

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

WILDSEED MOBILE, LLC,
Patent Owner.

IPR2023-00244
Patent 10,251,021 B2

Before KARL D. EASTHOM, TERRENCE W. McMILLIN, and
MICHAEL T. CYGAN, *Administrative Patent Judges*.

Opinion for the board filed by EASTHOM, *Administrative Patent Judge*.

Opinion Concurring-in-Part and Dissenting-in-Part filed by CYGAN,
Administrative Patent Judge.

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 with a Declaration of Dr. Henry Houh (Ex. 1003) pursuant to 35 U.S.C. §§ 311–319 to institute an *inter partes* review of claims 1–19 of U.S. Patent No. 10,251,021 B2 (Ex. 1001, the “’021 patent”). Paper 2 (“Pet.”). Wildseed Mobile LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

After the Institution Decision (Paper 10, “Inst. Dec.”), Patent Owner filed a Response (Paper 19, “PO Resp.”) with a Declaration of Robert Stillerman (Ex. 2007), Petitioner filed a Reply (Paper 24, “Reply”), and Patent Owner filed a Sur-reply (Paper 28). After the briefing, the Board conducted an oral hearing and entered a Transcript thereof in the record. Paper 35 (“Tr.”).

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 1–19 of the ’021 patent are unpatentable.

A. Real Party in Interest

Petitioner identifies itself and YouTube, LLC as real parties in interest. Pet. 81. Patent Owner identifies itself as the real party in interest. Paper 5, 1.

B. Related Matters

The parties identify the following district court matters related to the ’021 patent: *Wildseed Mobile LLC v. Google LLC*, No. 3-22-cv-04928 (N.D. CA, filed Aug. 29, 2022) (the “California litigation”); *Wildseed Mobile LLC v. Google LLC*, 6-22-cv-00357 (W.D. TX, filed Apr. 4, 2022) (transferred to N.D. CA—i.e., the California litigation); *Wildseed Mobile*

LLC v. Google LLC, No. 6-21-cv-01245 (W.D. TX, filed Oct. 8, 2021) (voluntarily dismissed, Apr. 4, 2022). Pet. 81; Paper 5, 1.

Patent Owner asserts that *inter partes* reviews IPR2023-00245, IPR2023-00246, IPR2023-00247, and IPR2023-00248, each filed by Petitioner, involve patents related to the '021 patent. Paper 5, 1.

C. The '021 Patent (Ex. 1001)

The '021 patent relates to a server for generating “a recommendation for a venue or an event of interest proximally located to an inferred current location of a user of a portable media player device.” Ex. 1001, code (57).

In one embodiment,

a server may determine one or more media preferences for a user based at least in part on media stored on or accessed using the portable media player device of the user. The server may generate information related to the current location or a recommendation for a venue or an event of interest to the user based at least in part on the one or more media preferences and the inferred current location of the user.

Id.

Figure 1, reproduced below, illustrates an environment implementing the disclosed invention:

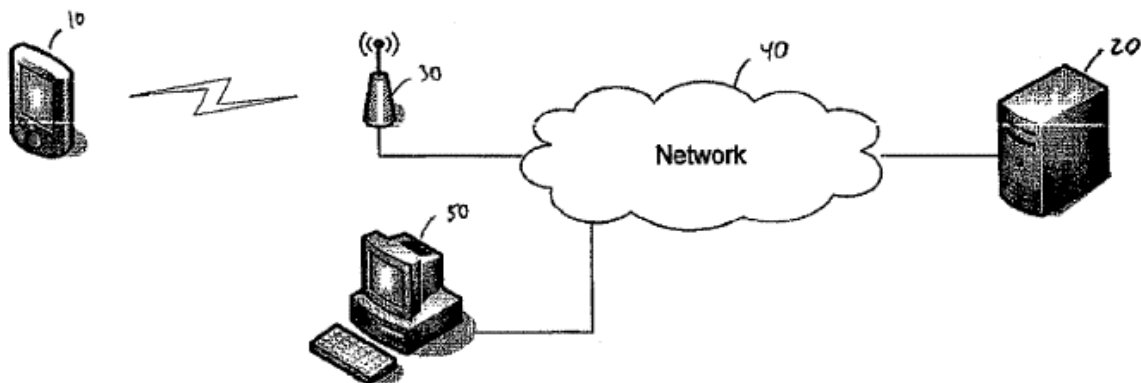


Figure 1 illustrates portable media player device 10 for storing media files associated with a user, wireless access point 30, network 40, computer

50 associated with media player device 10, and server 20 that “may infer a current location of the user[’s] . . . portable media player device 10,” and also “may transmit one or more recommendations for a venue or event, or information of interest to the user, e.g. to portable media player device 10.” Ex. 1001, 3:58–4:19.

The server “infer[s] an entertainment interest of the user.” Ex. 1001, 5:10–13. The “inference may include retrieving media or information about media stored on and/or accessed using the user’s portable media player device.” *Id.* at 5:11–13. Then,

the server may transmit a recommendation (or information) to a user, e.g. his portable music player device having jazz music stored on or accessed using the portable music player device for a club that plays live jazz or blues within a convenient walking or driving distance to the current location of the user and the portable media player device.

Id. at 6:16–22.

D. Illustrative Claim

Claims 1, 10, and 16 are independent. Claim 1 illustrates the claimed subject matter. Claim 1 follows (with bracketing information added to conform to Petitioner’s nomenclature):

1. [1.0] One or more non-transitory computer-readable media (NTRM) comprising [1.1] instructions written thereon, wherein execution of the instructions by one or more processors of a computer server is to cause the computer server to:

[1.1.1] control receipt of media or information about the media, the media being stored on a portable media player device or accessed using the portable media player device;

[1.1.2] infer one or more entertainment preferences of a user of the portable media player device based at least in part on the retrieved media, the retrieved information about the media, and a plurality of media content types of the media stored on or accessed by the portable media player device, wherein the plurality of media content types comprises textual media, image media, audio media, and video media;

[1.1.3] access one or more sources of information about venues or events proximal to a current location of the user;

[1.1.4] identify at least one of said venues or events as being of interest to the user based at least in part on the one or more entertainment preferences inferred by the server and the current location of the user;

[1.1.5] generate a recommendation indicating the identified venue or event as a venue or event of interest to the user; and

[1.1.6] control communication of the recommendation to the user.

E. Asserted Grounds of Unpatentability

Petitioner asserts that claims 1–19 are unpatentable as follows:

Claim(s) Challenged	35 U.S.C §	Reference(s)/Basis
1, 2, 4, 7–10, 12, 13, 15, 16	103(a) ¹	Sasaki, ² Ellis, ³ Jacobi ⁴
5, 6, 14, 18, 19	103(a)	Sasaki, Ellis, Jacobi, Havinis ⁵
3, 11, 17	103(a)	Sasaki, Ellis, Jacobi, Teicher ⁶

Pet. 21.

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103, was effective on March 16, 2013. Petitioner asserts that “[t]he ’021 patent was filed on September 21, 2015, and through a chain of continuations, claims priority to U.S. Provisional Patent Application No. 60/945,677, filed June 22, 2007.” Pet. 13. Because the date of the priority claim is before the effective date of the applicable AIA amendment, the pre-AIA version of § 103 applies for purposes of institution.

² Sasaki et al., US Pub. No. 2006/0250994 A1, published Nov. 9, 2006, filed Mar. 28, 2006. Ex. 1004.

³ Ellis et al., US Pub. No. 2005/0020223 A1, published Jan. 27, 2005. Ex. 1005.

⁴ Jacobi et al., US Pub. No. 2006/0195362 A1, published Aug. 31, 2006, filed Mar. 31, 2006. Ex. 1006.

⁵ Havinis et al., US Pat. No. US 6,169,899 B1, issued Jan. 2, 2001. Ex. 1008.

⁶ Teicher, US Pub. No. 2006/0143214 A1, published June 29, 2006, filed Feb. 1, 2006. Ex. 1007.

II. OBVIOUSNESS ANALYSIS

A. Level of Ordinary Skill in the Art

Relying on the Houh Declaration (Ex. 1003), Petitioner asserts that “on or before June 22, 2007,” a person of ordinary skill in the art

would have been knowledgeable and familiar with the field of portable devices and venue or event recommendations. That person would have a bachelor’s degree in electrical engineering, computer science, or equivalent training, and approximately two years of experience working in the field. Lack of work experience can be remedied by additional education, and vice versa.

Pet. 14 (citing Ex. 1003 ¶¶ 19–21).

Patent Owner states that its “expert proposes a similar level of ordinary skill.” PO Resp. 15 (citing Ex. 2007 ¶¶ 35–38). Patent Owner is correct. The two proposals are materially the same for purposes of trial. *Compare id.* at 15, with Pet. 14.

Determining the level of ordinary skill in the art involves various factors, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). The prior art of record also reflects the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Based on the record, we adopt the assessment offered by Petitioner, as it is consistent with the ’021 patent and the asserted prior art. Even if we were to adopt Patent Owner’s proposal, the outcome would be the same.

B. Weight of Dr. Houh's Testimony

Patent Owner argues that “[t]he Board should not credit the declaration testimony of Petitioner’s proffered expert, Dr. Houh, because key portions of his declaration repeat, often verbatim, the arguments in the Petition.” PO Resp. 58 (emphasis omitted). Patent Owner contends that “portions of Dr. Houh’s declaration relating to motivation to combine contain no additional analysis beyond that presented in the Petition.” *Id.* at 59.

Patent Owner urges the Board to compare Petition pages 25–30 with the Houh Declaration at paragraphs 58–68. PO Resp. 59. These cited paragraphs involve reasons to combine Sasaki with Ellis, and Sasaki and Ellis with Jacobi. Ex. 1003 ¶¶ 58–68. Throughout the paragraphs, Dr. Houh provides support for the testimony by citing to Sasaki, Ellis, and Jacobi. *Id.* Therefore, even if the Petition mimics some of the testimony, which the record supports, it is not clear how this undermines Dr. Houh’s testimony or the Petition.

Patent Owner also urges the Board to compare Petition pages 34–36 with the Houh Declaration at paragraphs 87–95, which pertain to limitation 1.1.2; to compare Petition pages 36–38 with the Houh Declaration at paragraphs 114–116, which pertain to limitation 1.1.3; and finally to compare Petition pages 42–43 with the Houh Declaration at paragraphs 117–120, which pertain to limitation 4.0. PO Resp. 59–60.

The record does not support Patent Owner’s arguments. Throughout the paragraphs, Dr. Houh provides support for the testimony by citing to Sasaki, Ellis, and Jacobi and to previous paragraphs pertaining to Dr. Houh’s analysis of prior limitations with citations to the relevant prior art for

support. *See* Ex. 1003 ¶¶ 87–95, 114–120. With respect to limitation 1.1.2, Patent Owner agrees that Dr. Houh’s testimony “adds block quotes from the references.” *Id.* at 59. Therefore, even if the Petition includes some of Dr. Houh’s testimony, this does not undermine Dr. Houh’s testimony. As Petitioner argues and as found above, Dr. Houh relies on prior art references to support his testimony, so it is not conclusory. *See* Reply 25 (citing *Intellectual Ventures I LLC v. EMC Corp.*, 786 F. App’x 1021, 1034 (Fed. Cir. 2019) (finding that the expert’s “declaration is not conclusory: it cites to several portions of [the prior art reference] to support his statements”) (emphasis omitted)).

