

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

SAFECAST LIMITED LLC,
Patent Owner.

IPR2023-00652
Patent 9,392,302 B2

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

EASTHOM, *Administrative Patent Judge*.

DECISION
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 314

I. INTRODUCTION

Google LLC, Petitioner, filed a Petition (Paper 1, “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. 1. SafeCast Limited LLC, Patent Owner, filed a Preliminary Response (Paper 6, “Prelim. Resp.”).

After the Institution Decision (Paper 7, “Inst. Dec.”), Patent Owner filed a Response (Paper 9, “PO Resp.”), Petitioner filed a Reply (Paper 10, “Reply”), and Patent Owner filed a Sur-reply (Paper 11). After the briefing, the Board conducted an Oral Hearing and entered a Transcript thereof in the record. Paper 15 (“Tr.”).¹

For the reasons set forth in this Final Written Decision pursuant to 35 U.S.C. § 318(a), we determine that Petitioner demonstrates by a preponderance of evidence that challenged claims 1–4, 6–9, and 12–15 of the ’302 patent are unpatentable.

II. BACKGROUND

A. *Real Parties in Interest*

The parties identify themselves as real parties in interest. Pet. 2; Paper 4, 2.

B. *Related Matters*

The parties identify 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

¹ Patent Owner appeared at the Oral Hearing but elected not to present arguments there. Tr. 4:16–18.

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(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. Microsoft Corp.*, No. 6-22-cv-00983 (W.D. Tex. Sept. 19, 2022). Pet. 2; Paper 4, 2–3.

Another related matter is *Dish Network LLC and Dish Techs. LLC v. SafeCast Ltd.*, IPR2023-01116, Paper 9 (PTAB June 26, 2024) (instituting on claims 1–3, 6–9, 12–15, final decision pending).

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.

The diagram illustrates a PVR system (20) with the following components and connections:

- Aerial**: Connected to the PVR system (20) via a cable.
- Internet (24)**: Connected to the PVR system (20) via a cable.
- Modem (22)**: Connected to the PVR system (20) via a cable.
- Hard disc (62)**: A storage component within the PVR system (20).
- TV set (68)**: Connected to the PVR system (20) via a cable.
- Remote control (66)**: Labeled with 67R and 67G, it is connected to the PVR system (20) via an infrared beam (dashed line).

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,” or a keyword or other indicator. *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.*, 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):

1.[a] A system for automating compliance with local broad casting 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,

[c.1] 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

[c.2] a second field related to the number of times said advertisement has previously been shown during time-shifted viewing;

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

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

[e.1] 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;

[f] 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:²

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–4, 6–9, 12–15	103(a)	Plotnick, ³ Parekh, ⁴
1–4, 6–9, 12–15	103(a)	Plotnick

Pet. 4. Petitioner supports its Petition with a Declaration of Dr. Henry H. Houh. Ex. 1002.

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.”

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

² 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 effective filing date, Nov. 18, 2011. *See* Ex. 1001, code (22). Therefore, the pre-AIA version of § 103 applies for purposes of institution.

³ US Patent Pub. No. 2002/0144262 A1, published Oct. 3, 2002. Ex. 1005.

⁴ US Patent No. 8,413,189 B1, issued Apr. 2, 2013, filed Dec. 22, 2008. Ex. 1007.

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 an artisan of “ordinary skill in the art would have had at least a bachelor’s degree in computer science, electrical or computer engineering, or equivalent education or work experience, and at least two years of work or research experience in multimedia systems.” Pet. 8–9 (citing Ex. 1002 ¶¶ 41–45). In the Preliminary Response, Patent Owner “adopt[s] Petitioner’s proffered level of ordinary skill in the art because it comports with the technology and claims of the ’302 Patent as well as the asserted prior art.” Prelim. Resp. 8. Patent Owner does not address Petitioner’s proposed level of skill in the Response. *See* Reply 1; *see generally* Response.

Based on a review of the record, we adopt Petitioner’s proposed level of ordinary skill in the art. As Patent Owner argues, Petitioner’s proposed

level 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*. Pet. 10–20. Petitioner contends that several terms that include the word “means” “create[a] rebuttable presumption that they are means-plus-function elements under 35 U.S.C. § 112 ¶ 6.” *Id.* at 10 (citing *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015)). Petitioner also contends that

[f]or each means-plus-function term below, Petitioner has identified *the closest disclosed structure* in the '302 Patent that relates to the recited function, but by doing so, Petitioner does not intend to, and does not, waive any argument that the structure for performing the claimed function of each term is not sufficiently disclosed in the '302 Patent.

Id. at 10 n.2 (emphasis added). However, the “closest structure” is not necessarily “structure disclosed in the specification [a]s ‘corresponding’ structure,” because such structure is corresponding “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 contends that “programme supply means” recites the function of “to supply broadcast digital video/audio programmes.” *See* Pet. 11. Petitioner lists the corresponding structure as “hard disc 62 in PVR 60, containing 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 function of “to supply broadcast digital video/audio 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 claim construction points to portions of the PVR as part of the supply, the Petition also indicates in its ground of obviousness that Plotnick’s broadcaster is the supply of Plotnick’s program and advertisements, and that the broadcaster reads on the claimed programme supply means, as discussed further below. *See* Pet. 37 (“Plotnick receives and delivers video or audio ‘broadcast’ programming ‘via a program delivery network,’ and those programs can be stored on and ‘played from the set-top box’s hard disk.’”).

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. 16–17. Tracking the claim language in limitations 1.e.1 and 1.f, Petitioner identifies the recited function of the “control means” as follows: (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.” *Id.* at 16.

However, steps 102, 104, and 112 of Figure 8 represent structure do not clearly link to recited functions (1)–(3) 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 is unclear how much of any such structure clearly links to the recited functions of claim 1—as opposed to the unclaimed functionality described in Figure 8.

As we did in the Institution Decision, we construe the corresponding structure of the control means 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.

See Inst. Dec. 12. It is uncertain whether 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 (pointing to the disclosed PVR as performing disclosed steps 102, 104, 112); Ex. 1001, 4:43 (describing “a PVR 60 for use in a system according to the invention” according to Figure 4 (described above)).

However, Patent Owner does not disagree with Petitioner’s claim constructions with respect to the means plus function limitations. *See* PO Resp. 3–4 (summarizing Petitioner’s showing without disputing it); Reply 1 (noting that “Patent Owner does not dispute Petitioner’s proposed constructions”). To the extent that there is a lack of disclosed algorithm

structure clearly linked to the recited functions, we are able to reach a 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.”).

Accordingly, 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))). Nevertheless, we address a claim construction issue raised by Patent Owner in its Sur-reply involving the “first field” in connection with limitation 1.c.1 in our substantive analysis of the Ground 1.

D. Ground 1, Obviousness, Claims 1–4, 6–9, and 12–15

Petitioner asserts that claims 1–4, 6–9, and 12–15 would have been obvious under 35 U.S.C. § 103(a) based on the combined teachings of Plotnick and Parekh. Pet. 27–72.

1. Plotnick (Ex. 1005)

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

“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 “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. *Parekh (Ex. 1007)*

Parekh relates to a “method of determining advertising content to be included in a broadcast.” Ex. 1007, code 57). Parekh’s advertisements have “inclusion criterion used to determine both whether and how that item of advertising content is to be included in a broadcast.” *Id.* at 2:37–40. Parekh discloses “rules engine 308” to control “what tracks are played on air and in what order . . . with a combination of guidelines and rules, such as station policies and regulations from regulators 110.” *Id.* at 11:15–20, Fig. 1. These rules “may be static which apply at all times or dynamic which apply only under certain conditions, such as time of day or size of online audience.” *Id.* at 11:26–28. Examples are “business rules,” such as “FCC regulations for content, including: that indecent and/or profane material may not be broadcast outside the FCC Safe Harbor; [and] three songs from the same recording, or four songs from the same artist or anthology, may not be played within a three-hour period.” *Id.* at 11:29–37.

3. *Claim 1*

a) *Preamble*

The preamble of claim 1 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 relies on the combined teachings of Plotnick and Parekh to address the preamble “to the extent it is limiting.” Pet. 31–36.

