

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DISH NETWORK LLC and DISH TECHNOLOGIES LLC,
Petitioner,

v.

SAFECAST LIMITED LLC,
Patent Owner.

IPR2023-01116
Patent 9,392,302 B2

Before THU A. DANG, KARL D. EASTHOM, and
CHRISTOPHER L. OGDEN, *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge*.

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

I. INTRODUCTION

DISH Network LLC and DISH Technologies LLC, Petitioner, filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–4, 6–9, and 12–15 of U.S. Patent No. 9,392,302 B2 (Ex. 1001, the “’302 patent”). Pet. 2–3. SafeCast Limited LLC, Patent Owner, filed a Preliminary Response. Paper 8 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2023). Institution of an *inter partes* review requires that “the information presented in the petition and . . . any 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.” 35 U.S.C. § 314(a). For the reasons set forth below, we determine that there is a reasonable likelihood that Petitioner will prevail with respect to at least one challenged claim. Accordingly, we institute an *inter partes* review of the ’302 patent.

II. BACKGROUND

A. *Real Parties in Interest*

The parties identify themselves as the real parties in interest. Pet. 70; Paper 7, 2.

B. *Related Matters*

Petitioner identifies the following district court proceedings as related matters involving assertion of the ’302 patent against Petitioner or other defendants: *SafeCast Ltd. v. AT&T Corp.*, No. 6-22-cv-00676 (W.D. Tex. June 27, 2022); *SafeCast Ltd. v. DISH Network Corp.*, No. 6-22-cv-00677 (W.D. Tex. June 27, 2022); *SafeCast Ltd. v. Google LLC f/k/a Google Inc.*, No. 6-22-cv-00678 (W.D. Tex. June 27, 2022); *SafeCast Ltd v. Home Box Office, Inc.*, No. 6-22-cv-00679 (W.D. Tex. June 27, 2022); *SafeCast Ltd. v.*

NBC Universal, Inc., No. 6-22-cv-00680 (W.D. Tex. June 27, 2022); *SafeCast Ltd. v. Paramount Global d/b/a Paramount, Inc.*, No. 6-22-cv-00682 (W.D. Tex. June 27, 2022); *SafeCast Ltd. v. Verizon Commun'cns Inc.*, No. 6-22-cv-00683 (W.D. Tex. June 27, 2022); *SafeCast Ltd. v. Verizon Communications Inc.*, No. 6-22-cv-00983 (W.D. Tex. Sept. 19, 2022); *Safecast Limited v. Dish Network Corporation*, No. 1-22-cv-03037 (D. Co. Nov. 22, 2022). Pet. 70–71. Petitioner also identifies IPR2023-00652, which involves a challenge to the same claims of the '302 patent. *Id.* at 70.

C. The '302 Patent

The '302 patent relates to a television broadcast system that includes a personal video recorder (PVR) for a television that allows an advertiser to control viewing of time-shifted programs with advertisements therein. *See* Ex. 1001, code (57). The '302 patent describes overcoming prior art problems that include “viewer dislike” when a broadcaster inhibits viewers from fast forwarding through advertisements stored within a television program in a PVR, and another problem of causing the viewing of advertisements “that are unsuitable for the actual time of viewing.” *See id.* at 2:42–52.

Figure 4 of the '302 patent, as annotated by Petitioner, follows (Pet. 5):

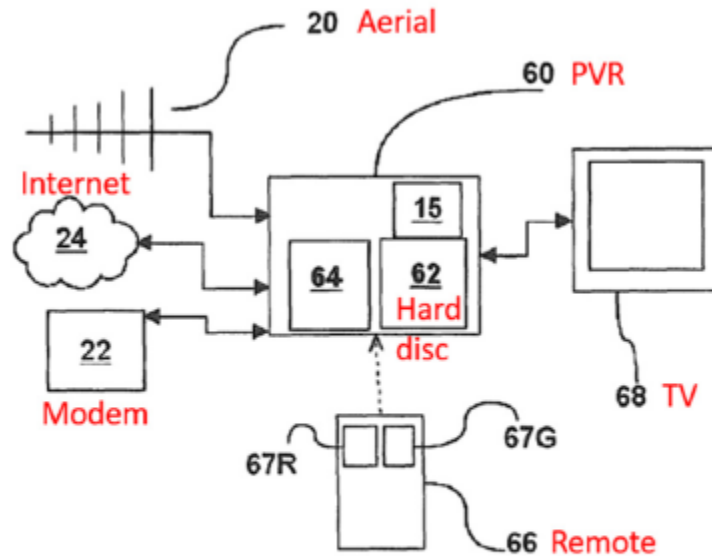


Fig 4

As annotated by Petitioner (red lettering), Figure 4 illustrates aerial (i.e., antenna) 20, PVR 60 (with hard disc 62), television (TV) set 68, remote control 66, Internet 24, and modem 22. *See* Pet. 5; Ex. 1001, 4:43–62, Fig. 4. PVR 60’s hard disc 62 includes three databases, advertisement database 70, program database 80, and rules database 90 for storing advertisements, broadcast program segments, and rules that apply to the advertisements, respectively. Ex. 1001, 4:57–62, Fig. 5.

Each advertisement, interleaved with broadcast programs and received via aerial 20, the Internet 24, or modem 20 “as in the prior art,” includes a header with data “record[ing] the duration of the advert, any restriction on the time of day at which it may be viewed, and other information about its nature regarding various characteristics of the advertisement.” *See* Ex. 1001,

3:56–67, 4:43–45. Each header includes “a series of fields” to store different data, e.g., [n]umber of times advert is to be shown,” and a “[c]ode to indicate time of day when [the] advert may be shown.” *Id.* at 3:67–4:24.