Based on the foregoing discussion, we determine that Patent Owner fails to provide a sufficient reason to discount the weight of Dr. Houh’s testimony. As discussed below further, Patent Owner advances similar arguments in its Response and Sur-reply that do not undermine Petitioner’s showing for reasons similar to the reasons addressed above.

C. Claim Construction

In *inter partes* reviews, the Board construes claims using the same claim construction standard employed in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (2020). Under the principles set forth by our reviewing court, the “words of a claim ‘are generally given their ordinary and customary meaning,’” as would have been understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim

language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Petitioner contends that “the terms of the Challenged Claims should be given their plain and ordinary meaning, and no terms require specific construction.” Pet. 15. Patent Owner “agrees with Petitioner that the terms of the challenged claims should be given their plain and ordinary meaning.” PO Resp. 15. Nevertheless, Patent Owner also asserts that “[f]urther discussion regarding the plain meaning of certain claim limitations is pertinent to resolving the parties’ dispute.” *Id.* As determined below, Petitioner shows that the claims would have been obvious even under Patent Owner’s claim constructions.

Patent Owner raises the issue of the meaning of limitation 1.1.2, infer one or more entertainment preferences of a user of the portable media player device based at least in part on the retrieved media, the retrieved information about the media, and a plurality of media content types of the media stored on or accessed by the portable media player device, wherein the plurality of media content types comprises textual media, image media, audio media, and video media.

A similar limitation appears in all the challenged claims via independent claims 1, 10, and 16.⁷ Patent Owner contends that “the plain meaning of this limitation . . . require[s] that the inference of the user’s entertainment preferences be based on all of the recited types of media.” PO

⁷ Claims 10 and 16 are broader than claim 1 with respect to the inferred limitation. For example, claim 10 recites “the [one or more] inferred preferences are based at least in part on the accessed media, media content types of the accessed media *from among a plurality* of media content types.” Claim 16 is materially the same to claim 10 in this aspect.

Resp. 18. That is, Patent Owner’s claim construction requires basing *each* preference inference on all four media types recited in limitation 1.1.2 (i.e., “textual media, image media, audio media, and video media”). *See id.*; Reply 11 (contending that Patent Owner “argues that a particular preference must be inferred from collectively all four media types”).

Petitioner contends it is not necessary to “resolve the controversy” over Patent Owner’s claim construction proposal, because “Sasaki and Ellis already render obvious inferring preferences based on textual media, image media, audio media, and video media.” Reply 6. Petitioner alternatively contends that claim 1 is broad enough such that each “preference[] [is] inferred using only a single media content type,” provided that the claimed system is capable of inferring a preference based on each of the four media types. *See id.* at 11–12 (arguing that “Sasaki’s media player can handle all four media types”).

For purposes of this trial, the plain language of claim 1 and the ’021 patent specification support both parties’ claim constructions, which have somewhat converged during the post-initiation briefing as detailed above. Moreover, as detailed *infra* at § II(E)(4)(ii), we agree with Petitioner that the asserted combination of references teaches the claimed invention even under Patent Owner’s construction. We provide the following discussion to clarify the scope of the contested limitation and address the remaining inconsistencies between the parties.

Claim 1 recites, “infer *one or more* . . . preferences” (emphasis added) which is an alternative recitation; i.e., that there may be one preference or that there may be more than one preference. These “*one or more* entertainment preferences” are “based . . . in part on . . . *a plurality* of media

content types . . . , wherein the plurality of media content types comprises textual media, image media, audio media, and video media.” (Emphasis added). Based on what a “plurality” means, i.e., “more than one,” claim 1 implicitly recites “infer *one or more* entertainment preferences . . . based . . . in part on . . . [more than one] media content types . . . , wherein the [more than one] media content types comprises textual media, image media, audio media, and video media” (emphasis added). Patent Owner’s construction effectively construes “plurality”/“more than one” such that “plurality” means “at least four.” Assuming *arguendo* the ’021 patent specification supports this implicit construction for purposes of this trial, because claim 1 recites “one or more . . . preferences” in the alternative, the scope of claim 1 includes an interpretation in which four preferences are based on the four media types recited in limitation 1.1.2. That is, limitation 1.1.2 under Patent Owner’s proposed construction encompasses the following: “infer [*four*] entertainment preferences . . . based . . . in part on . . . [*four*] media content types . . . , wherein the *four* media content types comprise[] textual media, image media, audio media, and video media.” Therefore, the plain language of claim 1 is broad enough under this “more . . . preferences” alternative such that each of the four preferences is based on one or more of the four media types, because claim 1 broadly requires that four preferences collectively (as a group) are based on at least the four media types recited.

Consequently, the plain language of limitation 1.1.2 supports Petitioner’s proposed claim construction, because Petitioner contends (in the alternative) that limitation 1.1.2 is broad enough such that each preference is based on only one of the four media types. *See* Reply 10–11. Petitioner provides two examples in the ’021 patent specification that support this

broad interpretation. *See id.* at 11. That is Petitioner contends “[i]n each of these examples, only a single media content type is analyzed to infer a particular preference.” *Id.* In support, Petitioner quotes the ’021 patent as stating that a “‘substantial amount of music by famous jazz artists’ indicates a ‘preference for a jazz music genre’ and ‘a significant number of science fiction movies’ indicates a preference for the science fiction film genre.” *Id.* (quoting Ex. 1001, 5:44–48 (“[The server may determine that the user has a preference for a jazz music genre.”); Ex. 1001, 5:52–57 (“The server may also determine that the user has a preference for film genres related to science fiction if a significant number of science fiction movies such as Close Encounters of the Third Kind or Star Wars are stored as video media in or accessed using the portable media player device.”)). These examples support Petitioner’s claim construction for a situation in which there are four preferences being inferred because, as Petitioner argues, they show that the independent claims are broad enough to include inferring one preference per media type for each of the four media types. *See id.*

Patent Owner does not dispute that the examples in the ’021 patent specification describe inferring one preference per media type. *See* Sur-reply 5–6 (discussing the examples). Rather, Patent Owner contends that “[t]he plain language of the clause ‘wherein the plurality of media content types *comprises* textual media, image media, audio media, *and* video media,’ requires that the inference of the user’s entertainment preferences be based on all four of the recited types of media.” *Id.* at 4. Patent Owner is correct that “comprises” “means that (at least) each of the subsequently recited elements must be present.” *Id.*

However, the claim language does not support Patent Owner’s argument under both alternatives outlined above. Claim 1 states that the preferences are based at least in part on a plurality of media content types. Claim 1 does not state that the preferences are *each* based in part on a plurality of media types.⁸ As explained above, “one or *more* . . . preferences” are based on a plurality comprising the four media types, but where there are multiple preferences being inferred, claim 1 does not require each of those preferences to be based on all four of the recited media types. Patent Owner’s claim construction arguments do not address this “or more . . . preferences” language. *See* PO Resp. 6–18; Sur-reply 3–6. Similarly, in addressing Petitioner’s citation to the examples in the ’021 patent specification that support Petitioner’s claim construction, Patent Owner argues that “express limitations” prevent Petitioner’s construction. *See* Sur-reply 5. Again, however, Patent Owner does not address the express claim language, “more . . . preferences.”

Petitioner also shows that Mr. Stillerman’s deposition testimony supports Petitioner’s claim construction. That is, during his deposition, Mr. Stillerman stated that “[i]f we look at the claim in its entirety, as long as the player can handle all four media content types, then inferring a user’s entertainment preferences based on one of those types, the audio type is fine.” Reply 11–12 (emphasis added) (quoting Ex. 1023, 46). As

⁸ Independent claims 10 and 16 do not require this either, stating that the inferred preferences are “based at least in part on . . . media content types . . . from among a plurality of media content types.” Neither party argues that claims 10 and 16 are distinguishable on this point. *See* Tr. 35, 32:11–16 (Patent Owner’s counsel stating that there is “no salient difference between the independent claims”).

determined above, claim 1 and the '021 patent specification support Mr. Stillerman's broad reading of claim 1, based on the alternative "one or more . . . preferences" language.

Patent Owner replies that "the deposition testimony quoted by Petitioner was in direct response to a question about an example in the specification, *not a question about a claim.*" Sur-reply 6 (citing Ex. 1023, 45:15–46:14.⁹ The deposition transcript does not support Patent Owner's Sur-reply arguments. Rather, on page 46 of the deposition transcript, Petitioner questions Mr. Stillerman about "*the claim*" in light of the specification: Q. "*So the claim* specifies inferring a user's entertainment preferences based on content types, which may include audio media. So, for example, if the server determines that the user listens to a lot of jazz music, can the server then infer that the user prefers jazz?" Ex. 1023, 44:21–45:1 (emphasis added).¹⁰ Mr. Stillerman answers "[y]eah," and then quotes the specification starting at column 3, line 44 (an example of a single media type involving jazz music forming the basis for an inferred preference) to support his answer. *See id.* at 45:2–46–4 (discussing two jazz examples and agreeing that a single preference is based on a single media type). Then, the questioning continues, and Mr. Stillerman answers with respect to "the claim in its entirety" as quoted above. *Id.* at 46:10–14. Therefore, contrary to Patent Owner's arguments, the deposition testimony further shows that the '021 patent specification's examples support Petitioner's claim construction wherein the independent claims are broad enough to include inferring one

⁹ Citations here follow the parties' convention and refer to the original page numbers instead of the Bates numbers added by Petitioner.

¹⁰ Petitioner also questions Mr. Stillerman specifically about the claim prior to that. *See id.* at 43:24–44:21.

preference per media type for each of the four media types. *Id.* at 43:24–46:14.

Patent Owner also points to the prosecution history (for the '021 patent and the related '960 patent), arguing that it is “consistent with” with its narrow claim construction. *See* PO Resp. 17. The cited prosecution history does not shed light on the issue at hand, because it simply does not address the “one or more . . . preferences” language discussed above. Rather, the cited prosecution history largely concerns whether the prior art even discloses the claimed four media types. *See* PO Resp. 6–12 (citing Ex. 1002, 30–39, 45–46, 51, 58–59, 65–80, 93, 101, 143–159, 172, 255–260), 12–14 (citing Ex. 2001, 119, 131, 299), 17–18 (citing Ex. 1002, 37, 58–59, 74–75); Sur-reply 5.¹¹ Moreover, the parties rely on the plain language, and Patent Owner does not assert that, during prosecution, the patentee disavowed (narrowed) the plain meaning of the independent claims. *See* PO Resp. 17–18; Sur-reply 5.

Accordingly, limitation 1.1.2, which recites “infer one or more entertainment preferences of a user . . . based at least in part on . . . a plurality of media content types, . . . wherein the plurality of media content types comprises textual media, image media, audio media, and video media” encompasses both parties’ claim constructions. Specifically, Patent Owner’s claim construction relates to the “one” of the alternative “one or more . . . preferences,” so the plain meaning of limitation 1.1.2 requires that each

¹¹ The cited “Board’s decision” concerns the related '960 patent and turns on a claim construction issue and the Examiner’s showing. *See* PO Resp. 14 (quoting Ex. 2001, 299). Patent Owner does not explain its relevance here. *See* PO Resp. 17–18 (discussing prosecution history as it applies to the claim construction here without citing Exhibit 2001).

