ex. 1007 ¶ 345).

Patent Owner contends Kim and Maes would not have been combined by one having ordinary skill in the art, because Maes would not work with a router as it describes specialized gateways termed "Distributed Conversational Protocols." Prelim. Resp. 52–53. According to Patent Owner, there would be no need to insert "Distributed Conversational Protocols" into the network of Kim because (1) "Kim clearly does not teach a system in which encoders can communicate with the control server if an unmodified router or firewall between the components prevents remote access to the encoder," (2) "Kim does not even explicitly disclose routers or firewalls," (3) "Maes does not disclose routers that would prevent remote access to a client device," and (4) "Maes teaches specialized gateways that are 'Distributed Conversational Protocols' positioned between the PSTN and Maes's DSR system." *Id.* at 53 (citing Ex. 2001 ¶¶ 93–94).

Based on the current record, we are not persuaded by Patent Owner's argument. We agree with Petitioner, because for purposes of institution we understand Petitioner's combination as not relying on inserting an encoder or router into the system of Maes. Rather, Petitioner appears to rely on Maes for teaching that only some communications, such as those using request/response protocols like SIP/HTTP, may pass through routers, gateways, and firewalls, and for teaching certain encryption-related protocols. *See* Pet. 75–76. Consequently, Patent Owner has not addressed sufficiently the combination set forth by Petitioner, and therefore, is not persuasive. In view of Petitioner's expressed rationale for combining the teachings of Kim and Maes as arranged in the Petition, we conclude Petitioner has established adequately for purposes of this Decision that the combined disclosures of Kim and Maes teaches or at least suggests the limitations of claim 1.

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 Kim and Maes is asserted to teach each limitation not found in claim 1. Pet. 68–82 (citing Ex. 1007 ¶¶ 348–405). 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 Petitioner's arguments and supporting evidence in this present record, including the arguments summarized above for claim 1, we determine Petitioner has established adequately for purposes of this

Decision that the combination of Kim and Maes teaches or suggests the limitations of claims 2–17, 21–24, 26, 30. Accordingly, we determine that Petitioner has demonstrated a reasonable likelihood that these claims also would have been obvious over the combination of Kim and Maes.

3. Preliminary Conclusion on Alleged Obviousness in view of Kim and Maes

Based on the evidence in the present record, we are persuaded Petitioner has demonstrated a reasonable likelihood of prevailing in showing 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 Kim and Maes.

H. Alleged Obviousness of Claims 18–20, 25, and 27–29 in View of Kim, 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 Kim, Maes, and Slater and relies on many of the same arguments asserted in its Kim and Maes challenge. Pet. 82. Petitioner provides additional explanation for the manner by which the combination of Kim, 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. *Id.* (citing Ex. 1007 ¶¶ 407–408). Petitioner further provides rationale for combining the teachings of Slater with Kim and Maes. *Id.* (citing Ex. 1007 ¶ 406).

Patent Owner has not provided any arguments regarding Kim, Maes, and Slater separate or different from those relating to the combination of Kim and Maes. Prelim. Resp. 53. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

Having reviewed Petitioner's arguments and supporting evidence in this present record, including the arguments summarized above for claim 1, we determine Petitioner has established adequately for purposes of this Decision that the combination of Kim, Maes, and Slater teaches or suggests the limitations of claims 18–20, 25, and 27–29. Accordingly, we determine that Petitioner has demonstrated a reasonable likelihood that these claims also would have been obvious over the combination of Kim, Maes, and Slater.

I. Alleged Obviousness of Claims 18–20 and 27–29 in View of Kim, 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 Kim, Maes, and Hurst. Pet. 82–83 (citing Ex. 1014 ¶¶ 45, 46, 72; Ex. 1007 ¶¶ 410–411). Petitioner further contends a person of ordinary skill in the art would have had reason "to incorporate Hurst's statistics features into the system of Kim to measure performance or track video usage, as suggested in Hurst." *Id.* (citing Ex. 1007 ¶ 409). Petitioner concludes that this would require only ordinary skill, and produce predictable results. *Id.*

Patent Owner has not provided any arguments regarding Kim, Maes, and Hurst separate or different from those relating to the combination of Kim and Maes. *See* Prelim. Resp. 54. Nonetheless, the burden remains on Petitioner to demonstrate unpatentability. *See Dynamic Drinkware*, 800 F.3d at 1378.

Having reviewed Petitioner's arguments and supporting evidence in this present record, including the arguments summarized above for claim 1, we determine Petitioner has established adequately for purposes of this

Decision that the combination of Kim, Maes, and Hurst teaches or suggests the limitations of claims 18–20 and 27–29. Accordingly, we determine Petitioner has demonstrated a reasonable likelihood that these claims also would have been obvious over the combination of Kim, Maes, and Hurst.

IV. CONCLUSION

For the foregoing reasons, we determine Petitioner has demonstrated there is a reasonable likelihood it would prevail in establishing the unpatentability of all claims challenged in the petition. Additionally, we decline to exercise our discretion under 35 U.S.C. § 325(d) or § 314 to deny the proposed challenges to patentability.

Our factual findings, conclusions of law, and determinations at this stage of the proceeding are preliminary, and based on the evidentiary record developed thus far. At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claim. Our final decision will be based on the record as fully developed during trial.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted as to claims 1–30 of the '574 patent on all challenges presented in the Petition, namely:

(1) Claims 1–17, 21–24, 26, and 30 under 35 U.S.C. § 103 as unpatentable over Allen and Maes;

(2) Claims 18–20, 25, and 27–29 under 35 U.S.C. § 103 as unpatentable over Allen, Maes, and Slater;

(3) Claims 18–20 and 27–29 under 35 U.S.C. § 103 as unpatentable over Allen, Maes, and Hurst;

(4) Claims 1–17, 21–24, 26, and 30 under 35 U.S.C. § 103 as unpatentable over Allen, Maes, and Horowitz;

(5) Claims 18–20, 25, and 27–29 under 35 U.S.C. § 103 as unpatentable over Allen, Maes, Horowitz, and Slater;

(6) Claims 18–20 and 27–29 under 35 U.S.C. § 103 as unpatentable over Allen, Maes, Horowitz, and Hurst;

(7) Claims 1–17, 21–24, 26, and 30 under 35 U.S.C. § 103 as unpatentable over Kim and Maes;

(8) Claims 18–20, 25, and 27–29 under 35 U.S.C. § 102 as unpatentable over Kim, Maes, and Slater; and

(9) Claims 18–20 and 27–29 under 35 U.S.C. § 102 as unpatentable over Kim, Maes, and Hurst.

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, the trial commencing on the entry date of this Decision.

PETITIONER:

Jacob LaCombe
Keith Harden
jlacombe@muckwilson.com
kharden@munckwilson.com

PATENT OWNER:

Mark McDougall
Joshua Friedman
Kyle Deighan
Bradely Pulfer
mmcdougall@calfee.com
jfriedman@calfee.com
kdeighan@calfee.com
bpulfer@calfee.com