Based on input from the broadcaster, the PVR 60 “ensure[s] provision of legally acceptable adverts during a time shifted viewing of a previously broadcast programme, while also providing an advantageous mixture of advertisement types.” *Id.* at 6:33–37. As part of this process, PVR 60 checks a “Real Time of day signal” from the broadcaster, checks the rules database 90 for an appropriate advertisement duration, and selects one or more stored advertisements based on the duration. *Id.* at 6:40–53. PVR 60 reads the header information associated with the advertisement and checks for restrictions against playing the advertisement at the current time. *Id.* at 6:54–62. If there are applicable day or time restrictions, PVR 60 selects the next advertisement in the database and checks that advertisement, repeating the process until it finds a suitable advertisement. *Id.* After PVR 60 finds a suitable advertisement, it checks other information from the advertisement header and queues the appropriate advertisements in a buffer. *Id.* at 6:63–7:16. PVR 60 then shows the queued advertisements to the viewer and records button depressions from the viewer (if the ad is interactive). *Id.* at 7:17–22. PVR 60 also informs the broadcaster about displayed advertisements and user responses thereto (i.e., whether the viewer pressed keys in response to interactive ads). *Id.* at 7:22–27.

D. Illustrative Claim

Independent claim 1 is illustrative of the challenged claims, and follows (with bracketed information conforming to Petitioner’s notation (Pet. v)):

1.[a] A system for automating compliance with local broadcast regulations laid down by a broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening comprises:

[b] programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements;

[c] advertisement supply means to supply advertisements within the periodic breaks, [d] each advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown, and [e] a second field related to the number of times said advertisement has previously been shown during time-shifted viewing;

[f] rules database means containing rules relating to said local broadcasting time regulation;

[g] clock means to supply a real-time clock signal; and

[h] control means arranged to read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown;

[i] wherein the control means is further arranged to update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing.

E. Asserted Ground of Unpatentability

Petitioner contends that claims 1–4, 6–9, and 12–15 are unpatentable as follows:¹

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 6–9, 12, 13, 15	103(a)	Patten, ² Ben-Rubi, ³ AAPA ⁴
3, 4, 14	103(a)	Patten, Ben-Rubi, Plotnick, ⁵ AAPA

Pet. 3. Petitioner supports its Petition with a Declaration of W. Leo Hoarty. Ex. 1003.

III. ANALYSIS OF THE GROUNDS

A. Legal Standards

Section 103(a) forbids issuance of a patent when “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.”

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102, 103, effective March 16, 2013, which is after the ’302 patent’s earliest listed possible effective filing date, Dec. 1, 2010. *See* Ex. 1001, code (30). Therefore, the pre-AIA version of § 103 applies for purposes of institution.

² WO 2011/012909 A2, published Feb. 3, 2011, filed Aug. 2, 2010. Ex. 1004.

³ WO 2011/110893 A1, published Sept. 15, 2011, filed May 21, 2010. Ex. 1006.

⁴ Applicant Admitted Prior Art in the ’302 patent. *See, e.g.*, Ex. 1001, Fig. 1 (“Prior Art”).

⁵ U.S. Pat. Pub. No. 2002/0144262 A1, published Oct. 3, 2002. Ex. 1005.

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a)). The obviousness question involves resolving underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and when presented (not so here), (4) objective evidence of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Determining whether an invention would have been obvious under 35 U.S.C. § 103 requires resolving the level of ordinary skill in the pertinent art at the time of the effective filing date of the claimed invention. *Graham*, 383 U.S. at 17. The person of ordinary skill in the art is a hypothetical person who knows the relevant art. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors in determining the level of ordinary skill in the art include the types of problems encountered in the art, the sophistication of the technology, and educational level of active workers in the field. *Id.* One or more factors may predominate. *Id.*

Petitioner contends that person of ordinary skill in the art “would have held a bachelor’s degree in electrical or computer engineering or a related field (or equivalent understanding through actual work experience), and had at least two years of experience related to multimedia systems such as video and audio systems.” Pet. 9 (citing Ex. 1003 ¶¶ 1–10, 22–23). Patent Owner does not propose a level of ordinary skill. *See generally* Prelim. Resp.

Based on a review of the preliminary record, for purposes of the Institution Decision, we adopt Petitioner’s proposed level of ordinary skill in the art because it is consistent with the evidence of record, including the asserted prior art and ’302 patent specification, except that we delete the

qualifier “at least” to eliminate vagueness as to the stated amount of experience.

C. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the district-court-type standard, as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). See 37 C.F.R. § 42.100(b) (2023). Under this standard, claim terms have their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. See *Phillips*, 415 F.3d at 1313–14.

Petitioner relies on the ordinary and customary meaning under *Phillips* and provides constructions for several terms that recite the word “means.” Pet. 10–14. Patent Owner does not dispute Petitioner’s claim constructions. Prelim. Resp. 4. For purposes of institution, we adopt Petitioner’s claim constructions, because the preliminary record supports them, except as otherwise indicated below.

“Means-plus-function claiming occurs when a claim term is drafted in a manner that invokes 35 U.S.C. § 112, para. 6.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015). Section 112, paragraph 6 follows:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

“[S]tructure disclosed in the specification” is “‘corresponding’ structure,” “only if the specification or prosecution history *clearly links or associates* that structure to the function recited in the claim.” *B. Braun Med. Inc., v. Abbott Lab’s*, 124 F.3d 1419, 1424 (Fed. Cir. 1997) (emphasis added) (“Because Braun’s specification does not adequately disclose the valve seat as structure that holds the disc firmly in place, Braun has failed to particularly point out and distinctly claim that particular means.”). “This duty to link or associate structure to function is the *quid pro quo* for the convenience of employing § 112, ¶ 6.” *Id.* (citing *O.I. Corp. v. Tekmar Co.*, 115 F.3d 1576, 1583 (Fed. Cir. 1997)).

If the specification is not clear as to the structure that the patentee intends to correspond to the claimed function, then the patentee has not paid that price but is *rather attempting to claim in functional terms unbounded by any reference to structure* in the specification. Such is impermissible under the statute.