“inference of the user’s entertainment preferences be based on all four of the recited types of media” as Patent Owner argues. *See* PO Resp. 18. In contrast, Petitioner’s claim construction relates to “more” of the alternative “one or more . . . preferences,” so the plain meaning of limitation 1.1.2 is broad enough so that “each inference of the user’s entertainment preferences is based on one or more of the recited four types of media, wherein the claimed system is capable of providing at least four inferences, with the inferences collectively based on all four types of media claimed.” *See* Reply 11–12 (arguing that “Sasaki’s media player can handle all four media types” and relying on examples in the ’021 patent specification and testimony by Mr. Stillerman, which provides similar language (citing Ex. 1023, 46)).

Patent Owner submits that its claim construction applies to independent claims 10 and 16 based on similar language. PO Resp. 19. The record does not support this argument, because claims 10 and 16 are broader than claim 1. *See supra* notes 7–8. For example, claim 10 recites “the [one or more] inferred preferences are based at least in part on the accessed media, media content types of the accessed media *from among a plurality* of media content types.” Claim 16 is materially similar to claim 10 in this aspect. This “from among a plurality” language allows each “one or more” inferred preference to be based on a single media type “among” the plurality of media types, without requiring the claimed system to be capable of basing four preferences collectively on the four media types.

In any event, as indicated above and as determined below, Petitioner shows that the challenged claims would have been obvious under both parties’ claim constructions. Our construction here differs slightly from that of the Institution Decision, which contemplates that the recited “plurality of

media types” need only be “*two or more*” and not “*all four*.” Inst. Dec. 10–11, 22–23. Based on the briefing by both parties, we now adopt Patent Owner’s position that claim 1 requires all four media content types under one alternative as set forth above. Because this construction was the subject of extended briefing and discussion during oral argument, we determine that both parties have had sufficient notice and opportunity to address this construction. *See* PO Resp. 15–20; Pet. Reply 5 (stating that Patent Owner’s construction would “have no impact on the analysis of the claims against the prior art”); PO Sur-reply 2–11; Paper 35, 8:12–10:11, 27:2–34:23, 54:7–57:4.

No need exists to construe any other claim term expressly to resolve the parties’ disputes. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D.. Principles of Law

Under 35 U.S.C. § 103(a), “[a] patent claim is unpatentable if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (similar language). “[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *KSR*, 550 U.S. at 416 (citing

United States v. Adams, 383 U.S. 39, 50–51 (1966)). The question of obviousness involves resolving underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and when presented (4) objective evidence of non-obviousness (not presented here). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

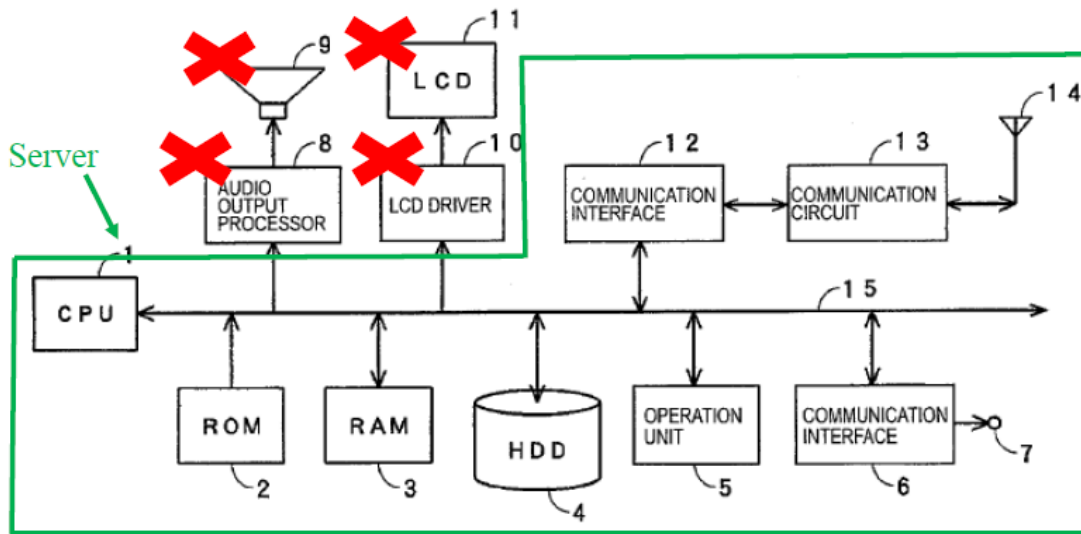
E. Analysis of the Grounds

Petitioner asserts that claims 1, 2, 4, 7–10, 12, 13, 15, and 16 would have been obvious under 35 U.S.C. § 103 based on Sasaki, Ellis, and Jacobi. Pet. 20–60. Pet. 26–37. Patent Owner disagrees. *See generally* PO Resp.

1. Sasaki (Ex. 1004)

Sasaki relates to “[a] content recommendation system includ[ing] first and second communication devices which are connected to each other and in which content recommendation information is transmitted and received between both devices.” Ex. 1004, code (57). In one embodiment (a second embodiment), “content recommendation information is transmitted and received between a server at a service spot and a terminal device.” *Id.* ¶ 112. In both embodiments, terminal devices connect to a server. *Id.* ¶¶ 41, 47, 112. In general, “*the content recommendation system according to the [first and second] embodiment is applicable to a server (first communication device) and a communication device (second communication device)*”. *Id.* ¶ 17 (emphasis added).

Sasaki's Figure 1, as annotated by Petitioner, follows:



As annotated by Petitioner, Figure 1 above illustrates Sasaki's server (green box). *See* Pet. 30. Sasaki's server includes CPU (central processing unit) 1, ROM (read-only memory) 2, RAM (random access memory) 3, HDD (hard disk drive) 4, operation unit 5, communication interfaces 6, 12, communication circuit 13, and antenna 14. *See* Ex. 1004 ¶¶ 29, 112–113.

As indicated above, Sasaki's Abstract generically includes “first and second communication devices” (which includes terminals or servers) and states that its “content recommendation system includes first and second communication devices which are connected to each other and . . . *content recommendation information is transmitted and received between both devices.*” *See* Ex. 1004, code (57) (emphasis added).

2. Ellis (Ex. 1005)

Ellis relates to “[a]n enhanced radio system . . . that provides for the capture and playback of one or more radio stations.” Ex. 1005, code (57). Sources of content include the “Internet and digital satellite radio.” *Id.* ¶ 141. The system recommends content by “monitor[ing] the content

listened to by the user, and automatically determin[ing] the groups liked and disliked by the user.” *Id.* ¶ 212. “Groups may be created by the user, programmer, or advertiser, based on a number of criteria.” *Id.*

“[A] group may be based on type of content, such as grouping all commercials, all songs, etc.” Ex. 1005 ¶ 214. “[A] group may be based on a category of content, such as bluegrass music, alternative rock, or other music genre.” *Id.* “[A] group may be based on a specific performing artist, and may contain all songs performed by that artist.” *Id.* “[A] group may be based [on] a particular radio station, and may contain all content broadcast by that station.” *Id.*

Ellis describes collecting information about a user’s listening habits, e.g., “usage data.” Ex. 1005 ¶¶ 236, 263. Ellis’s system uses a “central facility” for gathering data, including usage data. *Id.* ¶ 236. Basically, the system acquires information about the user’s preferences and selects one or more Internet or other radio stations to recommend to a user. *See id.* ¶ 220. “This may be done, for example, correlating the play list from each station to the list of songs, artists, and genres selected as likes and dislikes by the user, and choosing the closest match or matches.” *Id.* The system may create scores by weighting matches for likes and dislikes:

[A] score may be created for each station by adding a value for each match to a like and subtracting a value for each match to a dislike, with each value weighted by the level of like or dislike specified by the user. A higher value may be added for a music genre match, a lower value for an artist match, and a still lower value may be added for a song match.

Id.

3. *Jacobi (Ex. 1007)*

Jacobi relates to recommendation systems for books, compact discs, videos, authors, artists, etc. Ex. 1007 ¶ 11. The system conveys the recommendations to the users on web pages, emails, or facsimile. *Id.* ¶ 74, Fig. 6.

4. *Claim 1*

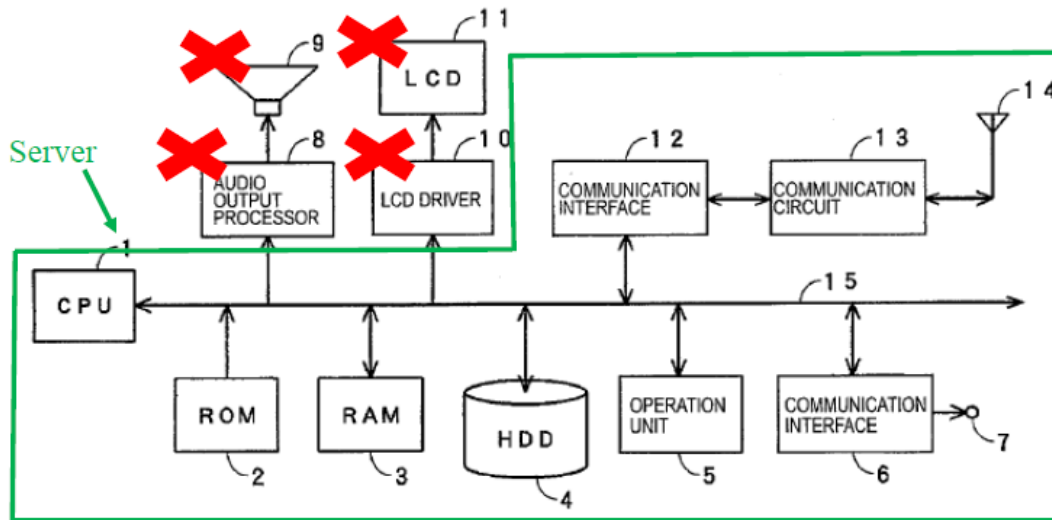
Petitioner asserts that the combined teachings of Sasaki, Ellis, and Jacobi would have rendered independent claim 1 obvious. *See* Pet. 21. Patent Owner disputes Petitioner’s showing, focusing on the inferring and location limitations (1.1.2 and 1.1.3) of claim 1, and the reasons for combining Sasaki and Ellis. *See* PO Resp. 31–44, 47–53.

i. Preamble and limitations 1.1 and 1.1.1

The preamble of claim 1 and limitation 1.1 recites “[1.0] [o]ne or more non-transitory computer-readable media (NTRM) comprising [1.1] instructions written thereon, wherein execution of the instructions by one or more processors of a computer server is to cause the computer server to.”

Petitioner contends that “Sasaki discloses an embodiment with a ‘server . . . and terminal device B,’ wherein “[t]he *server* ‘has a configuration without the audio processor 8, speaker 9, LCD driver 10 and LCD 11 of the terminal device shown in Fig. 1.’” Pet. 30 (quoting Ex. 1004 ¶ 113).

To illustrate Sasaki’s server and its “one or more processors” of limitation 1.1, Petitioner annotates Sasaki’s Figure 1, as follows:



As annotated by Petitioner, Sasaki's Figure 1 above shows Sasaki's server outlined in a green box with red Xs outside the green box to indicate the portions of Sasaki's Figure 1 that are part of Sasaki's terminal but not part of Sasaki's server. Pet. 30 (arguing that "the *server* has a configuration without the audio processor 8, speaker 9, LCD driver 10 and LCD 11 of the terminal device shown in" Fig. 1 (quoting Ex. 1004 ¶ 113)).

Addressing the NTCRM of limitation 1.1, Petitioner contends that Sasaki's server "is controlled by 'CPU 1' that executes 'programs' stored in ROM." Pet. 30 (quoting Ex. 1004 ¶ 30; Ex. 1003 ¶¶ 69–71).