Petitioner relies on Plotnick’s “‘ad targeting system 600,’ which is a ‘software application that may be integrated into a PVR-enabled set-top box (STB PVR).’” Pet. 31 (quoting Ex. 1005 ¶ 134).

Petitioner explains that Plotnick teaches “time-shifted viewing” as evidenced by its disclosure of allowing viewing during typical time-shifting functions such as “fast-forward, commercial skip, and rewind” that “trigger[s] the alternative advertisement.” *Id.* at 32 (quoting Ex. 1005 ¶ 62; citing Ex. 1002 ¶ 104).

Petitioner also quotes Plotnick as disclosing that its PVR “differentiates individual viewing habits, characterizes the current viewer based on current and historical viewing information, and selects advertising appropriate for the current viewer based on the characterization.” Pet. 32–33 (quoting Ex. 1005 ¶ 154). Petitioner explains that Plotnick’s advertisements contain “control data 1006,” which is metadata that “includes descriptions of the ad content, target audience, encoding attributes, delivery instructions, and contract limitations.” *Id.* at 33 (quoting Ex. 1005 ¶ 154 (“Control data related to ads (ad metadata) 1006 . . . includes descriptions of the ad content, target audience, encoding attributes, delivery instructions, and contract limitations.”)). Petitioner also explains that “Plotnick discloses that there are ‘requirements for . . . frequency of viewership by the target audience, and flight information, which indicates the networks and *times for displaying the advertisement.*’” *Id.* (quoting Ex. 1005 ¶ 169). In addition, Petitioner explains that Plotnick’s system selects advertisements “based on ‘*what time of day it is*, what day of the week, . . . and other criteria that would be well within the scope of the current invention.” *Id.* (quoting Ex. 1005 ¶ 194).

Petitioner explains that using metadata to select ads based on the “time of day” or “day of the week” implicitly relates to “broadcasting time regulations set by a local broadcasting authority.”

Pet. 33 (citing Ex. 1002 ¶ 106). Petitioner further explains that “Plotnick’s system automates compliance with such regulations because the PVR processes metadata and filters to select appropriate advertisements without user action.” *Id.* (citing Ex. 1002 ¶ 106).

Patent Owner does not address the preamble specifically. However Patent Owner contends that Plotnick does not disclose “broadcasting time regulations set by a local broadcasting authority” in addressing Petitioner’s showing with respect to related limitation 1.c.1, which similarly recites “a first field related to a local broadcasting time regulation laid down by the broadcasting authority.” PO Resp. 9. According to Patent Owner, Plotnick’s “sales force” enters “the restrictions,” not “the local broadcasting authority.” *Id.* (quoting Ex. 1005 ¶ 169).

Nevertheless, as we preliminarily determined in the Institution Decision, claim 1 is a system claim. The preamble’s recitation of “[a] system *for automating compliance* with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements” is a statement of intended use of the system, which lacks patentable weight. *See* Inst. Dec. 17–18 (citing *In re Sinex*, 309 F.2d 488, 492, (CCPA 1962) (statement of intended use in an apparatus claim fails to distinguish over the prior art apparatus)).

Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function, unless the function recited somehow requires a different structure. *See In re Schrieber*, 128 F.3d 1473, 1475, 1477, 1479 (Fed. Cir. 1997) (holding that “[a] dispensing top for passing only several kernels of a popped popcorn [with] . . . the opening at the reduced end allow[ing] several kernels of

popped popcorn to pass through at the same time” reads on “the structure disclosed in Harz [which] is not limited to use as an oil can dispenser” even though “Harz does not address the use of the disclosed structure to dispense popcorn”); *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469 (Fed. Cir. 1990) (“[A]pparatus claims cover what a device *is*, not what a device *does*.”). Moreover, the preamble does not require any entry of local broadcasting regulations, it only requires “for automating compliance,” with same. Plotnick’s time restrictions restrict ads in the same manner regardless whether the time regulations relate to local broadcasting regulations.

In any event, to the extent the preamble (or similarly, limitation 1.c.1) requires “compliance with local broadcasting regulations laid down by a broadcasting authority and applicable to advertisements” such that this functionality somehow alters the structure of system claim 1, Petitioner relies on the combined teachings of Plotnick and Parekh. Pet. 27–31. For example, Petitioner argues that a person of ordinary skill in the art “would have been motivated to combine the teachings of Plotnick and Parekh because Plotnick teaches managing and replacing advertisements that are shown in a PVR-recorded program, including based on time of day at playback, and Parekh teaches that time of day considerations should include FCC broadcasting time regulations.” *Id.* at 30 (citing Ex. 1002 ¶ 100; Ex. 1005 ¶ 194; Ex. 1007, 4:7–15, 11:29–42). Petitioner also notes that FCC fines for obscenity and profanity during broadcasts were frequently in the news at the time of the invention. *See id.* at 29–30 (Ex. 1002 ¶¶ 100, 110). At cited paragraph 100, Dr. Houh testifies

that a person of ordinary skill in the art “would have known the problems related to playing PVR-recorded programs at a later time, including the fact that advertisements may be inappropriate for the time of a day at playback.” Ex. 1002 ¶ 100.

As noted above, Petitioner reasons that “Plotnick teaches that its system is adjustable and may vary ‘based on . . . what time of day it is, what day of the week, . . . *and other criteria that would be well within the scope of the current invention.*’” Pet. 30 (quoting Ex. 1005 ¶ 194; citing *id.* ¶¶ 60, 64–65; Ex. 1002 ¶¶ 101, 111). Petitioner further reasons that replacing ads based on time of day and “other criteria” known at the time suggests legal criteria related to the time of day, where both references relate to providing “appropriate advertisements.” *See id.* (citing Ex. 1005 ¶ 194).

Petitioner also argues that it would have been obvious to combine the teachings of Plotnick and Parekh in order to “suppl[y] appropriate, targeted advertisements to users that also compl[y] with applicable laws” and “to ensure that applicable broadcasting rules are followed and to report played advertisement data for data collection and payment.” Pet. 31 (citing Ex. 1002 ¶¶ 100, 109; Ex. 1007, 5:12–17, 7:7–18, 9:20–22, 9:25, 9:56–61, 11:29–53, 17:36–46).

Based on the record and summary above, Petitioner shows that one of ordinary skill would have understood that FCC regulations serve as a guide to ads that are appropriate based at least on time so that implementing the combination fosters and improves Plotnick’s goal of providing appropriate and targeted ads based on time or other criteria, while also complying with applicable laws. *See* Pet. 29–30

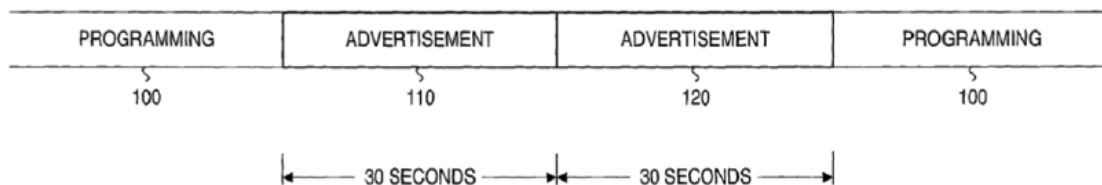
(citing Ex. 1002 ¶¶ 100, 110; Ex. 1005 ¶ 194; Ex. 1007, 4:7–15, 11:29–42).

Accordingly, as summarized above, we determine that Petitioner’s showing for the preamble (even if it is limiting) based on Plotnick or the combined teachings of Plotnick and Parekh is persuasive. We address Patent Owner’s other arguments with respect to limitation 1.c.1 below. The arguments do not undermine the Petition’s showing as to the preamble.

b) Limitations 1.b and 1.c

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, *inter alia*, that Plotnick receives and delivers video and audio “broadcast” programming “via a program delivery network,” and those programs can be stored on and “played from the set-top box’s hard disk.” Pet. 37 (quoting Ex. 1005 ¶ 91; citing Ex. 1005 ¶¶ 90, 150). Petitioner also explains that “[i]n Plotnick, an ‘ad insertion module’ ‘handles the processes necessary to incorporate targeted ads into television programs, including programs received in real-time or being played from the set-top box’s hard disk.’” *Id.* at 38 (quoting Ex. 1005 ¶ 150).