Med. Instrumentation & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1211 (Fed. Cir. 2003) (emphasis added); *see also Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc.*, 248 F.3d 1303, 1313 (Fed. Cir. 2001) (finding particular structures not to be corresponding structures because “one skilled in the art would not perceive any clear link or association between these structures and the [recited] function of connecting adjacent elements together”).

As one example of a “means” term in claim 1, Petitioner proposes certain terms agreed upon by Patent Owner in a related district court proceeding. *See* Pet. 10–14 (providing Table for means plus function limitations based on claim constructions from the district court (citing Ex. 1017, 24)).

For “programme supply means,” Petitioner identifies the function as “supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements.” *See* Pet. 11. Petitioner lists the corresponding structure as “hard disc 62 in PVR 60 with a part that stores programme database 80.” *Id.* (citing Ex. 1002 ¶ 82; Ex. 1001, 4:57–62). But that cited disclosure states that “programme database 80 . . . stores the broadcast programme segments.” *Id.* at 4:59–60. This storage does not clearly link database 80, which “stores the broadcast programme segments,” as corresponding to the “supply means” of the programmes.

Rather, the specification indicates that “the *broadcaster* broadcasts the programme with its interleaved advertisements,” indicating that a broadcaster is the source (i.e., “supply means”) of the programme and advertisements. *See* Ex. 1001, 5:33–34 (emphasis added). Even though Petitioner’s proposed claim construction points to portions of the PVR as part of the supply, the Petition also indicates that the Applicant admits that “[t]he prior art ‘PVR receives broadcast digital television and audio signals from an aerial 20,’ . . . , and that ‘the connections to an aerial 20, a modem 22 and the Internet 24 are as in the prior art.’” Pet. 18 (quoting Ex. 1001, 1:65–67, 4:44–45; Ex. 1003 ¶ 35). In any event, as discussed below, Petitioner shows that Patten discloses the supply means as a hard disk, which is consistent with the district court construction (and possibly with the ’302 patent), and also that television broadcasters supply broadcast television, at least the latter of which is consistent with the AAPA and the ’302 patent. To the extent there is a controversy, the parties should clarify the construction of “programme supply means” and other terms discussed below during the trial.

As another example, with respect to the “control means” as recited in claims 1 and 12, Petitioner contends that the corresponding structure is “hardware and/or software arranged to perform steps 102, 104, and 112 of FIG. 8 of the ’302 Patent, as described at 6:40–62 and 7:17–27 of the specification.” Pet. 12. Tracking the claim language in limitations 1.i and 1.h, Petitioner identifies two recited functions of the “control means” as follows: “read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown”; and “update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing.” *See id.* at 12–13.

However, it is not clear on this preliminary record if steps 102, 104, and 112 of Figure 8 represent (algorithmic) structure clearly linked to recited functions of the control means. First, steps 102, 104, and 112 of Figure 8 appear to include additional functionality not required by claim 1. *See* Ex. 1008, Fig. 8 (Step 102 describing a “mix of adverts”; step 112 describing “record any key depressions”), 7:17–17 (describing other functionality not required by the claim 1). Second, to the extent the process flow of Figure 8 also represents some algorithmic structure, it remains unclear on this preliminary record as to how much of any such structure is clearly linked to the recited functions of claim 1—as opposed to the unclaimed functionality described in Figure 8.

At this preliminary stage, we construe the corresponding structure as PVR hardware and/or software arranged to perform the recited functions of (1) to read said first field and said clock signal and said rules database; (2) to apply said local broadcasting time regulation to each advertisement before said advertisement is shown; and (3) to update the second field in the header of said

advertisement when said advertisement is again shown during time-shifted viewing.

In other words, it does not appear on this preliminary record that the specification clearly links specific hardware and/or software to these claimed functions, other than generally disclosing a PVR, which Petitioner also points to as corresponding structure. *See* Pet. 17–18 (pointing to the disclosed AAPA PVR and other known hardware items as represented in Figure 1 as performing “nearly all of the claimed features”); Ex. 1001, 4:43 (describing “a PVR 60 for use in a system according to the invention” according to Figure 4 (described above)).

In any event, at this preliminary stage, we are able to reach an institution decision on the merits. *Cf. Samsung Electronics America v. Prisia Eng’g Corp.*, 948 F.3d 1342, 1353 (Fed. Cir. 2020) (“[T]he proper course for the Board to follow, if it cannot ascertain the scope of a claim with reasonable certainty for purposes of assessing patentability, is to decline to institute the IPR or, if the indefiniteness issue affects only certain claims, to conclude that it could not reach a decision on the merits with respect to whether petitioner had established the unpatentability of those claims under sections 102 or 103.”).

To the extent claim construction of any claim term raises a material trial issue, the parties will have the opportunity during trial to clarify their positions and address it.

At this preliminary stage, it is not necessary to construe explicitly any claim terms further, because any explicit construction would not alter the outcome. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (stating that “we need only construe terms ‘that are in controversy, and only to the extent necessary to

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

D. Ground 1, Obviousness, Claims 1–3, 6–9, and 12–15

Petitioner asserts that claims 1–3, 6–9, 12, 13 and 15 would have been obvious under 35 U.S.C. § 103(a) based on the combined teachings of Patten, Ben-Rubi and Applicant Admitted Prior Art (“AAPA”). Pet. 26–59. Petitioner relies on the testimony of Mr. Hoarty. *See* Ex. 1003.

1. Patten

Patten, titled “Media Insertion System,” relates to filtering and selecting advertisements played during the playing of recorded content on a PVR. Ex. 1004 ¶ 2, code (54). Patent’s system replaces advertisements in a video program based in part on a user profile. *Id.* ¶ 2. To select the desired advertisement, Patten takes into account “[t]he time of day of playback” to comply with local broadcast regulations called “watershed restrictions,” which prohibit certain advertisements “outside the defined watershed times.” *Id.* ¶ 146.