Limitation 1.1.1 recites "computer-readable media . . . instructions . . . to cause the computer server to . . . [1.1.1] control receipt of media or information about the media, the media being stored on a portable media player device or accessed using the portable media player device." Petitioner asserts that Sasaki's CPU 1 controls the server by executing programs stored in ROM, and "Sasaki further discusses that the 'CPU 1 controls the entirety' of the device by 'supplying the control signals.'" Pet. 31 (quoting Ex. 1004 ¶ 30).

Petitioner also asserts that “Sasaki discloses that the server communicates [with a terminal device] using ‘communication interface 12, the communication circuit 13, and the transmitting/receiving antenna 14’ using ‘wireless communications standards.’” Pet. 31 (quoting Ex. 1004 ¶ 41). Petitioner reads the “portable media player device” on Sasaki’s terminal device.¹² See *id.* at 32 (citing Ex. 1004 ¶¶ 21, 113). Petitioner asserts that Sasaki’s “‘terminal device’ is a *portable media player device* because it is ‘portable’ and is for playing ‘various types of content, such as music and images.’” *Id.* (quoting Ex. 1004 ¶ 21).

Petitioner also relies on Sasaki’s disclosure of its recommendation system “collect[ing] information about different media content types, such as ‘music,’ ‘still pictures,’ ‘video,’ and ‘text.’” Pet. 33 (quoting Ex. 1004 ¶ 74). Sasaki describes this media content as “owned by the user of the terminal device.” Ex. 1004 ¶ 74.

Petitioner further asserts that Ellis “discloses that portable media player device accesses music and other content by storing the content on the portable media player device (e.g., ‘download songs’) or by accessing songs over ‘Internet and radio frequency broadcasts.’” Pet. 32–33 (quoting Ex. 1005 ¶¶ 137, 274; citing *id.* ¶ 136). Petitioner also asserts that Ellis discloses “collect[ing] usage data” (involving a user’s listening habits of stored music) at a “central facility,” rather than relying on the user to provide information. *Id.* at 33 (quoting Ex. 1005 ¶ 263; citing Ex. 1005 ¶¶ 263–264). This collected “usage data . . . includes ‘information on radio

¹² Because claim 1 is drawn to computer instructions on an “NTCRM,” the server and portable media device are an “intended use” of the NTCRM instructions such that the NTCRM instructions must be capable of operating on a server in a server/portable media environment as set forth in claim 1.

stations that the user listens to,’ ‘the days and times’ of listening, ‘information on particular songs, commercials, shows, and other content’ that the user heard, and ‘content the user may have skipped over,’ as well as ‘information on enhanced radio features accessed by the user.’” *Id.* (quoting Ex. 1005 ¶¶ 263–264).

Based on its showing as summarized above, Petitioner contends that Sasaki’s server that has a CPU that controls a communication interface that receives user preference information about different media content types, such as music, still pictures, video, and text in view of Ellis’s techniques for gathering usage data about a user’s listening habits and sending that usage data to a central facility, renders obvious . . . limitation [1.1.1].
Pet. 34 (citing Ex. 1003 ¶¶ 74–86).

As discussed further in connection with limitation 1.1.2 below, Petitioner asserts it would have been obvious to implement portions of Ellis’s recommendation system in a server, where Ellis’s system collects usage data at a central facility, in order to enhance Sasaki’s similar recommendation system by automatically determining user’s preferences by monitoring all the content the user consumes in real time and thereby providing updated recommendations. *See* Pet. 25 (citing Ex. 1003 ¶¶ 58–60).

Petitioner’s showing for the preamble (even if it is limiting), limitation 1.1, and limitation 1.1.1, is persuasive. Other than addressing Petitioner’s reasons for combining the teachings of Sasaki and Ellis as discussed further below, and limitations that may overlap with limitation 1.1.2, Patent Owner does not address Petitioner’s showing as to these limitations with particularity. *See generally* PO Resp.

ii. Limitation 1.1.2

Limitation 1.1.2 recites

computer-readable media . . . instructions . . . to cause the computer server to . . . [1.1.2] infer one or more entertainment preferences of a user of the portable media player device based at least in part on the retrieved media, the retrieved information about the media, and a plurality of media content types of the media stored on or accessed by the portable media player device, wherein the plurality of media content types comprises textual media, image media, audio media, and video media.

Petitioner relies partly on its showing with respect to limitation 1.1.1 above, and asserts that the combined teachings of Sasaki and Ellis would have rendered “obvious a server that receives user preference information about different media content types, such as music, still pictures, video, and text that was gathered by monitoring a user’s listening habits on a portable media player device.” Pet. 34.

In addition to its support for limitation 1.1.1 as summarized above, to further support this assertion, Petitioner similarly contends that “Sasaki discloses that its recommendation system collects information about different media content types, such as ‘music,’ ‘still pictures,’ ‘video,’ and ‘text.’” Pet. 35–36 (quoting Ex. 1004 ¶ 74). Petitioner also contends that Sasaki’s server stores “preference information” provided by users. *Id.* at 33 (quoting Ex. 1004 ¶ 126). Petitioner contends the user preference information the server receives is “information about different media content types, such as music, still pictures, video, and text.” *Id.* at 36 (citing Ex. 1003 ¶¶ 87–95).

As also discussed in connection with limitation 1.1.1 above, Petitioner relies on Ellis’s disclosure of a similar recommendation system in which an individual network component and/or a “central facility,” “collect[s] . . .

usage data,’ rather than merely relying on the user to provide information” according to a flow chart in Figure 37. Pet. 33 (quoting Ex.1005 ¶¶ 236, 263 (describing Fig. 37); Ex. 1005, Fig. 37 (step 3740, analyzing information at a central facility). According to Petitioner, the collected usage data includes “‘information on radio stations that the user listens to,’ ‘the days and times’ of listening, ‘information on particular songs, commercials, shows, and other content’ that the user heard, and ‘content the user may have skipped over,’ as well as ‘information on enhanced radio features accessed by the user.’” *Id.* (quoting Ex.1005 ¶¶ 263–264). Petitioner also relies on Ellis’s disclosure of “determining user’s preferences for a []specific group of content[] ‘based on type of content,” wherein “[g]roups of content can include songs, commercials, genre, artist or other criteria.” *Id.* at 33 (quoting Ex. 1005 ¶ 214; citing *id.* ¶ 212).

Petitioner asserts that Ellis discloses several techniques for inferring entertainment preferences of a user as claimed, including media usage information “such as ‘information on particular songs, commercials, shows, and other content’ that the user heard, and ‘content the user may have skipped over.’” Pet. 34 (quoting Ex.1005 ¶ 263). Petitioner points to a specific example as showing that Ellis’s system implements an automatic inferring system by “automatically determin[ing] groups liked and disliked by the user”:

In step 1820, a user may be allowed to rate a group. The user may specify a like or dislike, or a level of like or dislike, for a specific group of content. **The system may also monitor the content listened to by the user, and automatically determine the groups liked and disliked by the user.**

Id. at 35 (quoting Ex. 1005 ¶ 212). Petitioner refers to another example in which “Ellis teaches a technique to ‘determine user preferences

automatically’ (*inferring*) by ‘monitoring what content the user listens to’ in order to find ‘content of interest, i.e., content that matches the user’s preferences.’” *Id.* (quoting Ex. 1005 ¶ 185).

Petitioner provides another example in Ellis, which allots “points” to songs, artists, genres, or other categories of content as part of its technique for automatically inferring a user’s preference:

Ellis teaches “monitoring the content the user listens to” so it can “determine user information automatically,” such as the user’s preference for a genre or grouping: “In step 2220, **the system may determine user information automatically by monitoring the content the user listens to.** For example, **the system may add points to a** specific song, artist, **genre**, or other type of item or **grouping**, based on the user listening to an entire item.”

Pet. 35 (quoting Ex. 1005 ¶ 221).

In general, Petitioner relies on Ellis’s system of determining user preferences for specific content groups “based on type of content,” wherein “[g]roups of content can include songs, commercials, genre, artist or other criteria.” *Id.* (quoting Ex. 1005 ¶ 214; citing *id.* ¶ 212).

Petitioner summarizes as follows:

Thus, Sasaki’s server that receives user preference information about different media content types, such as music, still pictures, video, and text in view of Ellis teachings of automatically determining a user’s preferences about songs, commercials, shows, genres, groupings and other content, by monitoring and tracking a user’s usage information retrieved from a portable media player device, where the usage information is about media on or accessed by a portable media player device, render obvious this limitation.

Pet. 36 (citing Ex. 1003 ¶¶ 87–95).

To further support this summary, Petitioner asserts that Ellis’s recommendation system would have enhanced Sasaki’s similar

recommendation system by monitoring content the user consumes in real time to determine preferences and automatically update recommendation rather than waiting for a user to manually enter preferences. Pet. 25–26 (citing Ex. 1003 ¶¶ 58–60; Ex. 1005 ¶¶ 230, 235). Petitioner also asserts that an artisan of ordinary skill would have found the combination predictable and would have had a reasonable expectation of success based on the similar network recommendation systems where Ellis’s system provides implementation details for Sasaki’s recommendation system. *See id.* at 25–27 (citing Ex. 1004 ¶¶ 7, 115; Ex. 1005 ¶ 212).

In response, Patent Owner contends that Sasaki does not disclose or suggest inferring a user’s entertainment preferences. PO Resp. 31 (citing Ex. 2007 ¶¶ 153–155). Patent Owner also contends that “Ellis teaches determining user preferences based only on a single media type, namely audio media.” *Id.* at 36. Therefore, Patent Owner contends that “[t]he combination of Sasaki and Ellis fails to disclose or suggest inferring a user’s preferences based on textual, image, or video media.” *Id.* at 37. According to Patent Owner, “[t]he combination of Sasaki and Ellis fails to disclose or suggest inferring a user’s preferences based on textual, image, or video media,” because “[n]either Sasaki nor Ellis teaches this key claim element.” *Id.*

Patent Owner acknowledges that the Institution Decision states the Petition “relies on Sasaki for its disclosure of the four media types and relies on the combined teachings of Sasaki and Ellis to infer preferences.” PO Resp. 37. However, Patent Owner contends that the claims are not met by a mere disclosure of four media types; the claims require inferring preferences based on all four media types.” *Id.*

Patent Owner contends that “Petitioner alleges only that ‘Sasaki and Ellis render obvious a server that receives user preference information about different media content types, such as music, still pictures, video, and text that was *gathered by monitoring a user’s listening habits* on a portable media player device.’” PO Resp. 38 (quoting Pet. 34). Therefore, according to Patent Owner, “Petitioner’s arguments fail,” because “Petitioner contends only that the preferences are determined by monitoring listening habits,” but the “claims . . . require that preferences are inferred based on the plurality of media types.” *Id.*

Petitioner agrees that it relies on the combined teachings of Ellis and Sasaki to address the inferring limitation. Reply 1–4. That is, Petitioner contends that “Sasaki and Ellis already render obvious inferring preferences based on ‘textual media, image media, audio media, and video media,’” even if Patent Owner’s claim construction as to the four media types is correct. *See id.* at 6. In other words, Petitioner contends that the combination of Sasaki and Ellis render obvious the disputed inferring limitation under Patent Owner’s narrow claim construction and Petitioner’s broader claim construction. *See supra* § II.C (Claim Construction). For the reasons that follow and based on the summary of Petitioner’s showing as outlined above and further below, Petitioner’s showing is persuasive.