To support its showing, Petitioner produces Plotnick’s Figure 1 as follows:



As Petitioner explains, Figure 1 above “illustrates Plotnick’s

programming with periodic advertisement breaks.” Pet. 38 (citing Ex. 1005, ¶¶ 91, 150, 194).

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 as supplying programming, which Plotnick’s PVR stores in various databases. *See* Pet. 20 (citing Plotnick’s program delivery network), 36–38 (similar). Petitioner also relies on Plotnick’s Ad Database as depicted in Plotnick’s Figure 10, which shows communication via Downstream Ad Feed 1000. *See id.* at 40. The background and abstract of Plotnick shows that a commercial broadcaster supplies the advertisements with the programs as illustrated with respect to Figure 1 (i.e., in the normal fashion), which the PVR stores in a database, as Petitioner explains. *See* Ex. 1005, code (57), Fig. 1, ¶¶ 55–58, 90–94; Pet. 21–23 (describing Plotnick’s system), 36–41 (addressing limitations 1.b and 1.c). In its Preliminary Response, Patent Owner agrees that Plotnick discloses that a broadcaster delivers the ads: “Plotnick disclose[s] ‘updat[ing] the ad metadata 1006 based on ad delivery and user interaction,’” and “‘ad delivery’ means the ad is delivered from [an] advertiser to PVC system.” Prelim. Resp. 26.

Based on the foregoing discussion and the record, we determine that Petitioner’s showing for limitations 1.b and 1.c is persuasive. Patent Owner does not specifically contest Petitioner’s showing with respect to these limitations. *See* PO Resp. 8–20.

c) *Limitation 1.c.1*

Limitation 1.c.1 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.” Similar to its showing with respect to the preamble, Petitioner contends that “Plotnick discloses that advertisements include ‘control data 1006,’ which is ‘ad metadata’ that ‘includes descriptions of the ad content, target audience, encoding attributes, delivery instructions, and contract limitations.’” Pet. 42 (citing Ex. 1005 ¶ 154). Petitioner also contends that “Plotnick discloses that ‘control data 1006’ is ‘processed [] to generate ad queue structures that are stored in an ad queue database 1018.’” *Id.* (citing Ex. 1005 ¶ 155). Petitioner relies on Plotnick’s teaching that “[t]he ad queue and schedule may be generated based on ‘flight information, which indicates the networks and times for displaying the advertisement.’” *Id.* (quoting Ex. 1005 ¶ 169). Petitioner also asserts that Plotnick’s “ad queue may further vary based on ‘what subscriber 1260 is interacting with the TV, *what time of day it is*, [or] what day of the week’ it is.” *Id.* at 42–43 (alteration in original) (quoting Ex. 1001 ¶ 194).

Petitioner also relies on a printed publication that Plotnick incorporates by reference and that provides more details about selecting ads. Pet. 43 (referring to U.S. Patent App. No. 09/742,852 (the “’852 Application,” Ex. 1006 ¶¶ 50–51); citing Ex. 1005 ¶¶ 2–14, 36, 194)). Petitioner asserts that “[t]he ’852 Application discloses that the subscriber’s system may use ‘time of day’ to prepare an ad queue, and the ad schedule may change, e.g., based on ‘time of day.’” Pet. 43 (citing Ex. 1006 ¶¶ 50–

51). Therefore, Petitioner asserts that “Plotnick thus discloses that ‘control data 1006,’ which is used to generate ad queues, has metadata relating to times for displaying the advertisement and that can be used to select ads based on ‘what time of day it is.’” *Id.* at 43 (citing Ex. 1005 ¶¶ 169, 194; Ex. 1002 ¶ 124).

Similar to its showing with respect to the preamble, Petitioner also explains that a person of ordinary skill in the art “would have known that broadcasting systems, like those disclosed by Plotnick, may be subject to FCC regulations, which prohibit certain types of content from being broadcast at certain times of day.” Pet. 45 (citing Ex. 1002 ¶¶ 98, 126–127). According further to Petitioner, “Plotnick thus suggests that the ‘control data 1006’ has a field relating to a local broadcasting time regulation laid down by a broadcasting authority.” *Id.* (citing Ex. 1002 ¶¶ 98, 126–127). Petitioner also relies on Parekh’s FCC teachings, contending that Parekh discloses “business rules” that apply at a certain “time of day,” including “FCC regulations for content, including: that indecent and/or profane material may not be broadcast outside the FCC Safe Harbor.” *Id.* at 45–46 (quoting Ex. 1007, 11:26–36).

Petitioner generally explains that Plotnick and Parekh pertain to similar systems for tracking the content of advertisements using metadata and controlling the ads based on similar criteria including time, regulations, and other criteria. *See id.* at 27–31 (citations omitted). According to Petitioner, it would have been obvious to combine the teachings of Plotnick and Parekh, where Parekh teaches “details regarding implementing ad targeting and reporting . . . to ensure that targeted ads were in compliance with applicable laws and regulations as taught in Parekh.” *Id.* (citing Ex. 1002 ¶¶ 102, 109).

Regarding the header limitation, Petitioner explains that a person of ordinary skill in the art “implementing the teachings of Plotnick would have been motivated to turn to related references for additional implementation details relating to advertisement metadata, headers, and rules.” Pet. 45 (citing Ex. 1002 ¶ 127). As to the broadcasting authority, Petitioner asserts that “Parekh discloses a ‘rules engine’ that controls ‘what [media items] are played on air’ by applying ‘a combination of guidelines and rules, such as station policies and regulations from regulators 110.’” *Id.* (citing Ex. 1007, 11:14–20). Petitioner also contends that “Parekh . . . teaches how to ensure that applicable broadcasting rules are followed and to report played advertisement data for data collection and payment.” *Id.* at 31 (citing Ex-1007, 7:7–18, 9:25, 11:29–53, 5:12–17, 9:20–22, 9:56–61, 17:36–46; Ex. 1002 ¶ 102).

Further regarding the header limitation, Petitioner asserts as follows:

Metadata relating to times for displaying the advertisement would have been stored in a first field of the “control data 1006” header because, as well known by a POSITA, the purpose of a header is to set out required metadata information associated with the underlying data in various fields, *so that the information can be retrieved in an organized and predictable way.*

Pet. 43 (emphasis added) (citing Ex. 1002 ¶ 124). At the cited paragraph, Dr. Houh supports the Petition, testifying as follows:

As described in Section VIII.A.1 above, a POSITA *would have found it obvious that metadata relating to times for displaying the advertisement would be stored in a field of the “control data 1006” header that is disclosed in Plotnick.* Moreover, metadata relating to times for displaying the advertisement would have been stored in a first field of the “control data 1006” header because, as well known by a POSITA, *the purpose of a header is to set out required metadata information associated with the*

underlying data in various fields, so that the information can be retrieved in an organized and predictable way.

Ex. 1002 ¶ 124 (emphases added). At cited Section III.A.1, Dr. Houh testifies that “[i]t would have been obvious . . . to store both the ad queue database in the same database system as the ad database, as doing so allows relating the metadata of the ad to the ad using foreign key relationships,” because this “allows for associating the metadata with the advertisement using the mechanisms of the database itself, and *allows the metadata header to be easily retrieved.*” *Id.* ¶ 97 (emphasis added).