To account for the watershed restrictions, Patten’s advertisements include associated metadata with “restriction codes.” Ex. 1004 ¶ 60. Patten’s restriction codes relate to “the type of product or service,” “the minimum age of viewer,” and, “the watershed after which the media item may be shown.” *Id.* ¶ 60.

2. Ben-Rubi

Ben-Rubi relates to playback of recorded media such as video 382, and insertion of advertisement 386 into the media. Ex. 1006, 2:18–3:2,

15:12–18, Fig. 3E.⁶ Ben-Rubi’s system inserts advertisements into a content file, e.g., broadcast program, as shown in the flowchart of Figure 6. *See id.* at 14:24–25, Fig. 6. Ben-Rubi also teaches selecting “an advertisement that matches the content file based on one or more predefined rules.” *Id.* at 14:36–37. The selection involves reading “one or more selection rules . . . from advertisement headers or metadata to determine how to match an advertisement with a content file.” *Id.* at 15:3–5. Then, the system inserts the selected advertisement into the recorded video file. *Id.* at 15:33–16:9. Ben-Rubi also discloses that controller 124 “reads one or more selection rules from . . . advertisement headers or metadata to determine how to match an advertisement with a content file.” *Id.* at 15:3–5.

3. Claim 1

As indicated above, Petitioner contends that claim 1 would have been obvious over Patten, Ben-Rubi, and AAPA. Patent Owner generally disagrees. *See generally* Prelim. Resp.

a) Preamble (Limitation 1.a)

The preamble claim 1, which Petitioner designates as limitation 1.a, recites “[a] system for automating compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements, said advertisements being provided during time-shifted viewing/listening comprises.” Petitioner contends that “[i]f the preamble is limiting,” Patten discloses it. Pet. 26.

Petitioner relies on Patten’s “targeted substitutional advertising (TSA)” technique, in which the system automatically selects various

⁶ Page numbers refer to original page numbers at the top of Ben-Rubi to correspond with Petitioner’s citations.

advertisements in view of certain criteria without user input. Pet. 26 (quoting Ex. 1004 ¶ 2). Petitioner explains that Patten selects the advertisement “at the broadcast receiver.” *Id.* (quoting Ex. 1004 ¶ 2). Petitioner also explains that, “[a]s part of the selection, Patten’s receiver takes into account ‘[t]he time of day of playback . . . so that media items having **watershed restrictions** may not be selected outside the defined watershed times.’” *Id.* (alteration and emphasis in original) (quoting Ex. 1004 ¶ 146).

According to Petitioner, “[t]he ‘watershed restriction’ is a local broadcasting regulation that applies to all broadcasted content (including advertisements).” Pet. 26. In addition, Petitioner contends that a person of ordinary skill in the art “would have understood Patten’s watershed restrictions prohibit certain content (e.g., adult-focused content) to be played during specific times of the day (e.g., Saturday mornings).” *Id.* (citing Ex. 1003 ¶ 49; Ex. 1007 (Paxton) ¶ 71). Petitioner contends that Patten’s “watershed rules are ‘statutory rules’ requiring service provider compliance.” *Id.* (quoting Ex. 1007 ¶ 130).

Petitioner also explains that the ’302 patent contemplates such watershed restrictions, where the ’302 patent highlights time-based based broadcasting restrictions by UK “Broadcast Committee of Advertising practice” as “watershed” restrictions. Pet. 27 (quoting Ex. 1001, 1:19–26).

Petitioner also submits that Patten “discloses substituting media, i.e., advertisements, in time-shifted, i.e., recorded, content: ‘**media substitution may be performed on playback.**’” Pet. 27 (emphasis in original) (quoting Ex. 1004 ¶ 141). Petitioner explains

that “Patten’s system optionally displays a different advertisement to a user when viewing the recording than the advertisement originally broadcast.” *Id.* (citing Ex. 1004 ¶¶ 141, 145 (“The substitutional selection for a slot may differ between a live break and a playback break.”)).

After a review of the preliminary record as summarized above, we determine that Petitioner’s showing for the preamble (even if it is limiting) based on Patten is sufficient for institution purposes. Patent Owner does not specifically address Petitioner’s showing for the preamble. *See generally* Prelim. Resp.

b) Limitation 1.b

Limitation 1.b recites “programme supply means to supply broadcast digital video/audio programmes having therein periodic breaks for the insertion of advertisements.” Petitioner contends that “Patten teaches this limitation through the recording of video programming having periodic advertisements breaks into a hard disk.” Pet. 27 (quoting Ex. 1003 ¶ 511). Petitioner also contends that Patten’s Figure 15 illustrates a receiver with hard disk 113 that receives “compressed video and/or audio data for recording and subsequent playback.” *Id.* at 29 (citing Ex. 1004 ¶ 178). Petitioner also contends that Patten describes a “programme receiver” that receives broadcasted video programming. *Id.* at 28 (citing Ex. 1004 ¶ 18). “The programming is ‘recorded at the receiver for subsequent output’ and has ‘a break defined therein such that media stored at the receiver may be output during the break.’” *Id.* (quoting Ex. 1004 ¶ 18). Petitioner also points out that the AAPA confirms that a person of ordinary skill in the art would have known that Patten’s advertising

breaks are periodic breaks evenly spaced between advertising segments. *Id.* (reproducing Ex. 1001, Fig. 1 (AAPA) (showing advertising breaks 31, 33 between programming segments 30, 32, 34).

Petitioner contends that Patten’s hard disk 113 and storage area for storing television programme data corresponds to similar structure in the ’302 patent and is consistent with the proposed construction of “programme supply means” from the district court. *See* Pet. 27–28; *supra* Section III.C. In addition, as summarized above, Petitioner shows that a typical broadcaster supplies television broadcasting, which appears consistent with the structure disclosed in the ’302 patent as the “programme supply means.” *See* Pet. 27–28; *supra* Section III.C.