Petitioner explains that Sasaki’s “content recommendation information includes various types of information about content, including ‘CD music, still pictures such as electroph[o]tographs and CG (computer graphics) images, DVD video, and text data such as novels.’” Reply 6–7 (quoting Ex. 1004 ¶ 74; citing Ex. 1004 ¶¶ 45–47, 49). Petitioner also contends that in Sasaki’s system, “various types of media may be stored and

played back on the terminal device, including ‘audio data such as music, and image data such as still images and video.’” *Id.* (quoting Ex. 1004 ¶ 45; citing Ex. 1004 ¶¶ 46, 47 (“[I]n a place such as a location where the user is out, various types of content, such as music and images, can be played back for use.”)).

Turning to Ellis, and tracking its showing in the Petition as outlined above, Petitioner contends that “Ellis teaches inferring user preferences using *audio media* as well as ‘different types of content,’” including “songs” and “commercials.” Reply 6 (quoting Ex. 1005 ¶¶ 214, 230, 263). In other words, even though Ellis teaches a portable audio system, Ellis generally teaches applying its preference system to different types of the stored audio that a user consumes. *See* Pet. 34–36 (noting that Ellis infers preferences by monitoring groups of used content that include songs, commercials, genre, artist, or other criteria (citing Ex. 1005 ¶¶ 212, 214; Ex. 1003 ¶¶ 87–95)).

Based on these teachings, Petitioner summarizes its showing in the Petition and contends that “Ellis describes using content recommendation techniques to monitor the songs and commercials (audio media) the user listens to on the user’s portable device (Sasaki’s terminal device) and, based on what the user listens to, automatically determine the user’s preferences using Sasaki’s server.” *See* Reply 8 (citing Ex. 1003 ¶¶ 94–95) (emphasis omitted). Petitioner also contends that “Ellis’s techniques are applied, using Sasaki’s server, to the textual data, image data, audio data, and video data stored and played on Sasaki’s terminal device.” *Id.* (citing Ex. 1003 ¶¶ 94–95). In other words, “the textual data, image data, audio data, and video data stored and accessed on Sasaki’s terminal device are monitored and the user’s

preferences are automatically determined therefrom, according to Ellis’s techniques.” *Id.* (citing Ex.1003, ¶¶ 94–95).

In support, Dr. Houh testifies in cited paragraph 95 how the combination works by describing the result of the combined teachings:

Sasaki’s server . . . receives user preference information about different media content types, such as music, still pictures, video, and text in view of Ellis teachings automatically determining a user’s preferences about songs, commercials, shows, genres, groupings and other content, by monitoring and tracking a user’s usage information retrieved from a portable media player device, where the usage information is about media on or accessed by a portable media player device.

Ex. 1003 ¶ 95. That is, according to Petitioner, Ellis’s preference inferring techniques include monitoring what types of content a listener accesses and other criteria, including the time of access, skipped-over content, whether a user listens to the whole show, assigning points, likes or dislikes, etc., and several of these techniques (content type, genre, time of access, likes or dislikes, points) readily apply to any type of consumed digital media. *See* Reply 9–10 (showing that Sasaki’s system plays back audio, video, and image data, and displays text-based information, whereas Ellis monitors “the content the user consumes on a portable media device” (citing Ex. 1005 ¶¶ 185, 212, 221, 263; Ex. 1004 ¶¶ 39, 45, 46, 74); Pet. 25–27 (reasons for combining the teachings), 34–36 (showing how Ellis infers preferences by monitoring the different types of content a user consumes).

Petitioner’s showing is persuasive. In summary, Petitioner shows that it would have been obvious to employ Ellis’s monitoring techniques to determine user preferences automatically by employing the available usage information showing what type of content a user consumes, which may include monitoring skipped over content and determining levels of dislike

and like, or other indicators, including by adding points for full length viewing of media to the different types of media that Sasaki's users consume, where both references involve providing preferences of users for suggesting content or other items. *See* Pet. 25–27, 34–36; Reply 9–10 (citing Ex. 1004 ¶¶ 39, 45–46, 74; Ex. 1005 ¶¶ 185, 212, 221, 263; Ex. 1003 ¶¶ 95–96 (citing Ex. 1004 ¶ 74; 1005 ¶¶ 212, 214)).

Apart from asserting Petitioner fails to meet its burden as to why to combine the references (addressed below), Patent Owner's arguments essentially attack the references individually. *See* PO Resp. 37 (contending that “neither Sasaki nor Ellis discloses inferring a user's entertainment preferences based on a plurality of media types”); *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1050 (Fed. Cir. 2019) (arguments individually attacking the references in an obviousness combination are not persuasive) (citing *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.”)). As discussed above, Petitioner relies on Sasaki for its disclosure of providing preferences for, and storing, information about the four media types as listed in claim 1, and relies on the combined teachings of Sasaki and Ellis to infer preferences based on the four media types claimed and disclosed as consumed or downloaded by Sasaki's user. *See* Pet. 32–36 (citing Ex. 1003 ¶¶ 74–95; Ex. 1004 ¶¶ 21, 40, 74, 113, 126; Ex. 1005 ¶¶ 136, 137, 185, 221, 235, 263, 274).

As indicated above, Patent Owner also argues that Petitioner fails to explain “how or why” a person of ordinary skill “would have further modified its proposed combination of Sasaki and Ellis to additionally

include determining a user's preference information based on all four claimed media types." PO Resp. 38. Patent Owner also argues that "Dr. Houh's declaration on this critical element merely repeats almost the identical language from the Petition, with the exception that Dr. Houh's declaration merely adds block quotes from the references." *Id.* at 39 (citing Ex. 1003 ¶¶ 87–95; Pet. 34–36). Therefore, Petitioner contends that "Dr. Houh's testimony is thus entitled to little weight." *Id.* (citing *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, at 15–16 (PTAB August 24, 2022) (precedential) (holding that the Board may not credit declaration testimony that "merely repeats, *verbatim*, the conclusory assertion for which it is offered to support").

Contrary to these arguments, as discussed above (§ II.B) and further below, Dr. Houh's testimony is not conclusory, because as Patent Owner observes, his "declaration . . . adds block quotes from the references." PO Resp. 39. In other words, the references support his cited testimony. *See supra* § II.B; Ex. 1003 ¶¶ 87–95. Moreover, Patent Owner fails to address, let alone undermine, Petitioner's stated reasons for the combination and Dr. Houh's supporting testimony. As Petitioner persuasively explains, "Sasaki's system would benefit from incorporating Ellis's techniques," and "Sasaki's system already teaches providing recommendations based on the user's preferences." Pet. 26 (citing Ex. 1004 ¶ 115). Petitioner persuasively contends that "[b]y implementing Ellis's techniques, Sasaki's server would be able to monitor the content played on the portable terminal device and *automatically* determine the user's preferences, rather than requesting the user provide her own preferences as Sasaki describes." Reply 18 (emphasis added) (citing Pet. 26; Ex. 1003 ¶ 60). As the Petition also persuasively

explains, “[m]onitoring the content that the user consumes and determining the user’s preferences *automatically* [as Ellis teaches] captures the user’s preferences in near real-time, rather than waiting for the user to manually supply her preferences (which she may never do).” Pet. 26 (emphasis added) (citing Ex. 1005 ¶¶ 230, 233; Ex. 1003 ¶¶ 58–60). “A further benefit would be that, as the user’s preferences change over time, Ellis’s technique would update the recommendations to that user accordingly.” *Id.* (citing Ex. 1005 ¶¶ 230, 233; Ex. 1003 ¶¶ 58–60). As indicated above, these reasons for combining the teachings are persuasive. Cited portions of Sasaki and Ellis provide a factual underpinning for this rationale and support Dr. Houh’s credible testimony. *See* Ex. 1003 ¶¶ 44–55 (providing detailed summaries of Sasaki and Ellis), 58–62 (providing reasons for combining Sasaki and Ellis) 74–95 (relying on the teachings of Sasaki and Ellis and describing the relevant result of the combination).

Citing specific teachings in Ellis, Dr. Houh credibly summarizes Sasaki’s system and how Ellis’s system’s techniques collect information about the user’s listening habits, including Sasaki’s hardware components and software that implement the modified technique based on Ellis’s teachings. *See* Ex. 1003 ¶¶ 45–55. Dr. Houh notes that Ellis specifically teaches that its techniques can be implemented in a “network component” and/or a “central facility,” explaining that Sasaki teaches a similar content recommendations system implemented on a server, thereby motivating a person of ordinary skill to turn to Ellis for its implementation details and apply it to Sasaki’s server using known techniques to improve a similar system in the same way. *See id.* ¶¶ 61–62 (citing Ex. 1004 ¶¶ 160, 162, 236). In other words, Petitioner shows persuasively that by acting on all

four media types, Ellis's techniques improve Sasaki's server system because the resulting system captures the user's preferences automatically in real-time based on all manner of usage information, including the four types of media that Sasaki's users access. *See* Pet. 25–27 (citations omitted); Reply 17–18 (citations omitted).

In its Sur-reply Patent Owner contends that the “Petition’s reliance on Sasaki’s [paragraph] 74 for the disclosure of collecting a user’s preference information is inapt,” because “Sasaki’s [paragraph] 74 describes a terminal device collecting preference information of a user to determine what content the user ‘desires to recommend,’ not content recommendations the user may want to receive.” Sur-reply 7 (citing Ex 1004 ¶ 74; PO Resp. 38–39). This argument isolates one paragraph of Sasaki that Petitioner cites in the Reply, ignores the supporting showing in the Petition that relies on other paragraphs in Sasaki, and fails to consider the combined teachings of both references relied upon by Petitioner. In addition, as summarized above, the Reply cites several paragraphs of Sasaki to support its position that Sasaki stores all four preference types. *See* Reply 9–10 (citing Ex. 1004 ¶¶ 39, 45–46, 74 (collectively disclosing all four media types)), 19 ((citing Ex. 1004 ¶¶ 74, 49 (collectively disclosing all four media types))). There is no reasonable dispute that Sasaki’s portable device stores information about various types of content, and Sasaki’s server provides recommendations to the portable device. *See* Ex. 1004 ¶¶ 21, 39, 45–46, 49, 74 112–115; Ex. 1003 ¶ 76 (noting that Sasaki’s terminal device allows a user to “play[] back” “various types of content, such as music and images” (quoting Ex. 1005 ¶ 21)); PO

Resp. 46 (arguing that Sasaki’s “portable device only receives recommendations from the server”).¹³

Further as to the combined teachings, as noted above, the Petition shows that “Sasaki’s system already teaches providing recommendations based on the user’s preferences,” and “Ellis provides enhanced features for a recommendation system, such as monitoring the content accessed by the user to ‘automatically’ determine the user’s preferences.” Pet. 26 (citing Ex. 1004 ¶ 115; Ex. 1005 ¶ 212).¹⁴ As the Petition also shows, Sasaki teaches that its “content recommendation information” applies broadly to “provid[e]

¹³ As discussed in the next section, Patent Owner’s characterization of Sasaki is too limiting. That is, Sasaki’s servers not only receive, but also transmit, content recommendations from terminals. *See* Ex. 1004 ¶¶ 112 (stating that “in a second embodiment of the present invention, *content recommendation information is transmitted and received between a server at a service spot and a terminal device*” (emphasis added), 125 (generally stating “many terminal devices can . . . communicate with a server”), 131 (showing that both embodiments involve collecting recommendation information from many terminal devices), 133 (indicating in both embodiments the transmitting and receiving of content recommendation information). The Petition also quotes Sasaki’s Abstract, which generically refers to “first and second communication devices” (instead of terminals or servers) and describes “content recommendation system includes first and second communication devices which are connected to each other and in which content recommendation information is *transmitted and received between both devices*.” *See* Pet. 22–23 (emphasis omitted) (quoting Ex. 1004, code (57)).