Petitioner also argues that “Plotnick selects and replaces ads in broadcast programs based on the time of day and specified ad schedules,” “Parekh teaches a similar method for selecting advertisements based on time of day regulations,” and “both disclose using metadata associated with each advertisement to control when and how the advertisement is played.” Pet. 47 (citing Ex-1005 ¶ 194; Ex. 1002 ¶ 129). Based on the combined teachings, Petitioner asserts that “[a]pplying the teachings of Plotnick and Parekh regarding adding metadata and associated rules to control ad timing in accordance with FCC regulations would have led to the expected result that an advertisement would only be selected for playback when permitted by such rules.” *Id.* (citing Ex. 1002 ¶ 129). And as noted in connection with the preamble as discussed above, Petitioner similarly argues that it would have been obvious to the combine the teachings of Plotnick and Parekh in order to “suppl[y] appropriate, targeted advertisements to users that . . . compl[y] with applicable laws” and “to ensure that applicable broadcasting rules are followed and to report played advertisement data for data collection and payment.” *Id.* at 31 (citing Ex. 1002 ¶¶ 100, 109; Ex. 1007, 5:12–17, 7:7–18, 9:20–22, 9:25, 9:56–61, 11:29–53, 17:36–46). Petitioner implies

that complying with FCC regulations avoids fines. *See id.* at 29–30 (discussing “FCC fines . . . frequently in the news headlines” (citing Ex. 1002 ¶¶ 100, 110)).

Patent Owner contends that Plotnick does not teach the “header” of limitation 1.c.1. PO Resp. 10. According to Patent Owner, Petitioner “equates” Plotnick’s “header” to its “control data 1006,” but “the ‘control data 1006’ does not include ‘a local broadcasting time.’” *Id.* (citing Ex. 1005 ¶ 154). These arguments do not address Petitioner’s obviousness showing and attack the references separately.

To the extent Patent Owner raises a claim construction argument by asserting that Plotnick does not teach a first field with “a local broadcasting time,” “the time of day at which said advertisement may be shown,” or similar specific language, limitation 1.c.1 does not require such specificity. PO Resp. 10; Sur-reply 5–6, 18.⁵ Rather, limitation 1.c.1 recites “a header comprising a first field related to a local broadcasting time regulation,” as Petitioner argues. *See* Reply 5.

Like the claim language, the ’302 patent specification also does not support Patent Owner’s narrow claim construction requiring a specific form of a time of day restriction in the header’s first frame. The specification generally states that “[e]ach advert . . . contains a header . . . which records . . . *any* restriction on the time of day at which it may be viewed.” Ex. 1001, 3:67–4:24 (emphasis stated). It also generally states that “[t]he time of day

⁵ The Response at page 10 obliquely slips in what appears to be a claim construction argument in one sentence and the Sur-reply adds pages to expand the argument. *Compare* Response 10 (possible claim construction argument) *and* Reply 5–6 (refuting Patent Owner’s argument by relying on “the words of the claims), *with* Sur-reply 4–6 (expounding on the claim construction argument), 15–19 (similar).

information in the header may be set in accordance with local broadcasting regulations.” *Id.* at 3:14–15 (emphasis added). In any event, even if these embodiments specify a certain form for the time of day information or restriction (they do not), limitation 1.c.1 is broader than these embodiments because it does not require storing a specific form for a time of day restriction or information in the first header frame either directly or by implication.

The Sur-reply points to Table 1 of the ’302 specification, but Table 1 lists several items, including a “Field Name” that includes “Warnings,” namely, “Keywords to match against viewing regulations.” *See id.* at 4:1–22 (Table 1, “Fields in advertisement headers”); Sur-reply 5–6 (arguing without support that “claim 1 requires the ‘first field’ to have ‘a local broadcasting time’ of the advertisement which is regulated by the ‘local broadcasting time regulation’), 18 (arguing that (1) “[n]either Parekh nor Plotnick discloses ‘the metadata of an advertisement includes the local broadcasting time regulation,’” and (2) “‘the time of day at which said advertisement may be shown’ is not included in the metadata of the combination of Plotnick and Parekh.”).⁶ Patent Owner appears to rely on the disclosure of the “Time of Day” Field Name in Table 1 and describes “[c]ode to indicate time of day when advert may be shown.” *See* Sur-reply 5–6 (reproducing Ex. 1001, Table 1). Again, limitation 1.c.1 is broader than various descriptions of different types of header fields described in the specification, for example, it

⁶ These two Sur-reply arguments contradict each other by implying the metadata (claimed header first frame) must include both “the local broadcasting time regulation” and “the time of day at which said advertisement must be shown.” In any case, as determined herein, limitation 1.c.1 requires neither.

may include a “selected word.” *See* Ex. 1001, 6:4–12 (“The Fields in an advert header can be used to ensure that only appropriate adverts are shown during the time-shifted viewing . . . such as those for alcoholic drinks, being shown before e.g. 7.30 pm *Even a selected word can be used as a control e.g. the word ‘politician’ can prevent an advert being shown during an election.*” (emphasis added)).

Therefore, the ’302 patent shows that the claimed header’s “first field related to a local broadcasting regulation” is broad enough to include various types of data related to a broadcasting regulation, which other aspects of the system implement to “restrict the time of day of” showing the ad, including “keywords, such as those linked to alcoholic drinks” to “match[] against local viewing regulations” stored in a rules database.⁷ *See* Ex. 1001, 4:35–37, 4:60–65 (“rules database 90 . . . stores the rules which apply to broadcast advertisements”). In any event, as summarized above, the Petition shows that Plotnick’s “ad queue may further vary based on . . . “*what time of day it is, [or] what day of the week’ it is,*” thereby suggesting specific times to restrict ads via a first header frame. *See* Pet. 42–43 ¶ 194 (emphasis added).

With further respect to the “header” as limitation 1.c.1 recites, as Petitioner notes, the Petition relies on Parekh’s teaching and suggestion to comply with local broadcasting time regulations and relies on the combined teachings of the references and knowledge of an artisan of ordinary skill to teach the header limitation. Reply 6–7. As noted in the Institution Decision,

⁷ As outlined above and as discussed further below, Petitioner does not specifically rely solely on a keyword in Plotnick to reach claim 1; however, Patent Owner admits that the combined teachings of Plotnick and Parekh suggest such a keyword for restricting the time of day of ad viewing. *See* Sur-reply 14–18.

Patent Owner explains that “[h]eaders . . . are specific pieces of information located at the beginning of a file.” Inst. Dec. 27 (quoting Prelim. Resp. 22). And Patent Owner acknowledges that headers “are part of a standardized structure or protocol and contain instructions, parameters, or control data for processing the associated file.” *Id.* (quoting Prelim. Resp. 22).

Patent Owner’s Preliminary Response arguments listed above corroborate Petitioner’s showing that headers were well-known constructs in standardized prior art data organization formats or protocols for storing and processing control data in header fields for the control data. *See* Inst. Dec. 27 (similar preliminary finding (citing [Prelim. Resp.] 22)). As Patent Owner recognizes, Patent Owner agrees that Plotnick’s control data 1006 includes ad metadata. *See* PO Resp. 10. Petitioner explains that Plotnick’s control data involves generating ad queue structures and storing them in ad que database 1018. Pet. 43 (citing Ex. 1005 ¶¶ 155, 169). And as noted above, Petitioner further explains that ad queue data may further “vary based on ‘what subscriber 1260 is interacting with the TV, *what time of day it is*, [or] what day of the week’ it is.” *Id.* at 42–43 (quoting Ex. 1005 ¶ 194).

Petitioner further explains that a person of ordinary skill in the art would have understood, based on prior known uses of metadata in the relevant art, that Plotnick’s ad metadata would have been stored in header fields. Pet. 42 (citing Ex. 1002 ¶¶ 97–98, 121–123). At a cited paragraph, Dr. Houh cites a prior art reference to Signal that teaches a “header” that includes various metadata such as “asset metadata 136” and “user metadata 140.” Ex. 1002 ¶ 123 (quoting Ex. 1038 ¶¶ 19–21). Dr. Houh cites another prior art reference to Rajakarunanayake that similarly teaches HTTP headers containing different types of metadata, and other prior art references to McKoen and Kim with similar teachings. *See id.* (citing Ex. 1025 ¶¶ 29–37;

Ex. 1027 ¶ 42; Ex. 1026 ¶¶ 21, 69, 70). Dr. Houh also cites a prior art to reference to Inoue, which shows different metadata fields in a header for describing different ads. *Id.* ¶ 122 (citing Ex. 1036 ¶¶ 100–101, Fig. 6A). Petitioner’s evidence shows that headers with different header fields storing metadata for advertisements was well-known in the relevant art. As indicated above, Patent Owner does neither addresses nor disputes Petitioner’s contention that headers with fields were well-known data structures in the prior art. *See generally* PO Resp.