On this preliminary record, we determine that Petitioner’s showing for limitation 1.b is sufficient for institution purposes. Patent Owner does not contest Petitioner’s showing with respect to this limitation. *See* generally Prelim. Resp.

c) Limitation 1.c

Limitation 1.c recites “advertisement supply means to supply advertisements within the periodic breaks.” As noted for limitation 1.b above, Petitioner generally points to a broadcaster and/or hard disc as supplying programming, which includes advertising that Patten’s system stores or records in various databases. *See* Pet. 27–31. Petitioner also contends that Patten discloses hard disk 113 with “two or more storage areas,” and one is for “storing metadata and/or recorded media items.” *Id.* at 30 (quoting Ex. 1004 ¶ 188, citing Ex. 1004 ¶ 50 (“The media items may be stored in a partition of a local hard disc[.]”), ¶ 135).

Referring to its showing for the preamble, Petitioner contends that Patten's media items are advertisements. *Id.* at 31 (citing Ex. 1004 ¶¶ 11, 18, 40).

Each substitutional advertising campaign may comprise one or more media items For example, an advertising campaign for a range of cars may comprise a set of media items . . . designed to appeal to a segment of the market defined by the associated segment data and/or rule.

Petitioner also explains that the stored advertisements “may be output during the break” of the video programs. *Id.* (quoting Ex. 1004 ¶ 18).

Patent Owner agrees that Patten “generally disclose[s] an advertisement supply means.” Prelim. Resp. 5–6.

On this preliminary record, we determine that Petitioner's showing for limitation 1.c is sufficient for institution purposes. Patent Owner does not contest Petitioner's showing with respect to this limitation. *See generally* Prelim. Resp.

d) Limitation 1.d

Limitation 1.d recites “each advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown.”

Petitioner contends that “Patten teaches this limitation through Patten's watershed restriction codes embedded as part of the header of the advertisement file.” Pet. 32 (citing Ex. 1003 ¶ 61). Petitioner maintains that Patten's advertisements include “‘restriction codes’ that prevent an advertisement from playing at certain times based on the watershed restriction.” *Id.* (citing Ex. 1004 ¶¶ 40, 62). Petitioner explains that “[t]hese

restriction codes ‘restrict the scheduling of the media item’ and include the ‘watershed after which the media item may be shown.’” *Id.* (quoting Ex. 1004 ¶ 60; citing Ex. 1004 ¶ 69; Ex. 1003 ¶ 61).

Petitioner explains that “Patten’s ‘restriction codes’ are ‘attributes’ or ‘metadata’ of individual advertisements.” Pet. 32 (quoting (Ex. 1004 ¶ 60; citing Ex. 1004 ¶ 62)). As discussed above in connection with limitation 1.c, Patten discloses “storing metadata and/or recorded media items” as part of the stored video files. *Id.* at 30 (emphasis omitted) (quoting Ex. 1004 ¶ 188). Based on the above teachings, Petitioner maintains that a person of ordinary skill in the art “would have known that Patten’s metadata is part of a header of an advertisement video file, and therefore would have found Patten teaches or renders obvious the claimed ‘header’ associated with each advertisement.” *Id.* (citing Ex. 1003 ¶ 62). To support this showing, Petitioner cites to Dunbar, as “reflect[ing] the knowledge of a [person of ordinary skill in the art] by discussing a video file header that includes metadata: ‘this embodiment includes a metadata portion 400 in header portion 302.’” *Id.* (quoting Ex. 1008, 6:1–5; citing Ex. 1008, Fig. 4 (showing header portion 302 having metadata portion 400)). Petitioner contends that Dunbar shows that a person of ordinary skill in the art knew that metadata, such “as metadata portion 400, holds information related to ‘the image (or audio or video clip)’ including ‘information that may be desirable depending on the application.’” *Id.* (emphasis omitted) (quoting Ex. 1004, 6:36–44). Petitioner cites to two other references to show that a person of ordinary skill in the art knew that video files include “metadata located in the header of a file.” *Id.* at 33 (citing quoting Ex. 1009, 17:19–21; citing Ex. 1010 ¶¶ 2, 17 (“[H]eader data represents metadata that may be incorporated into headers.”)).

Petitioner alternatively contends that even if Patten does not teach or suggest the claimed header, “Ben-Rubi discloses that its controller ‘reads one or more selection rules from . . . *advertisement headers* or metadata to determine how to match an advertisement with a content file,’ teaching advertisements with associated headers.” Pet. 35 (emphasis and alteration in original by Petitioner) (quoting Ex. 1006, 15:3–5) (citing Ex. 1003 ¶ 69; Ex. 1006, 15:7–9, 15:23–25, 17:28–29).

Petitioner also contends that Ben-Rubi’s advertisement “headers contain ‘selection rules.’” Pet. 36 (quoting Ex. 1006, 15:3–5; citing Ex. 1006, 17:28–29). And Ben-Rubi’s system uses the “‘selection rules’ to match an appropriate advertisement for insertion into the video content.” *Id.* (quoting Ex. 1006, 15:3–5). Therefore, Petitioner asserts that Ben-Rubi’s header would have been “the logical place to store Patten’s ‘restriction codes,’ which are also selection rules that exclude certain advertisements from being displayed during certain times.” *Id.* (citing Ex. 1003 ¶ 70). Petitioner contends the modification would have had a reasonable expectation of success because it uses conventional programming techniques that were well within the skill of a person of ordinary skill in the art. *Id.* (citing Ex. 1003 ¶¶ 67, 70).

According to Petitioner, it would have been obvious

to implement the metadata as the header of a video file as opposed to a different part of the file (e.g., the tail end of the file), because doing so ‘allows an end user of [video] file container 106 to access the metadata without having to process data portion 304.

Pet. 34 (quoting Ex. 1008, 6:9–11). Petitioner also contends that a person of ordinary skill in the art “would have known that this configuration has a smaller processing burden on the PVR, because video payload size is large

compared to the size of metadata and parsing megabytes of data takes substantial time and processing power, especially considering the limited capabilities of set-top boxes around 2010.” *Id.* at 34–35 (citing Ex. 1003 ¶ 67). Petitioner submits that a person of ordinary skill in the art “would have had a reasonable expectation of success in making this modification because storing and organizing data is a routine task well within the skill of” such a person. *Id.* (citing Ex. 1003 ¶ 68).