¹⁴ Cited paragraph 115 of Sasaki in the Petition specifically relates to the terminal-to-server embodiment wherein the server provides recommendations that a terminal stores. *See* Ex. 1004 ¶ 115 (“[T]he installed server provides content recommendation information to a user’s terminal device and the terminal device receives and stores the content recommendation information in the HDD 4 of the terminal device.”). *See also* supra note 13.

various types of information concerning information and things which are useful for the terminal device's user." *Id.* at 27 (quoting Ex. 1004 ¶ 141). In other words, Petitioner relies on "Ellis's techniques for automatically determining (infer[ring]) the user's preferences based on the content consumed," which "can be combined with Sasaki's server, rendering obvious a server that can infer one or more entertainment preferences of a user." Reply 8 (emphasis omitted) (citing Ex. 1003 ¶ 90).

Patent Owner characterizes Petitioner's Reply arguments as "recast[ing] its obviousness argument in an attempt to shore up the flawed analysis in the Petition." Sur-reply 8 (citing Reply 8–9). According to Patent Owner, the Reply "asserts that Ellis describes using content recommendation techniques to monitor audio media that the user listens to on Sasaki's portable device, citing Dr. Houh's [paragraph] 90." *Id.* Patent Owner contends that "this argument is not supported by the cited declaration testimony." Sur-reply 8 (citing Ex. 1003 ¶ 90; Reply 8). Patent Owner also contends that "Dr. Houh's declaration does not make this assertion; it simply states an alleged teaching of Ellis: 'Second, Ellis's technique discloses multiple methods to automatically determine (infer) the user's entertainment preferences.'" Sur-reply 8 (citing Ex. 1003 ¶ 90).

Again, Patent Owner's formalistic argument about one cited paragraph (i.e., paragraph 90) ignores the evidence of record and does not dispute Dr. Houh's underlying testimony, which the record supports, that "Ellis's technique discloses multiple methods to automatically determine (*infer*) the user's entertainment preferences." Ex. 1003 ¶ 90. In surrounding paragraphs, Dr. Houh supports this testimony and the Reply argument with citations to Ellis. *See* Ex. 1003 ¶ 88 (testifying about types of content

consumed for inferring preferences in Ellis, such as “information on particular songs, commercials, shows, and other content” that the user heard, and “content the user may have skipped over” (quoting Ex. 1005 ¶ 263)), 91 (testifying that Sasaki’s system adds points to specific songs, genres, and groups for preference inference “based on the user listening to an entire item” and also noting that system “assign[s] additional points if the user rewinds or skips back to the start of an item to hear it in its entirety or to hear it again,” and “the system may subtract points if the user skips over an item” (quoting Ex. 1005 ¶ 221)). In paragraph 89, Dr. Houh refers to its showing with respect to limitation 1.1.1, wherein Dr. Houh testifies that “Ellis automatically determines the groups liked and disliked by the user (inferring one or more entertainment preferences of a user) by monitoring the media content listened to by the user on her portable media player device.” Ex. 1003 ¶ 89 (emphasis omitted).

In addition, as summarized above in analyzing limitations 1.1.1 and 1.1.2 as set forth in the Petition, and without repeating the record unnecessarily, Petitioner shows how the combined teachings render obvious employing Sasaki’s server to infer content automatically using Ellis’s techniques on digital content as collected usage information similarly consumed by Sasaki’s users, digital content that is similar to content consumed by Ellis’s users. *See* Pet. 25–27, 31–36.

In a similar vein, Patent Owner also points to Petitioner’s Reply argument that “Ellis’s techniques are applied, using Sasaki’s server, to the textual data, image data, audio data, and video data stored and played on Sasaki’s terminal device.” Sur-reply 8 (quoting Reply 8; citing Ex. 1003 ¶¶ 94–95). Patent Owner contends paragraphs 94 and 95 of Dr. Houh’s

declaration do not support this argument and it is “not . . . in the Petition.” *Id.* (citing Reply 8; Ex. 1003 ¶¶ 94–94). *Id.* Patent Owner also argues that “[t]here is no discussion of combining the references” in these paragraphs. *Id.*

For reasons similar to those outlined above, Patent Owner’s focus on two isolated cited paragraphs in the Reply ignores the supporting evidence in the Petition, upon which the Reply argument builds. In addressing limitations 1.1.1 and 1.1.2, which supports the above Reply argument, the Petition cites to multiple paragraphs in Sasaki, Ellis, and Dr. Houh to support its showing, including a discussion as to how to combine the references. *See* Pet. 31–36 (citing Ex. 1003 ¶¶ 74–95; Ex. 1004 ¶¶ 21, 74, 126, 113; Ex. 1005 ¶¶ 136, 137, 185, 212, 214, 221, 236, 263, 264, 274). In a materially similar argument to the Reply argument, the Petition states that

Sasaki’s server that has a CPU that controls a communication interface that receives user preference information about different media content types, such as music, still pictures, video, and text in view of Ellis’s techniques for gathering usage data about a user’s listening habits and sending that usage data to a central facility, renders obvious this limitation.

Pet. 34 (citing Ex. 1003 ¶¶ 74–86); *accord* Pet. 36 (similar rationale (citing Ex. 1003 ¶¶ 87–95)).

Patent Owner further alleges that Dr. Houh does not support a materially similar argument in the Reply. Sur-reply 9 (Petitioner also asserts that “the textual data, image data, audio data, and video data stored and accessed on Sasaki’s terminal device are monitored and the user’s preferences are automatically determined therefrom, according to Ellis’s techniques” (quoting Reply 8 (citing Ex. 1003 ¶¶ 94–95))). Patent Owner argues the “Board should not credit Petitioner’s new analysis introduced in

its Reply.” *Id.* Patent Owner contends that “cited paragraphs 94 and 95 of Dr. Houh’s declaration merely list teachings of Sasaki and Ellis and conclude that they render this [inferring] limitation obvious,” but “[t]hey do not provide the explanations of the combination of Sasaki and Ellis” that the Reply advances. *Id.* at 11.

These arguments are also unavailing for reasons similar to the reasons outlined in connection with the Reply arguments addressed above. Contrary to Patent Owner’s arguments, in light of previous testimony particularly describing Sasaki and Ellis and their combined teachings (Ex. 1003 ¶¶ 58–62, 74–94), paragraph 95 of Dr. Houh’s testimony summarizes with sufficient detail how to apply Ellis’s techniques in Sasaki’s server, i.e., “by monitoring and tracking a user’s usage information retrieved from a portable media player device,” wherein the usage information simply involves monitoring usage of all of Sasaki’s media content types according to Ellis’s techniques (*see id.* ¶ 95).

As other examples of allegedly new and unsupported arguments in the Reply “about the combination of Sasaki and Ellis that are absent from the Petition” (Sur-reply 10), Patent Owner quotes the following Reply arguments:

Although Ellis specifically discusses monitoring audio media, a [person of ordinary skill in the art] would understand that Ellis’s content recommendation techniques can be applied to other types of media. . . . For example, a [person of ordinary skill in the art] would understand that the textual, image, audio, and video content stored or consumed on Sasaki’s terminal device may be monitored and the user’s preferences may be determined (infer[red]) based on the monitored content according to Ellis’s techniques. . . . Thus, in combination, Sasaki’s server monitors the textual, image, audio, and video media . . . stored and consumed on Sasaki’s terminal device (portable media player

device) and determine (infer) the user's preferences therefrom according to Ellis's content recommendation techniques.

See Reply 10 (emphasis omitted)(citing Ex. 1003 ¶¶ 94–95; Ex. 1005 ¶ 212); Sur-reply 10 (quoting same three sentences separately; citing Ex. 1003 ¶¶ 94–95). With respect to these Reply arguments, Patent Owner contends that “cited paragraphs 94 and 95 . . . merely list teachings of Sasaki and Ellis . . . [but] [t]hey do not provide the explanations of the combination of Sasaki and Ellis quoted above.” Sur-reply 11.

This contention is not correct. Although Dr. Houh's testimony is not a verbatim repeat of the above quotation in the Reply, it addresses the combination persuasively and supports the showing, especially in light of preceding paragraphs cited above that support the testimony. *See* Ex. 1003 ¶¶ 58–62, 74–94. Even if the above-quoted Reply argument provides more clarifying rationale than the Petition in response to Patent Owner's arguments, the record evidence supports it and it is proper rebuttal. Patent Owner fails to articulate what particular aspects of “the combination” the testimony does not support. *See* Sur-reply 9–11.

Also, for simple issues such as the one at hand in which the disputed limitation recites easily-understood generic functional language, expert testimony is not necessary to support obviousness. *See Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1079 (Fed. Cir. 2015)(holding that “[n]o rule requires . . . an expert [to] guid[e] the [PTAB] as to how it should read prior art,” and PTAB “members, because of expertise, may more often find it easier to understand and soundly explain the teachings and suggestions of prior art without expert assistance”); *VirnetX Inc. v. Apple Inc.*, 665 F. App'x 880, 884 (Fed. Cir. 2016) (citing, *inter alia*, *Beldon*, and holding that “no authority supports th[e] proposition” that “the PTAB must

consider expert testimony,” reasoning that “what the [PTAB] can find without an expert depends on the [complexity of the] prior art involved in a particular case” (last quote quoting *Synopsys, Inc. v. Mentor Graphics Corp.*, 814 F.3d 1309, 1320 (Fed. Cir. 2016) (internal quotation marks, brackets, and citation omitted)). In any event, as indicated above, Dr. Houh’s testimony is credible and supports the thrust of Petitioner’s Reply rationale (which tracks the Petition’s rationale), even if the testimony does not mimic all aspects of the Reply rationale. That is, as outlined above, the record supports Petitioner’s articulated rationale with factual underpinnings based on specific teachings in Sasaki and Ellis relied upon by Dr. Houh and Petitioner.

Finally, Patent Owner acknowledges that the quoted Reply statement above represents “Petitioner’s . . . attempt[] to rebut” Patent Owner’s argument in its “Response that Petitioner provides no explanation of how a POSITA would implement Ellis’s method of determining preferences based only on what a user has listened to in Sasaki’s system to arrive at the claimed invention, which requires inferring preferences based on the plurality of media types.” Sur-reply 9–10. In other words, Patent Owner signals that Petitioner’s Reply arguments are proper, because as Patent Owner states, the Reply arguments address Patent Owner’s claim construction arguments set forth in the Response. Further, as outlined above, the Reply relies on the same references (Sasaki, Ellis) and materially the same teachings as cited in the Petition, at most merely filling in small gaps in response to Patent Owner’s arguments, without shifting the thrust of the Petition. *See* Pet. 25–27, 30–36; Reply 8–11, 17–18.

Based on the foregoing discussion, Petitioner’s rationale for combining the references is persuasive as it is supported by factual underpinnings and the credible testimony of Dr. Houh. Accordingly, Petitioner’s showing for limitation 1.1.2 is persuasive.

iii. Limitation 1.1.3

Limitation 1.1.3 recites “computer-readable media . . . instructions . . . to cause the computer server to . . . access one or more sources of information about venues or events proximal to a current location of the user.” As indicated in connection with limitations 1.1.1 and 1.1.2 above, Petitioner relies on Sasaki’s teaching of *server* in communication with a *portable media player device*. Pet. 36. Petitioner contends that Sasaki teaches transmitting location information (GPS or radio wave positional information) from its portable media player device. *Id.* (citing Ex. 1004 ¶¶ 69, 80, 81). Petitioner contends that this information is “necessary information” and part of the “content recommendation information.” *Id.* at 36–37 (quoting Ex. 1004 ¶ 68).