Petitioner generally explains that an artisan of ordinary skill in the art would have been “motivated to store . . . data in the advertisements metadata header area,” because “information about number of plays [as limitation 1.c.2 requires as discussed below] would be separately identifiable from the metadata relating to timing regulations but would similarly be associated with the advertisement it corresponds to.” Pet. 49 (addressing related limitation 1.c.2 as discussed below (citing Ex. 1002 ¶ 131)). And as noted above, Dr. Houh testifies that storing control metadata with its ad “allows for associating the metadata with the advertisement using the mechanisms of the database itself, and allows the metadata header to be easily retrieved” (Ex. 1002 ¶ 97), and similarly, putting control metadata in header fields allows “the information [to] be retrieved in an organized and predictable way” (*id.* ¶ 124).

In other words, Petitioner persuasively shows that it would have been obvious to put Plotnick’s control metadata, including metadata related to FCC timing regulations as suggested by Plotnick and Parekh, in a header field in order to associate different ad attributes/metadata such as timing regulations and number of displays for that advertisement while keeping the different metadata separate and allowing the metadata header to be easily

retrieved in an organized, predictable, and well-known manner. *See* Pet. 49; Ex. 1002 ¶¶ 97, 124. Patent Owner’s arguments do not undermine or specifically address Petitioner’s obviousness rationale and evidence regarding the recited header frame, which the record supports as outlined above.

Rather, Patent Owner argues that “[b]oth Plotnick and Parekh do not teach: (1) local broadcasting time regulation restricts the time of day during ‘time-shifted’ period [or] (2) the header includes ‘local broadcasting time regulation.’” PO Resp. 14. According to Patent Owner, “Parekh only discloses that advertising content needs to be compliance with local broadcasting regulations laid down by a broadcasting authority during broadcasting time (not during ‘time-shifted’ period), and the local broadcasting regulations are stored in the rule engine, not in the ‘metadata’ of the advertisement.” *Id.* According further to Patent Owner, “Plotnick discloses [that the] ad queue may vary based on what time of day it is during ‘time-shifted’ period and but does not teach local broadcasting regulations, [and] Plotnick also discloses ‘metadata,’ but does not teach ‘metadata’ includes regulations relating to time of day.” *Id.* As discussed above, with respect to the preamble, Patent Owner also argues that Plotnick’s sales force enters the broadcasting restrictions. *Id.* at 9.

As Petitioner argues, these arguments attack what each reference separately teaches without accounting for Petitioner’s showing based on the combined teachings.⁸ *See* Reply 6–7. Also, as indicated above, the

⁸ Limitation 1.c.1 does not explicitly recite “time-shifted viewing,” but it recites that the “local broadcasting time regulation restricts the time of day at which said advertisement may be shown,” and limitation 1.c.2 recites “a second field related to the number of times said advertisement has

arguments rely on unsupported claim constructions. That is, limitation 1.c.1 does not require storing a local broadcasting regulation in metadata (or the recited first frame), and it does not require any specific entity to enter a local broadcasting regulation. In addition, claim 1 does not preclude storing local broadcasting regulations in a rules engine or database—step d requires “rules database means containing rules relating to said local broadcasting time regulation,” implying that the rules database may store the broadcasting regulation.

The Petition explains that “Parekh teaches that FCC broadcasting time regulations should be considered when implementing rules about the time of day that content should be played.” *See* Reply 9 (citing Pet. 45–47; Ex. 1007, 11:14–20, 11:26–36). Petitioner also explains that “the combination would have yielded the expected result that when Plotnick’s system considers the “time of day” to play an advertisement, such consideration would include applying the time restrictions of local broadcasting regulations. *Id.* at 4 (citing Pet. 47; Ex. 1002 ¶ 129). The Petition also explains that “Parekh . . . teaches additional implementation details regarding how to control the time of day that advertisements are played to users by using advertisement metadata to implement rules.” *Id.* (citing Pet. 45–47; Ex. 1002 ¶¶ 127–129). As Petitioner also explains, “Parekh also uses metadata to check its tracks against FCC time regulations.” *Id.* (citing Ex. 1002 ¶¶ 101–111, 128). As found above in connection with the preamble, the evidence of record persuasively supports, Petitioner’s similar

previously been shown during time-shifted viewing,” which reasonably implies that limitation 1.c.1 requires “time-shifted viewing” on this record. In addition, the parties appear to agree with this requirement at least for purposes of this proceeding.

and overlapping rationale here for combining the references to consider FCC time restrictions to view time-shifted ads in Plotnick's system.

For example, at cited paragraph 128, Dr. Houh explains that similar to Plotnick, "Parekh likewise teaches the use of metadata associated with each track and checking each track against business rules like the FCC time regulations." Ex. 1002 ¶ 128 (citing Ex. 1007, 10:47–51 ("the track is checked against business rules using metadata")). Dr. Houh also explains that "Parekh teaches that each advertisement can have associated 'inclusion criterion' that is used to determine whether and how the advertisement should be integrated into a broadcast." *Id.* (citing Ex. 1007, 16:17–20, 20:9–21). Parekh supports Dr. Houh and Petitioner at the cited passages. *See* Ex. 1007, 10:47–51 (using business rules in metadata), 16:17–20 ("inclusion criteria may include a target demographic, . . . and prohibited content"), 20:9–11 (using inclusion criteria for each ad).

Patent Owner generally agrees that "Parekh . . . discloses that metadata is associated and transmitted, processed, and stored with each advertisement in a 'media database 340.'" Prelim. Resp. 23 (citing Ex. 1007, 10:32–37, 10:57, 11:11–13, 9:66–10:4). And Patent Owner agrees that Plotnick discloses metadata. PO Resp. 14. Accordingly, based on Petitioner's showing that ad headers with metadata fields would have been obvious in order to easily access control metadata in a predictable fashion as summarized above, Petitioner shows persuasively that Parekh suggests using metadata related to FCC time restrictions in a first field of an ad header in Plotnick's system to coordinate when to display ads based on the FCC time restrictions (i.e., a "time regulation laid down by a local broadcasting authority, which . . . restricts the time of day at which said advertisement may be shown"). *See* Reply 7–10 (summarizing the Petition's showing).

Patent Owner's related argument that "Plotnick also discloses 'metadata,' but does not teach 'metadata' includes regulations relating to time of day," misses the mark because as noted above, limitation 1.c.1 does not require the first header field to store regulations related to time of day. *See* PO Resp. 14. As discussed above, Petitioner shows that Parekh suggests using metadata in header fields in Plotnick's system to coordinate playing ads according to FCC time regulations laid down by a broadcasting authority. As Petitioner explains, Parekh's ad system is similar to Plotnick's and "teaches additional implementation details regarding how to control the time of day that advertisements are played to users by using advertisement metadata to implement rules," and "the techniques of using metadata, databases, and rules, were so well-known and programmable" that "[t]he combination would simply lead to the expected result that the 'time of day' control of the Plotnick system is programmed to have timing consistent with the FCC regulations as taught in Parekh." Reply 10 (citing Ex. 1002 ¶¶ 110–111, 128–129).

Patent Owner's argument that neither Plotnick nor Parekh teach time-shifted viewing based on local broadcasting regulations does not undermine Petitioner's primary reliance on Plotnick to teach playback of ads as combined with the teachings of Parekh that relate to FCC time restrictions, as discussed in connection with the preamble (assuming it is limiting). *See* PO Resp. 14–15; Reply 12 ("Instead of addressing this time-shifted viewing/listening teaching of Plotnick, Patent Owner argues that Parekh does not teach time-shifted viewing."). As Petitioner explains, a person of ordinary skill in the art "would have known the problems related to playing PVR-recorded programs at a later time, including the fact that

advertisements may be inappropriate for the time of day at playback.” *Id.* at 13 (quoting Ex. 1002 ¶ 100). As Petitioner also explains,

while Parekh discloses a live broadcast system, a [person of ordinary skill in the art] would have been motivated to apply the FCC time regulation teachings of Parekh in the Plotnick system for the very reasons taught in both Plotnick and Parekh—to ensure that advertisements are appropriate for the time of day that they are played to users.