Based on the foregoing, Petitioner submits that it would have been obvious to employ advertisements having “a header comprising a first field” relating to the watershed restriction. Pet. 36 (citing Ex. 1003 ¶¶ 67, 70).

Patent Owner responds as follows:

Patten fails to disclose at least “advertisement supply means to supply advertisements within the periodic breaks, each advertisement having associated therewith a header comprising a first field related to a local broadcasting time regulation laid down by the broadcasting authority, which local broadcasting time regulation restricts the time of day at which said advertisement may be shown, and a second field related to the number of times said advertisement has previously been shown during time-shifted viewing,” as recited in issued claim 1, whether Patten is considered individually or in any combination with Ben-Rubi and/or Plotnick.

Prelim. Resp. 5. This line of argument generally denies Petitioner’s showing without specificity. It does not address Petitioner’s specific showing and explain what portion of the limitations Patten fails to disclose and also fails to explain why the combined teachings of Patten and Ben-Rubi do not render obvious, the recited limitations, which the preliminary record supports. As noted above, Patent Owner agrees that Patten discloses an advertisement supply means, yet the recitation above generally denies it.

See id. at 6. Patent Owner also concedes that Patten’s “advertisements may be associated with attributes such as a restriction code that may indicate time restrictions for certain types of advertisements.” *Id.* (citing Ex. 1004 ¶ 59). Although it is not clear on this preliminary record if Patten discloses headers, Patent Owner’s generic arguments do not undermine the Petitioner’s showing with respect to the combined teachings of the references and knowledge of an artisan of ordinary skill (wherein we address Petitioner’s showing related to headers further in the next subsection).

Patent Owner also argues that “[w]hile Ben-Rubi teaches the use of headers of advertisement files to insert targeted advertisements, Ben-Rubi fails to disclose the use of headers that contain the information recited in claim 1 of the ‘302 patent.” Prelim. Resp. 6. As an “example,” Patent Owner contends that “it is not seen where Ben-Rubi discloses the use of headers that indicate time restrictions for advertisements.” *Id.*

Similar to the first line of argument, this line of argument fails to address the combined teachings of Patten and Ben-Rubi, and the knowledge of an artisan of ordinary skill, as relied upon in the Petition.

Based on the foregoing discussion, on this preliminary record, Petitioner’s showing as to limitation 1.d is sufficient for institution purposes.

e) Limitation 1.e

Limitation 1.e recites “a second field related to the number of times said advertisement has previously been shown during time-shifted viewing.” Petitioner contends that “Patten’s receiver ‘update[s] a counter associated with respective individual media items, when that media item is output.”” Pet. 36 (quoting Ex. 1004 ¶ 57; citing Ex. 1004 ¶ 36 (“[T]he PVR may record viewing data 7 indicating the broadcast programmes and/or media items output for display by the receiver 1, for reporting purposes.”)).

Referring to its above-discussed showing, Petitioner contends that “Patten contemplates substitutional advertisements inserted during playback of recorded content (i.e., time-shifted viewing).” *Id.* at 36–37 (citing Ex. 1004 ¶¶ 141, 145). In other words, Petitioner contends that Patten tracks the number of times the advertisement has been shown during playback “because it is ‘important to determine . . . how many times the campaign has actually been displayed.’” *Id.* at 37 (quoting Ex. 1004 ¶ 148).

Petitioner also contends that

because Patten teaches that each advertisement has associated “attributes and metadata,” a [person of ordinary skill in the art] would have understood those attributes and metadata, which are located in a header as discussed regarding element [1d], include a second field related to the number of times an advertisement has been shown during time-shifted viewing.

Pet. 37 (quoting Ex. 1004 ¶ 60; citing Ex. 1003 ¶ 71). Similar to its showing with respect to limitation 1.d, Petitioner cites prior art to show that an artisan of ordinary skill in the art knew “that users often define their own metadata, as illustrated by Dunbar which explains that ‘metadata portion 400 is extensible’ and that ‘applications and/or users can define their own metadata.’” Pet. 37 (quoting Ex. 1008, 6:36–44). The cited passage of Dunbar refers to metadata portion 400 (illustrated in a header at Figure 4), and in the previous paragraph describing the extensible metadata portion 400, Dunbar indicates that the header includes a field for each type of metadata: “In one embodiment, metadata portion 400 allows for one or more portions to be defined, with individual metadata items in each namespace including *a self-describing name field and an associated value field.*” Ex. 1008, 6:15–18 (emphasis added).

As part of its showing of obviousness, Petitioner appears to contend that different types of metadata implicitly correspond to, or at least suggest, different data fields for each of the different types of metadata, as part of known data storage, packet, or packet header structure. *See, e.g.*, Pet. 20 (citing Ex. 1003 ¶ 38, Ex. 1004 ¶ 60; Ex. 1006, 15:3–5, 15:7–9, 15:23–25, 17:28–29). Tracking Dunbar, standard trade dictionaries also indicate on this preliminary record that packets normally contain different data fields. *See* Ex. 3003 (noting that for a “packet format,” “[t]he size and content of the various fields in a packet are defined by a set of rules that are used to assemble the packet”); Ex. 3004 (IEEE Dictionary (7th ed. 2000) defining “packet” as “(10) [a] structured field, having a start byte, a two-byte length field (the first two bytes), a flag byte, a command byte, followed by the subcommand and/or data fields”).