Petitioner also relies on Ellis’s “technique that uses ‘geographic position information’ to ‘acquire information about local events.’” Pet. 37 (quoting Ex. 1005 ¶¶ 233–234; citing Ex. 1005 ¶ 225 (“use global positioning system monitor 160 to determine the user’s location”)). Petitioner Owner also asserts that Ellis teaches that it “download[s] information about local events and facilities” from a “web site.” *Id.* (quoting Ex. 1005 ¶ 236).

Petitioner explains that it would have been obvious to modify Sasaki’s portable media device and server communication system to include Ellis’s technique of using the user’s geographic location to access information

about events and facilities local to the user in order to obtain local recommendation information automatically. *See* Pet. 26–27 (citing Ex. 1003 ¶¶ 58–62), 37 (citing Ex. 1003 ¶ 99).

Patent Owner responds that “Petitioner’s asserted mapping of Sasaki to the claims impermissibly combines two distinct embodiments of Sasaki, without explaining why a [person of ordinary skill in the art] would have done so.” PO Resp. 40–44. Patent Owner explains that “Petitioner relies primarily on Sasaki’s second server-to-terminal embodiment in mapping Sasaki to the claims.” *Id.* at 41 (citing Pet. 30–33, 56–58). However, according to Patent Owner, “[u]nlike in the terminal-to-terminal embodiment, the terminal device in the server-to-terminal embodiment does not communicate content recommendations or ‘place of transmission’ to the server.” *Id.* at 43 (citing Ex. 1004 ¶¶ 112–130).

Based on these contentions, Patent Owner contends that “Petitioner does not explain why the portable media device would transmit location information to the server in Sasaki’s server-to-terminal embodiment when the portable device is the device receiving, rather than sending, a recommendation.” PO Resp. 43. According to Patent Owner, “the server is described as being located at a ‘service spot,’ *i.e.*, ‘a *predetermined area* in which various types of information are provided to users or members’ such as ‘CD/DVD shops and bookstores [and] sightseeing areas.’” *Id.* at 43–44 (citing Ex. 1004 ¶¶ 113–114). Therefore, Patent Owner contends that “[t]here would be no need for the portable device to transmit its location to the server in this embodiment because the location of the service spot is already known and communication happens only when the terminal

device is close enough to receive an identifying signal from the server.” *Id.* at 44 (citing Ex. 1004 ¶ 54, Fig. 5).

Patent Owner submits that in Sasaki’s first embodiment, the terminal-to-terminal embodiment, “terminal devices transmit content recommendation information to each other, either in a unidirectional or bi-directional manner.” PO Resp. 42–43 (citing Ex. 1004 ¶¶ 59, 84, 100, 103). Patent Owner also submits that “Sasaki teaches that recommendation information sent by one terminal device to another can include the place of transmission.” *Id.* (citing Ex. 1004 ¶¶ 69, 71, 80, 81, Fig. 3B). The record supports this characterization of Sasaki’s terminal-to-terminal embodiment.

In contrast, Patent Owner argues that “[u]nlike in the terminal-to-terminal embodiment, the terminal device in the server-to-terminal embodiment does not communicate content recommendations or ‘place of transmission’ to the server.” PO Resp. 43 (citing Ex. 1004 ¶¶ 112–130). For the reasons outlined below, Sasaki does not support Patent Owner on this point. Based on this unsupported point, Patent Owner argues that Sasaki does not teach a portable device transmitting location information to a server. *Id.* at 48 (citing Ex. 2007 ¶¶ 162–171; Ex. 2009, 162:2–6). Patent Owner similarly contends that “[i]n concluding that the cited art renders [limitation 1.1.3] obvious, Petitioner relies on ‘Sasaki’s server in communication with a portable media player device that directly transmits information representing location information.’” *Id.* (quoting Pet. 37). Patent Owner also argues that “Ellis does not disclose a server that determines the current location of a user or that receives location information from the [Enhanced Radio System (ERS)],” where an ERS is “a portable device that knows its own location.” *Id.* at 47.

In some respects, the arguments outlined above are beyond the scope of claim 1, because claim 1 does not require transmitting location information to a server. *See* Reply 15 (noting that “claim 1 does not recite a limitation requiring that the mobile device transmit the location to a server”).

Rather, limitation 1.1.3 recites “computer-readable media . . . instructions . . . to cause the computer server to . . . [1.1.3] access one or more sources of information about venues or events proximal to a current location of the user.” *See* Pet. Reply 14. This limitation requires the server to access sources of information about venues or events local to the user but it does not require sending location information to a server. Patent Owner agrees that “[c]laim 1 requires the server to access information about venues or events proximal to the current location of the user” and indicates that claim 1 simply requires “the server to infer . . . [the] location of the user or the portable media player device.” *See* PO Resp. 29. Patent Owner otherwise contends that “the location of the service spot is already known and communication happens only when the terminal device is close enough to receive an identifying signal from the server.” *Id.* at 44 (citing Ex. 1004 ¶¶ 54, 113–114). Therefore, Patent Owner concedes that Sasaki’s server knows the current location of the user’s portable terminal device and thereby infers the location of the user of that device.

In any event, contrary to Patent Owners arguments about Sasaki, to the extent claim 1 or any claim requires the server to receive location information or the capability to do so, Sasaki discloses both as explained below. That is, Sasaki does not limit its teachings so that its terminal does not transmit location data to the server. Sasaki generally describes its system as using either terminal A or B with GPS functionality to record the

position of either terminal device in the memory of either device. Ex. 1004 ¶¶ 80–81.¹⁵ As Petitioner shows in connection with the preamble as discussed above, a server includes all the components of a terminal with the exception of audio and LCD display components. Pet. 30 (citing Ex. 1004 ¶ 113). Therefore, Sasaki’s server at least includes the capability to store, receive, and process the same or similar data (e.g., GPS or location data) as Sasaki’s terminals (except for data associated with the excluded audio and visual components that the terminal includes). See Ex. 1004 ¶ 113 (stating that “the server stores a piece of content recommendation information”).

As the Petition shows as outlined above, the only difference between Sasaki’s server and terminal is that “[t]he server ‘has a configuration without the audio processor 8, speaker 9, LCD driver 10 and LCD 11 of the terminal device shown in Fig. 1.’” Pet. 30 (emphasis omitted) (quoting Ex. 1004 ¶ 113; annotating Fig. 1 to show the difference). The Petition also shows that “Sasaki’s server stores ‘preference information’ provided by the members (e.g., users).” *Id.* at 33 (emphasis omitted) (citing Ex. 1004 ¶ 126). In its Reply, Petitioner argues that the portable terminal device in the server-to-terminal embodiment “is similar in configuration” and “has similar functions” (emphasis omitted) to the portable terminal device in the terminal-to-terminal embodiment. Reply 13 (quoting Ex. 1004 ¶¶ 112–113). Quoting paragraph 112, Petitioner also notes that Sasaki states that “in a second embodiment of the present invention, *content recommendation information is transmitted and received between a server at a service spot*

¹⁵ At the cited passages, Sasaki discloses that storing position and location data related to a recommendation is for the convenience of the user and also discloses that several location methods can be used. Ex. 1004 ¶¶ 80–81.

and a terminal device.” Id. (bracketed upper case lettering omitted) (emphasis added) (quoting Ex. 1004 ¶ 112). And as noted above, Petitioner contends that Sasaki’s location information is “necessary information” and sent by the terminal as part of the “content recommendation information.” Pet. 36–37 (quoting Ex. 1004 ¶ 68).

Therefore, the premise of Patent Owner’s arguments about the location information is incorrect. As Petitioner shows, Sasaki’s server receives recommendation information (which includes location information as noted above and discussed further below) from a terminal. *See* Reply 13 (quoting Ex. 1004 ¶ 112). In its Sur-reply, Patent Owner contends that “Petitioner’s argument that the server-to-terminal embodiment is the terminal-to-terminal embodiment, in addition to being untimely raised for the first time in reply, is incorrect.” Sur-reply 12 (citing Reply 13). Patent Owner also repeats its Response argument that “[u]nlike in the terminal-to-terminal embodiment, the terminal device in the server-to-terminal embodiment does not communicate content recommendations or ‘place of transmission’ to the server.” *Id.* (citing Ex. 1004 ¶¶ 112–130).

The record does not support Patent Owner’s arguments for the reasons largely outlined above. The Sur-reply does not address the specific language of paragraph 112 as quoted in the Reply or otherwise undermine the thrust of its disclosure as relied upon by Petitioner. *See* Sur-reply 12–13 (arguing Petitioner is “incorrect” but agreeing that the embodiments have “similar functions” and that recommendation information can include “place of transmission”) (citing Ex. 1004 ¶¶ 112–113)). That is, as found above, Sasaki specifically states that “*content recommendation information is transmitted and received between a server at a service spot and a terminal*

device.” Reply 13 (emphasis added) (quoting Ex. 1004 ¶ 112). Other passages support the finding that Sasaki’s server *receives* recommendation information (and with that, the “necessary” location information (Ex. 1004 ¶ 68)), contrary to Patent Owner’s arguments otherwise, as discussed further below.

With respect to the alleged untimely argument, as outlined above, the Petition essentially alleges and shows that Sasaki’s server only differs from the terminal with respect to the “audio processor 8, speaker 9, LCD driver 10 and LCD 11 of the terminal device shown in Fig. 1.” Pet. 30 (quoting Ex. 1004 ¶ 113; annotating Fig. 1 to show the minor differences in hardware). In addition, the Petition quotes Sasaki as stating that its “content recommendation system includes first and second communication devices which are connected to each other and . . . *content recommendation information is transmitted and received between both devices.*” See Pet. 22–23 (emphasis added) (quoting Ex. 1004, code (57)). This generic description involving “communication devices” includes in its ambit both terminals and servers based on the remaining descriptions in Sasaki.

Accordingly, Petitioner’s Reply arguments simply fill in the gaps to rebut Patent Owner’s arguments about Sasaki’s location information and combining of Sasaki’s embodiments and support the Petition’s initial position that Sasaki’s server and terminal include the same relevant hardware and corresponding overlapping functionality in both embodiments. Contrary to Patent Owner’s related arguments, this similar functionality includes the GPS functionality, which the Petition also relies upon as discussed further below. *Compare* Pet. 36 (relying on Sasaki’s “GPS or radio wave positional information”), *with* Sur-reply 12 (arguing “Petitioner

also now argues [in its Reply] that the portable terminal device in the server-to-terminal embodiment retains the GPS technology”).

Sasaki supports Petitioner’s argument that the two embodiments are similar in material functionality as it relates to issues here. Sasaki specifically states that “[w]hen the terminal devices A and B are close to each other within a predetermined distance, a communication process is automatically initiated between both terminals.” Ex. 1004 ¶ 53. This is just like the communication between Sasaki’s server at the service location that communicates with the terminal, according to Patent Owner’s characterization. *See* PO Resp. 44 (citing Ex. 1004 ¶ 54, Fig. 5) (arguing “[t]here would be no need for the portable device to transmit its location to the server in this embodiment because the location of the service spot is already known and communication happens only when the terminal device is close enough to receive an identifying signal from the server”).