Id. at 13–14 (citing Pet. 46–47, 53–55). As outlined in connection with the preamble, such a system would have been obvious in order to ensure compliance with FCC regulations and thereby protect children and avoid fines. *See* Reply 4; Pet. 34–35.

Petitioner persuasively explains further as follows:

By the 2000s, the V-chip was known by POSITAs, and even in mainstream media, as a technology that would enable parents to program restrictions in their TVs to block offensive content from being played to their children. [Ex. 1040] ¶226. Thus, the motivation to reduce the risk of minors being exposed to inappropriate content was well-known by POSITAs at the time of the invention. Ex-1040 ¶227. This motivation applied equally, if not even more so, when PVR technology made it possible to record content for time-shifted viewing and thus made it possible to record late night content and for playback during the day. Ex-1040 ¶227. Plotnick itself describes that “the relative appropriateness of the prepared ad schedule may change as circumstances change” and that “[s]uch circumstances may include, but are not limited to, the *time of day*, program or type of program being watched channel selection, *identity of the current viewer*, and timing/duration of the upcoming avail.” Ex-1006 ¶51 (incorporated by reference into Ex-1005 ¶¶2–14, 36, 194); Ex-1040 ¶227. Plotnick thus teaches and provides a motivation to ensure that time-shifted advertisements are appropriate for the time of day that they are played, including considerations based on the identity of the viewer. *Id.* And a POSITA would have looked to common standards, including local broadcasting regulations, to determine what timing and

types of content were generally accepted or adopted by the general public as appropriate. Ex-1040 ¶228.

Reply 14–15. As Petitioner shows, Plotnick, viewed through the lens of a person of ordinary skill in the art aware of well-known program restrictions to block offensive TV content from children, teaches restricting time-shifted viewing of inappropriate ads based on the time of day and identity of the viewer in order to comply with local regulations, thereby further suggesting implementing Parekh’s FCC time restrictions. Accordingly, as outlined above, the record supports Petitioner’s showing based on the combined teachings of the references.

Patent Owner also argues that “Parekh does not clearly define the relationship between ‘content of advertisement’ and ‘metadata of the advertisement.’” PO Resp. 12. Even if this is correct, this argument attacks Parekh separately and is unavailing. As summarized above, Petitioner relies on Plotnick, which describes “*control data related to ads (ad metadata)* 1006” that ““includes descriptions of the ad content, target audience, encoding attributes, *delivery instructions*, and contract limitations’ to select appropriate advertisements” See Ex. 1005 ¶ 154 (emphases added); Pet. 28 (citing and partially quoting Ex. 1005 ¶ 154 in similar fashion). Petitioner explains further that “Plotnick’s STB PVR applies processing rules to vary what ads will be played, including based on ‘what subscriber [] is interacting with the TV, what time of day it is, what time of week, what programs are on, and other criteria.’” *Id.* (quoting Ex.1005 ¶ 194; citing Ex. 1005 ¶¶ 187, 201).

Patent Owner also argues that in Parekh’s system, regarding content issues such as illegal recordings or profanity, the content will be rejected before added to the media database with the appropriate metadata, which means the unrejected

content can be broadcast at any time, there is no need that “metadata” including “a first field related to a local broadcasting time regulation laid down by the broadcasting authority.”

PO Resp. 12.

Patent Owner modifies this argument in the Sur-reply to indicate that Parekh’s system does not block all profane material; rather, Patent Owner contends that Parekh’s metadata includes information about whether the ad is profane and then it determines the time of viewing (based on the FCC Safe Harbor timing provisions). For example, Patent Owner argues that in Parekh’s system, a rules engine determines “the time of day at which the advertisement may be shown (when broadcasting on broadcast station(s))” and “if the content of the advertisement includes indecent and/or profane material, *the advertisement can only be broadcast inside the FCC Harbor based on regulations from regulators 110.*” Sur-reply 12 (emphasis added). “Therefore,” Patent Owner contends,

in order to [be in] compliance with FCC broadcasting time regulations, the metadata of an advertisement of Parekh includes “content information about whether or not the content of the advertisement includes profanity material,” the metadata need not to include “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.”

Sur-reply 15 (emphasis omitted).

This line of argument does not undermine Petitioner’s showing. As set forth above, Petitioner relies on Plotnick’s system, as modified by Parekh’s FCC disclosures, to teach displaying a time-shifted program at a time of day specified by a regulator such as the FCC. Moreover, contrary to Patent Owner’s arguments, whether Parekh’s metadata “need not . . . include” “a first field related to a local broadcasting limitation” is irrelevant

to Petitioner’s showing, which relies on the combination of Plotnick and Parekh and the knowledge of an artisan of ordinary skill.

In any event, Petitioner persuasively explains, in reply to the Response arguments, that Patent Owner’s airability argument “is a red herring—the ‘airability’ teaching in Parekh is unrelated to Parekh’s teaching that a ‘rules engine’ applies local broadcasting time regulations.” Reply 11 (comparing Ex. 1007, 10:59–11:13, *with id.* at 11:14–31). Petitioner shows that Parekh’s airability filter excludes content that the system will never play as it is too indecent or profane, or it is illegal. *See id.* (citing Ex. 1007, 10:59–11:13). Petitioner also shows that “Parekh’s ‘rule engine’ applies to manage *when, not whether*, content is played from the media database.” *Id.* (citing Ex. 1007, 11:29–31 (describing allowing some forms of indecent and/or profane content within the FCC Safe Harbor time period)). Petitioner persuasively explains that “[t]his means that the content is in the database and has already passed the ‘airability’ filter.” *Id.* (citing Ex. 1007, 11:11–11:31 (describing first the airability filter and then the rules engine as a following step)). “In other words, Parekh’s ‘airability’ filter is an initial filter to ensure that the pool of media does not include illegal content that can never be aired, while Parekh’s ‘rules engine,’ which is relied on in Ground 1, selects from the pool of advertisements by applying criteria, including time-based rules based on local broadcasting time regulations.” *Id.* at 11–12.

As outlined above, Patent Owner’s Sur-reply arguments appear to agree with the Reply’s characterization of Parekh as to the “airability” filter and rules engine, because as noted above, Patent Owner contends, for example, that **“in order to [be in] compliance with FCC broadcasting time regulations, the metadata of an advertisement of Parekh includes**

‘content information about whether or not the content of the advertisement includes profanity material.’” Sur-reply 15.

Based on the its Sur-reply argument above, Patent Owner belatedly contends that “in order to compl[y] with FCC broadcasting time regulations, the metadata of an advertisement of Plotnick *should also include* ‘content information about whether or not the content of the advertisement includes profanity material.’” Sur-reply 16 (emphasis added). This line of argument about what Plotnick’s metadata “should” include does not address Petitioner’s obviousness showing. Even if what Patent Owner argues is correct, showing that the teachings of Plotnick and Parekh suggest that the metadata of Plotnick “*should also include* ‘content information about whether or not the content of the advertisement includes profanity material’” simply does not address, much less undermine, Petitioner’s showing that it would have been obvious to include metadata related to a local broadcasting time regulation in the recited first header field. *See id.* (emphasis added).

In addition, as Petitioner noted during the Oral Hearing, if Plotnick’s first field includes an indication that the ad includes profane material (e.g., including a keyword or otherwise), which the Sur-reply argues it “should,” this satisfies limitation 1.c.1 because Patent Owner’s arguments admit that Plotnick’s system acts on the profanity keyword or indication to restrict the add to a time of day of viewing the ad. *See supra* note 7; Tr. 8:3–15 (addressing Sur-reply 15 and keywords); Sur-reply 15–16 (arguing that the profanity keyword allows the system to be in “**compliance with FCC broadcasting time regulations**”); Ex. 1001, 6:4–12 (“The Fields in an advert header can be used to ensure that only appropriate adverts are shown during the time-shifted viewing . . . such as those for alcoholic drinks, being shown before e.g. 7.30 pm Even a selected word can be used as a

control e.g. the word ‘politician’ can prevent an advert being shown during an election.”).