Petitioner alternatively contends that even if Patten does not disclose the second header field, it would have been obvious to implement a second field within the header of Patten/Ben-Rubi/AAPA, where Patten’s attributes and metadata provide various information about the associated time-shifted associated advertisement. Pet. 37. Petitioner contends it would have been obvious to implement a header with fields to provide Patten’s metadata information, which includes the number of times the system played the advertisement. *See id.* at 36–37. As indicated above in connection with limitation 1.d, Petitioner contends that it would have been obvious to implement a header field scheme in Patten’s advertisement selection technique with a reasonable expectation of success based on routine computer programming in order “to reduce processing burden on the limited capabilities of set-top boxes around the 2010 timeframe as discussed below

regarding element” where this was a “logical and efficient way of organizing information.” *Id.* at 21 (citing Ex 1003 ¶ 41).

Petitioner alternatively contends that it would be obvious to implement a second data field in a header in view of Ben-Rubi’s use of the advertisement playback count in its selection process. Pet. 39. Petitioner contends that “Ben-Rubi teaches counting the number of advertisement playbacks because it seeks to keep the inserted advertisement ‘appear[] “fresh” or “live” as opposed to fixed or repetitive’ by accounting for the ‘number of times each of the plurality of’ advertisements are ‘used to augment user content’ and the ‘frequency of insertion of one or more particular advertisements.’” *Id.* (quoting Ex. 1006, 8:3–15). Referring to its showing with respect to limitation 1.d, Petitioner contends that “Ben-Rubi uses ‘selection rules’ stored in headers for selecting advertisements.” *Id.* (quoting Ex. 1006, 15:3–5; citing Ex. 1003 ¶ 75). Based on these teachings, Petitioner contends it would have been “obvious to store the number of advertisement playbacks in a header field for each of Patten’s advertisements during time-shifted viewing” (*id.*), in order to reduce the process burden and efficiently access and organize the data (*id.* at 21).

Patent Owner contends that “Patten fails to disclose a second field related to the number of times that an advertisement was previously shown during time-shifted viewing.” Prelim. Resp. 6. Patent Owner also contends that “[w]hile Ben-Rubi teaches the use of headers of advertisement files to insert targeted advertisements, Ben-Rubi fails to disclose the use of headers that contain the information recited in claim 1 of the ‘302 patent.” *Id.*

Even if Patent Owner is correct, the arguments isolate the individual teachings of the references and fail to undermine the Petition’s reliance on the knowledge of an artisan of ordinary skill and the combined teachings of

the references as outlined above. In summary, on this preliminary record, Petitioner sufficiently shows that Patten employs metadata for storing various attributes or rules for advertisements, Ben-Rubi teaches headers for advertisements, Patten and Ben-Rubi track the number of times an advertisement was shown, and headers with different data fields for storing metadata were well-known as efficient mechanisms for reducing processing time and organizing data.

On this preliminary record, Petitioner at least shows that using the well-known advertising metadata header data scheme of Ben-Rubi and including multiple data fields in Patten's similar system of storing different types of advertising metadata was a "suitable option" for storing and organizing data for video streams, and in addition, would have provided known benefits. *See Intel Corporation v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1381 (Fed. Cir. March 13, 2023) (reversing the Board because "contrary to the Board's suggestion, Intel never had to show that replacing Kabemoto's secondary cache with Bauman's secondary cache was an 'improvement' in a categorical sense," rather, "Intel just had to show that Bauman's secondary cache was a 'suitable option' to replace Kabemoto's secondary cache." (quoting *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 800 (Fed. Cir. 2021))).

Based on the foregoing discussion, on this preliminary record, Petitioner's showing as to limitation 1.e is sufficient.

f) Limitations 1.f; 1.g; 1.h

Petitioner also articulates a sufficient showing of a rationale, supported by evidence of record, for combining the prior art disclosures with a reasonable expectation of success with respect to limitations 1.f ("rules database means containing rules relating to said local broadcasting time

regulation;”), 1.g (“clock means to supply a real-time clock signal”), and 1.h (“control means arranged to read said first field and said clock signal and said rules database and to apply said local broadcasting time regulation to each advertisement before said advertisement is shown”). *See* Pet. 39–44.

By way of brief summary, for limitation 1.f, under one alternative, Petitioner reads the database means structure onto Patten’s hard disk 113 with storage area for storing the metadata and programming schedule, including watershed restriction codes. *See* Pet. 39–40 (citing Ex. 1004 ¶¶ 59, 90, 185; Ex. 1003 ¶¶ 77–78.)

For limitation 1.g, under one alternative, Petitioner reads the clock means onto the AAPA’s clock, arguing that it would have been obvious to employ that clock means with Patten’s advertising system “to supply a real-time clock signal to ensure accurate application of [Patten’s] watershed restrictions during time-shifted viewing.” *See* Pet. 42 (“The ’302 patent specification states that ‘[i]t is **well known** that a digital television signal and a **backchannel** each **contain highly accurate time information** which can be used by equipment in a PVR 10.’” (emphasis by Patent Owner) (quoting Ex. 1001, 2:26–30)).

For limitation 1.h, Petitioner reads the control means onto Patten’s processor 123. Petitioner contends that “Patten explains [that] ‘receiver 1 is controlled by a processor 123,’ and thus, acts as the control means for Patten’s PVR receiver.” Pet. 43 (quoting Ex. 1004 ¶ 182). Petitioner also contends that “Patten’s processor 123 corresponds to the ’302 patent’s hardware or combination of hardware and software of PVR 60 arranged to perform steps 102, 104, and 112 of FIG. 8, which performs the claimed ‘read[ing]’ and ‘apply[ing]’ functions.” *Id.* (citing Pet. 10–14 (generally adopting district court claim construction); Ex. 1003, ¶¶ 83–84).

Patent Owner does not address Petitioner's showing for these limitations. *See generally* Prelim. Resp.

g) Limitation 1.i

Limitation 1.i recites “wherein the control means is further arranged to update the second field in the header of said advertisement when said advertisement is again shown during time-shifted viewing.” Petitioner contends that Patten teaches that “[t]he receiver may update a counter associated with respective individual media items, when that media item is output.” Pet. 45 (quoting Ex. 1004 ¶ 57; citing Ex. 1004 ¶ 148). As discussed regarding element [1e], Petitioner contends that Patten's and Ben-Rubi's playback counter teachings disclose or render obvious the claimed second field. And “Patten's ‘receiver 1 is controlled by a processor 123.’” *Id.* (quoting Ex. 1004 ¶ 182). Based on these teachings, Petitioner contends that Patten's processor 123 (the recited “control means”), performs the claimed updating of the second field when the advertisement is again shown. *Id.* (citing Ex. 1003 ¶ 89).