Patent Owner’s remaining arguments generally summarize various alleged teachings in Plotnick and Parekh, attack the teachings separately, and fail to undermine Petitioner’s showing based on the combined teachings of the references and the claimed invention. *See* PO Resp. 8–14; Sur-reply 4–19.

Based on the foregoing discussion and the record, Petitioner’s showing as to limitation 1.c.1 is persuasive.

d) Limitation 1.c.2

Limitation 1.c.2 recites “a second field related to the number of times said advertisement has previously been shown during time-shifted viewing.” Petitioner contends that “Plotnick discloses that the processing component 1010 ‘updates the ad metadata 1006 *based on ad delivery* and user interaction.’” Pet. 47 (citing Ex. 1005 ¶ 156; Ex. 1002 ¶ 130). Petitioner also relies on Plotnick’s explanation that “[t]he traffic and billing system 712 tracks the insertion results and bills the advertiser based on the insertions.” *Id.* (quoting Ex. 1005 ¶ 170). Petitioner also contends that Plotnick explains that “viewer usage data is sent . . . ‘upstream.’” *Id.* (quoting Ex. 1005 ¶ 168). Therefore, according to Petitioner, a person of ordinary skill in the art “would have been motivated to implement this ‘upstream’ transmission of viewer delivery metadata using a second header field because the data would need to be stored and associated with the advertisement so that the required reports can be generated.” *Id.* at 48–49 (citing Ex. 1002 ¶ 131). As noted above, for a related limitation, Petitioner also argues that it would have been obvious “to report played advertisement data for data collection

and payment.” *Id.* at 31 (citing Ex. 1002 ¶¶ 100, 109; Ex. 1007, 5:12–17, 7:7–18, 9:20–22, 9:25, 9:56–61, 11:29–53, 17:36–46).

Patent Owner argues that Plotnick does not disclose updating “the number of times” the advertisement was previously shown; and updating metadata after “ad delivery” in Plotnick means updating the metadata after the PVR receives the ad rather than after the user views the ad. *See* PO Resp. 15–17. Patent Owner also argues that Plotnick discloses tracking insertion results and bills the advertiser based on the insertions, but “[t]he insertion is different from ‘the number of times the ad was shown to the user.’” *Id.* at 17 (providing no citation to Plotnick). Patent Owner contends the insertion is different from “the number of times the ad was shown to the user,” because “[f]or example, in one aspect, an insertion is conduct, but the viewer does not view the inserted ad, in another aspect, an insertion is conduct, but the viewer views one the inserted ad for several times, since the ad is recorded in the PVR.” *Id.*

The latter insertion-based arguments are not clear. Patent Owner provides no citation or evidence to support the insertion-based arguments and fails to explain how “an insertion is conduct” in both “aspect[s]” or how that is relevant to a claim limitation. *See* PO Resp. 17. Plotnick’s system simply inserts ads based on profile matches and “updates the metadata and transmits an insertion report to the head-end.” *See* Ex. 1005 ¶¶ 163, 170; Pet. 47–48.

In any event, as the Petition shows, Plotnick’s system “updates the ad metadata 1006 ***based on ad delivery*** and user interaction.” Pet. 47 (quoting Ex. 1005 ¶ 156; citing Ex. 1002 ¶ 130). The Petition also shows that Plotnick’s “system ***updates the ad metadata*** and transmits an insertion report to the head-end” wherein the “traffic and billing system 712 tracks the

insertion results and bills the advertiser based on the insertions.” *Id.* at 47–48 (quoting Ex. 1005 ¶¶ 163, 170); *accord* Reply 16 (summarizing the Petition (citing Ex. 1005 ¶¶ 163, 170)).

As Petitioner also explains, “Plotnick’s disclosure that the system will ‘update[] the ad metadata 1006 based on ad delivery *and user interaction*’ makes clear that the updates are based on delivery to the user (and not to the PVR).” Reply 16–17 (quoting Ex. 1005 ¶ 156). As Petitioner also explains, Plotnick’s system stores “ad delivery instructions” to schedule when the system *displays* the ads to the user, where the VoD Server saves the instructions alongside the ad content. *See id.* at 18 (citing Ex. 1005 ¶ 170 (“The VoD Server 1172 uses the ad delivery instructions 1170 to schedule the ads *for display* at the beginning and end of VoD [stored] content.” (emphasis added))). Accordingly, Petitioner’s showing is persuasive, and Patent Owner’s arguments are unavailing.

The Petition also relies on what Plotnick’s teachings would have conveyed to an artisan of ordinary skill. *See* Pet. 48 (arguing that a person of ordinary skill in the art “would have understood these metrics would include the number of times the ad was shown to the user” (citing Ex. 1002 ¶ 130)). The Petition also relies on obviousness, providing articulated reasons for updating ad counts in metadata, based on factual underpinnings in Plotnick and the knowledge of an artisan of ordinary skill, *See id.* (arguing a person of ordinary skill “would have been motivated to store such data in the advertisements metadata header area” so that “information about number of plays would be separately identifiable from the metadata relating to timing regulations but would similarly be associated with the advertisement it corresponds to”), 29 (arguing that a person of ordinary skill in the art “would have known the importance of tracking how many times an advertisement

was played—e.g., for billing, capping the number of playbacks based on what the advertiser paid for, and/or avoiding annoying the viewer” (citing Ex. 1002 ¶¶ 60, 99)), 31 (it would have been obvious “to report played advertisement data for data collection and payment” (citing Ex. 1002 ¶¶ 100, 109; Ex. 1007, 5:12–17, 7:7–18, 9:20–22, 9:25, 9:56–61, 11:29–53, 17:36–46)).

Patent Owner does not address Petitioner’s obviousness rationale. *See* PO Resp. 15–17. Petitioner’s citations to Plotnick, Parekh, Dr. Houh, and other citations directed to header fields as a well-known data protocol for ads and similar data constructs as outlined above in connection with limitation 1.c.1 support Petitioner’s showing. Patent Owner’s arguments, directed to alleged shortcomings in Plotnick alone, do not undermine the obviousness showing. *See id.*

Patent Owner also argues with respect to Plotnick that “[t]o the extent that the traffic and billing system 712 tracks the number of times said advertisement has previously been shown, ‘the number of times’ should be stored in the billing system 712, not in the metadata.” PO Resp. 17. However, Patent Owner provides no citation or rationale to support the argument as to what “should be,” and the argument does not clearly allege a shortcoming in Petitioner’s showing. *See id.* In any event, contrary to the argument, and as outlined above, Petitioner shows that Plotnick’s “system ***updates the ad metadata*** and transmits an insertion report to the head-end” and the “traffic and billing system . . . tracks the insertion results and bills the advertiser based on the insertions.” Pet. 47–48 (quoting Ex. 1005 ¶¶ 163, 170); *accord* Reply 16 (similar showing (citing Pet. 47–48)). Finally, like its other arguments, this argument fails to address Petitioner’s obviousness showing that supports updating the ad metadata (e.g., to provide

proper billing and avoid annoying the user), as outlined above. *See* PO Resp. 15–17.

Based on the foregoing discussion and the record, we determine that Petitioner’s showing as to limitation 1.c.2 is persuasive.

e) Limitations 1.d and 1.e

Petitioner also provides a persuasive showing with respect to limitations 1.d (“rules database means containing rules relating to said local broadcasting time regulation;”) and 1.e (“clock means to supply a real-time clock signal”). *See* Pet. 50–55.

Patent Owner does not address Petitioner’s showing. *See* PO Resp. 8–19.

Based on the record, we determine that Petitioner’s showing as to limitations 1.d and 1.e is persuasive.

f) Limitation 1.e.1

Limitation 1.e.1 recites “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.” Petitioner relies reads the control means onto Plotnick’s “processing component 1010[]” or “processing 1010.” Pet. 53 (citing Ex. 1005 ¶¶ 154–156). Petitioner also relies on Plotnick’s disclosure that “[t]he ad queue 1420 is a list of the next ads 1410 that should be inserted” and played according to “*what time of day it is*, what day of the week, . . . and other criteria.” *See id.* (quoting Ex. 1005 ¶ 194).

Referring to its showing for limitations 1.c., 1.c.1, 1.c.2, and 1.d, Petitioner contends that the combination of Plotnick and Parekh teach that each advertisement would have a header with a first field having metadata relating to a local broadcasting time regulation and a rules database with

rules based on local broadcasting time regulations. *See* Pet. 53. Petitioner contends that Plotnick’s system as combined with Parekh reads the applicable header fields to apply the corresponding desired control to the associated advertisement. *Id.* (citing Ex. 1002 ¶ 142).

Petitioner contends that an artisan of ordinary skill in the art would have understood that the Plotnick system as modified by Parekh reads the first field metadata to know what restrictions apply, and then applies the correct restriction based on the real-time clock “time of day” information. Pet. 54 (citing Ex. 1005, ¶ 155, Fig. 10; ¶ 142). Referring to its showing for limitation 1.d, Petitioner also contends that the rules applied would be the rules discussed in the rules database, relating to the local broadcasting regulation. *Id.* (citing Ex. 1002 ¶ 142). Petitioner also contends that Plotnick teaches that the control means applies the process to each stored advertisement and also implements the recited functions for the control means. *Id.* at 55–56 (citing Ex. 1002 ¶¶ 143–144; Ex. 1005 ¶ 134).

As summarized above, the record supports Petitioner’s showing.

Patent Owner relies on its unavailing argument addressed above in connection with limitation 1.c.1. PO Resp. 18–19 (“Plotnick and Parekh does not teach that each advertisement has a header with a first field having metadata relating to a local broadcasting time regulation, therefore, Plotnick and Parekh does not teach ‘control means arranged to read said first field’ in the limitation 1[e.1]”).

Based on the record, we determine that Petitioner’s showing as to limitations 1.e.1 is persuasive.

g) Limitation 1.f

Limitation 1.f 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.” Similar to its showing for limitation 1.c.2, Petitioner relies on the combined teachings of Plotnick and Parekh to address limitation 1.f. Pet. 56–57. Petitioner reads the “control means” structure on Plotnick’s processing component 1010, which “updates the ad metadata 1006 based on ad delivery and user interaction.” *Id.* at 56 (quoting Ex. 1005 ¶ 156). Petitioner also relies on Plotnick’s teaching that “the system updates the ad metadata and transmits an insertion report to the head-end.” *Id.* at 29 (quoting Ex. 1005 ¶ 163). Petitioner relies further on Plotnick’s teaching of creating an “ad play report” when “ads are displayed to the subscriber.” *Id.* (quoting Ex. 1005 ¶ 169). Petitioner also relies on Parekh’s teaching that “[r]eporting may include an analysis of the broadcast associated with the broadcasted ad” and “may indicate that . . . an ad for a female fitness center was bombed by 24,343 females and 12,522 males.” *Id.* (quoting Ex. 1007, 17:39–46; citing Ex. 1007, 9:27–32 (An “ad integration server” enables “real-time ad measurement and analysis.”)).

Based on these teachings and others, and the testimony of Dr. Houh, Petitioner asserts that a person of ordinary skill in the art “would have known the importance of tracking how many times an advertisement was played—e.g., for billing, capping the number of playbacks based on what the advertiser paid for, and/or avoiding annoying the viewer.” Pet. 29 (citing Ex. 1002 ¶¶ 60, 99). Petitioner also explains that “an advertiser may have purchased only a certain number plays or may have a rule about the frequency at which their ad is shown, e.g., to avoid annoying the viewer.” *Id.* at 56 (citing Ex. 1002 ¶ 60). According to Petitioner “[t]hese were well-known criteria that would have used up-to-date metadata regarding how many times the ad was played.” *Id.* (citing Ex. 1002 ¶¶ 60–61, 148).

In addition to its showing with respect to the header limitation as discussed in connection with limitations 1.c.1 and 1.c.2, Petitioner contends that “storing and using metadata in fields of a header was well-known.” Pet. 56 (citing Ex. 1002 ¶¶ 122–123, 148). As also indicated above with respect to related limitation 1.c.1, at cited paragraph 124, Dr. Houh testifies that storing “metadata relating to times for displaying the advertisement” in an header would have been obvious because “the purpose of a header is to set out required metadata information associated with the underlying data in various fields, so that the information can be retrieved in an organized and predictable way.” Ex. 1002 ¶ 124. At cited paragraph 123, Dr. Houh cites prior art documenting the storage of metadata in headers to define and describe data associated with media content and video streams. *Id.* ¶ 123.

Petitioner explains further that “[u]pdating such metadata upon playback, including in time-shifted mode, would have been easy to implement because a [person of ordinary skill in the art] would have known how to update metadata, which could be as simple as incrementing the play-count up when a certain duration of the advertisement is played.” Pet. 57. Petitioner also explains that it would have been obvious “to implement ‘updating’ metadata after an advertisement is shown by updating a second field of the header when an advertisement is shown, including during time-shifted viewing, because updating such metadata in the second field of the header would ensure that metadata in the header is accurate and up-to-date.” *Id.* at 56 (citing Ex. 1002 ¶ 148). Petitioner also argues that storing such data in the second header field the system would have been obvious to “ensure that if that item is considered for playback again, the system would be able to decide whether to play the item using accurate and up-to-date information.” *Id.* (citing Ex. 1002 ¶ 148).

After a review of the record as summarized above, we determine that it supports Petitioner's showing for limitation 1.f. Patent Owner does not contest Petitioner's showing as to limitation 1.f.

Based on the record and summary above, we determine that Petitioner's showing for limitation 1.f is persuasive.

h) Summary

Based on the summary above and a review of the record, we determine that Petitioner persuasively maps the limitations of claim 1 to Plotnick and Parekh and provides reasons 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 by a preponderance of evidence that claim 1 would have been obvious over Plotnick and Parekh.

4. Claims 2–4, 6–9, and 12–15

Claims 2–4 and 6–9 depend directly or indirectly from independent claim 1. Claims 13–15 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 Plotnick and Parekh. Pet. 57–73. In support, Petitioner relies on the testimony of Dr. Houh and provides citations to the reference teachings. *Id.*

Petitioner persuasively maps the limitations of claims 2–4, 6–9, and 12–15 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 relies on its arguments with respect to claim 1. *See* PO Resp. 19–21.

Based on the record and the foregoing discussion, we determine that Petitioner shows by a preponderance of evidence that claims 2–4, 6–9, and 12–15 would have been obvious based on the combined teachings of Plotnick and Parekh.

E. Ground 2, Obviousness, Claims 1–4, 6–9, and 12–15

Petitioner argues that Plotnick renders obvious claims 1–4, 6–9, and 12–15 based on Patent Owner’s alleged claim construction positions with respect to preliminary infringement contentions as implied via its infringement assertions in district court litigation. *See* Pet. 73 (asserting that Plotnick renders obvious claim 1 “under Patent Owner’s interpretation”), 74–81 (asserting that Plotnick “discloses” the added limitations of claims 2–4, 6–9, and 12–15 “under Patent Owner’s interpretation”).

Patent Owner disputes that the claims would have been obvious under its preliminary infringement contentions, relying on its arguments in connection with Ground 1 addressed above. PO Resp. 22. Based on our determination with respect to Ground 1 above, we decline to reach Ground 2.

IV. CONCLUSION

For the reasons discussed above, Petitioner has shown by a preponderance of the evidence that claims 1–4, 6–9, 12–15 of the ’302 patent are unpatentable.⁹ The following table summarizes our conclusions:

⁹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg. 16654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1–4, 6–9, 12–15	103(a)	Plotnick, Parekh	1–4, 6–9, 12– 15	
1–4, 6–9, 12–15	103(a)	Plotnick ¹⁰		
Overall Outcome			1–4, 6–9, 12– 15	

V. ORDER

In consideration of the foregoing, it is hereby

ORDERED that Petitioner establishes by a preponderance of evidence that challenged claims 1–4, 6–9, and 12–15 are unpatentable; and

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

or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. §§ 42.8(a)(3), (b)(2).

¹⁰ This Final Written Decision does not reach this ground.

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