Patent Owner does not address Petitioner's showing for this limitation. *See generally* Prelim. Resp.

After a review of the preliminary record as summarized above, we determine that Petitioner's showing for limitation 1.i is sufficient for institution purposes.

h) Summary of Claim 1

Based on the summary above and a review of the record, we determine that Petitioner sufficiently maps the limitations of claim 1 to the prior art and provides reasons sufficiently supported by factual underpinnings to combine the references' teachings with a reasonable expectation of success for purposes of institution. Accordingly, we

determine that Petitioner shows a reasonable likelihood that it would prevail with respect to its contention that claim 1 would have been obvious over Patten, Ben-Rubi, and AAPA.

4. Claims 2, 3, 6–9, 12, 13, and 15

Claims 2, 3, and 6–9 depend directly or indirectly from independent claim 1. Claims 13 and 5 depend directly or indirectly from independent claim 12, which is similar to claim 1. Petitioner contends that these claims would have been obvious under 35 U.S.C. § 103(a) based on the combined teachings of Patten, Ben-Rubi, and AAPA. Pet. 26–58. In support, Petitioner relies on the testimony of Mr. Hoarty and provides citations to the reference teachings. *Id.*

On this preliminary record, for purposes of institution, we determine that Petitioner sufficiently maps the limitations of claims 2, 3, 6–9, 12, 13 and 15 to the asserted prior art and provides reasons sufficiently supported by evidence of record to combine the reference teachings with a reasonable expectation of success. *See id.* Patent Owner generally relies on its arguments with respect to claim 1. *See* Prelim. Resp. 2, 5–8.

Accordingly, we determine that Petitioner shows a reasonable likelihood that it would prevail with respect to its contentions that claims 2, 3, 6–9, 12, 13, and 15 would have been obvious based on the combined teachings of Patten, Ben-Rubi, and AAPA.

E. Ground 2, Obviousness, Claims 3, 4, and 14

Petitioner argues that the combination of Patten, Ben-Rubi, AAPA, and Plotnick renders obvious claims 3, 4, and 14. Pet. 59–63.

1. Plotnick

Plotnick describes a system for delivering video or audio broadcast programming “via a program[] delivery network” that may be a “digital

broadcast satellite (DBS) system.” Ex. 1005 ¶ 92. Plotnick’s system includes a “client side STB ad targeting system 600,” which is a “software application that may be integrated into a PVR-enabled set-top box (STB PVR).” *Id.* ¶ 134. Through the ad targeting system, “ads may be inserted into the program material at indicated points of ‘avails’ (through cue messages).” *Id.* ¶ 150. The “STB differentiates individual viewing habits, characterizes the current viewer based on current and historical viewing information, and selects advertising appropriate for the current view based on the characterization.” *Id.* ¶ 154. To provide appropriate advertisements, the STB PVR receives “control data 1006,” which is metadata that “includes descriptions of the ad content, target audience, encoding attributes, delivery instructions, and contract limitations.” *Id.* ¶ 154.

Plotnick’s system then processes “[t]he control data 1006 ... to generate ad queue structures,” which is “a list of the next ads [] that should be inserted.” Ex. 1005 ¶¶ 155, 194. The ad queue and schedule may be based on advertiser-specified campaign data, including “flight information, which indicates the networks and times for displaying the advertisement.” *Id.* ¶ 169. The ad queue “may vary based on . . . time of day” “day of the week,” and “other criteria.” *Id.* ¶ 194. Processing rules 1440 allow for further control or replacement of ads in the ad queue. *Id.* ¶ 201.

After an ad plays, “processing component [1010] updates the ad metadata 1006 based on ad delivery and user interaction.” Ex. 1005 ¶ 156. The STB generates “ad play reports 1160” for a traffic and billing system to bill the advertiser based on requirements satisfied during the campaign. *Id.* ¶ 169.

2. Claims 3, 4, 14

Petitioner argues that the combination of Patten, Ben-Rubi, AAPA, and Plotnick renders obvious claims 3, 4, and 14. Pet. 59–63. For support, Petitioner relies on the testimony of Mr. Hoarty and provides citations to the reference teachings. *Id.*

On this preliminary record, for purposes of institution, we determine that Petitioner sufficiently maps the limitations of claims 2, 3, 6–9, 12, 13 and 15 to the asserted prior art and provides reasons sufficiently supported by factual underpinnings to combine the reference teachings with a reasonable expectation of success. *See id.*

Patent Owner generally relies on its arguments with respect to claim 1. *See* Prelim. Resp. 2, 5–8. For example, Patent Owner contends that Plotnick “fails to disclose” certain limitations of claim 1. Prelim. Resp. 7. As set forth above, Petitioner does not rely on Plotnick to address claim 1.

Accordingly, we determine that Petitioner shows a reasonable likelihood that it would prevail with respect to its contentions that claims 3, 4, and 14 would have been obvious based on the combined teachings of Patten, Ben-Rubi, AAPA, and Plotnick.

IV. CONCLUSION

After considering the evidence and arguments of record, we determine that Petitioner has demonstrated a reasonable likelihood of success with respect to at least one of the challenged claims. Accordingly, an *inter partes* review of all of the claims is hereby instituted on the ground presented in the Petition. *See* 37 C.F.R. § 42.108(a).

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claims or any

underlying factual or legal issues. The final determination will be based on the record as developed during the *inter partes* review.

V. ORDER

In consideration of the foregoing, it is hereby

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of the challenged claims of the '302 patent is instituted with respect to the grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '302 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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