Therefore, Sasaki does not support Patent Owner’s argument that there is no need to transfer location information from the terminal to the server, because in both embodiments, the two devices are close together and communicate with each other. The reason for transmitting the location information is “convenience” so that a user can “facilitate [the] purchase of content” “at a later time or . . . date,” aided by recalling where the information transfer occurred. *See* Ex. 1004 ¶¶ 80 (“When terminal devices A and B have GPS receiving functions as described above, by recording positional information at a transmitting or receiving time in a memory of either terminal device, convenience is obtained when referring to a receiving list.”), 132 (describing that terminals receive content recommendation

information in both embodiments and can display it and play it back to “facilitate purchase of the content” “at a later time or . . . date”).

As Patent Owner recognizes, for the terminal-to-terminal embodiment, Sasaki specifically states that terminal device A transmits “content recommendation information” and that information includes “a place of transmission” (Ex. 1004 ¶ 59), which in turn, may include “GPS information . . . to specify the place of transmission” (*id.* ¶ 69). *Accord id.* ¶ 68 (describing location information as a “necessary” part of the recommendation information). Similarly, for the terminal-to-server embodiment, “the server *stores a piece of content recommendation information*” to determine if it “matches a preference of the member of terminal device B.” *Id.* ¶ 119 (emphasis added). And as found above, Sasaki states that “content recommendation information is transmitted and received between a server at a service spot and a terminal device” (*id.* ¶ 112). Other Sasaki paragraphs describing the second embodiment or both embodiments support this finding. *See id.* ¶¶ 129 (the second embodiment includes “provision of content recommendation information . . . by transmitting a response request from a server and connecting a communication channel with a terminal device which receives the response request to respond to the server”), 130 (“[I]t is also possible to perform updating information in a server by transmitting user’s latest preference information from a terminal device to the server, and providing content recommendation information corresponding to the latest preference information.”), 131 (in both embodiments, “pieces of content recommendation information from many terminal devices can automatically be collected”).

In further support, Sasaki's Abstract generically refers to "first and second communication devices" (instead of terminals or servers) and states that its "content recommendation system includes first and second communication devices which are connected to each other and . . . *content recommendation information is transmitted and received between both devices.*" See Pet. 22–23 (emphasis added) (quoting Ex. 1004, code (57)). As discussed above, this description shows that for all the disclosed "devices" (i.e., servers or terminals), "*content recommendation information is transmitted and received between both devices.*" See Ex. 1004, code (57) (emphasis added). Sasaki further blurs argued distinctions between the embodiments by referring to "the embodiment" and noting that "[c]ontent recommendation information [is] stored in storage means of the server" without limiting what device transmits the recommendation information that the server stores. See *id.* ¶ 17 ("[T]he content recommendation system according to the embodiment is applicable to a server (first communication device) and a communication device (second communication device)"). Also, installing the server at a service spot is merely an "example." *Id.*

In addition, as Petitioner notes, similar to the terminal-to-server embodiment, Sasaki explicitly discloses that each terminal in the terminal-to-terminal embodiment connects to either a terminal or server without limiting the server to a fixed service spot location. See Pet. 49 (citing Ex. 1004 ¶ 41 ("[W]ireless communication can establish connection with a terminal device of the same model, or connection between the terminal device and an external device such as a server through a predetermined network.")). Therefore, as Petitioner shows, Sasaki's terminals and its servers each process, receive, and transmit the same or similar relevant

information and are similar in functionality and structure with respect to issues involved here.

Based on the record and foregoing discussion, contrary to Patent Owner’s arguments, we find that Sasaki discloses, or at least suggests, a terminal device sending content recommendation information, which includes location information as necessary information, to the server. In simple terms, although not necessary to our holding, it appears that, conceptually, the main difference between the two embodiments is that Sasaki’s server is at a fixed location in one example (and contains fewer components than a terminal) in the terminal-to-server embodiment, whereas the terminals (which include server functionality) rove around in the terminal-to-terminal embodiment.

Moreover, even if Sasaki does not explicitly disclose sending location information to a server, Petitioner relies on the combined teachings of Sasaki and Ellis to teach that feature. *See* Pet. 36–37. As summarized above, Petitioner relies on Ellis as disclosing downloading information about local events from a website based on GPS or other location information, to suggest improving Sasaki’s server system by automatically providing real time event recommendations to users from a server based on media types and locations of the user’s devices. *See* Pet. 27, 36–37 (citing Ex. 1005 ¶¶ 225, 233–234, 236); *infra* § III.E.4 (analyzing similar limitation 1.1.4 regarding providing recommendations based on location information).

In particular, Petitioner contends that “Ellis specifically teaches that its techniques can be implemented in a ‘network component’ and/or a ‘central facility,’” with Ellis providing implementation details that an artisan of ordinary skill would have considered employing in Sasaki’s server system

in a predictable manner using known techniques. *See* Pet. 27 (quoting Ex.1005 ¶¶ 162, 236). Petitioner also points to Ellis’s disclosure of a similar recommendation system in which an individual network component and/or a “central facility,” automatically “collect[s] . . . usage data,” rather than merely relying on the user to provide information” according to a flow chart in Figure 37. *See id.* at 33 (quoting Ex.1005 ¶¶ 236, 263 (describing Fig. 37)). At Figure 37, step 3740 indicates that a central facility receives user information and analyzes it (i.e., like a server). And Petitioner contends that each system “provide[s] recommendations based on user preferences and location,” with the combined system beneficially “automatically captur[ing] the user’s preferences in near real-time.” *See id.* at 26–27.

Patent Owner’s argument that “Ellis does not teach a *server* performing this task” attacks the references individually without addressing Petitioner’s contentions that the combined teachings suggest an improvement to Sasaki’s server system for automatically determining preferences while providing location-based recommendations in real-time. *See* PO Resp. 48 (citing Ex. 2007 ¶¶ 172–173). In other words, as explained above, Petitioner contends that the combination of Sasaki and Ellis teaches the server limitation. *See* Pet. 36–37. For example (even if Sasaki’s servers do not receive location information), Petitioner notes that Sasaki generally uses GPS to locate user terminals (Pet. 36 (citing Ex. 1004 ¶¶ 69, 80, 81)), Ellis uses similar GPS teachings to determine a user’s location (*id.* at 37 (citing Ex. 1005 ¶¶ 225, 233–234), and “Ellis further teaches that it ‘download[s] information about local events and facilities’ from a ‘web site’” (*id.* at 37 (quoting Ex.1005 ¶ 236)). Based on these teachings, Ellis’s central facility teachings as outlined above, and the fact that Sasaki at least

suggests that its server is capable of processing all manner of information including GPS information, Petitioner persuasively shows that it would have been obvious to modify Sasaki's communication system to include Ellis's technique of using the user's geographic location to access information about events and facilities local to the user in order to obtain local recommendation information automatically by processing it through a server. *See* Pet. 26–27 (citing Ex. 1003 ¶¶ 58–62), 37 (citing Ex. 1003 ¶ 99).

In summary, Petitioner relies on Sasaki as disclosing processing preference information and other user-related information to provide recommendations in a server and Ellis as teaching the processing of similar information at a central facility, thereby rendering obvious processing at a server different forms of related information including location information to provide updated recommendations based on real time preferences obvious.

Further as to Patent Owner's argument that Petitioner improperly combines aspects of Sasaki's terminal/terminal and terminal/server embodiments by not providing a reason to combine them, as found above, Sasaki generally indicates that aspects of its content recommendation system apply to both embodiments.

Based on the foregoing discussion, Petitioner's showing for limitation 1.1.3 is persuasive.

iv. Limitation 1.1.4

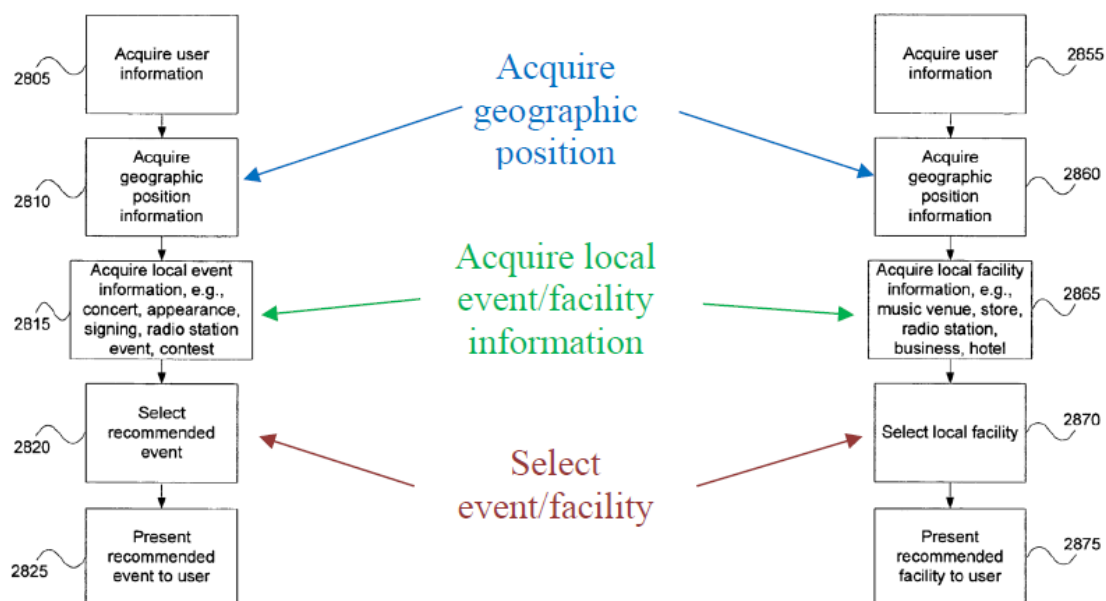
Limitation 1.1.4 recites “identify at least one of said venues or events as being of interest to the user based at least in part on the one or more entertainment preferences inferred by the server and the current location of the user.” Petitioner largely relies on its showing with respect to limitations

1.1.1–1.1.3. *See* Pet. 38. According further to Petitioner, “Ellis discloses that, after acquiring information about local events and facilities, it identifies an event or facility that closely matches the user’s preferences.” *Id.*

Petitioner relies on the following disclosure in Ellis to support this showing:

“In step 2820, the system may select one or more recommended events. Events may be selected by comparing information about each event with user information, and selecting events that most closely match user preferences.” *Id.* (quoting Ex. 1005 ¶¶ 233–234).

Petitioner also relies on the following annotated version of Ellis’s Figure 28A (Pet. 39):



As illustrated above, Petitioner annotates Ellis’s Figure 28A to show how the system acquires geographic position information (blue text, steps 2810, 2880), acquires local event/facility information (green text, steps 2815, 2865), and selects a local event/facility (red text steps 2820, 2870). With further respect to step 2870, Ellis teaches that “[f]acilities may be selected by comparing information about each facility with user information,

and selecting facilities that most closely match user preferences.” Ex. 1005 ¶ 234. Also, “[f]acility information may be acquired using communications device 155” of the ERS to communicate with another device or component. *See id.* ¶ 234, Fig. 1.

Therefore, according to Petitioner, “Sasaki’s server that provides recommendations to the portable media player device in view of Ellis’s technique of identifying events and facilities that are local to the user and that closely match the user’s preferences (as determined by the server) render obvious this limitation.” Pet. 39 (citing Ex. 1003 ¶¶ 102–105). Similar to its showing with respect to limitation 1.1.3, Petitioner contends that implementing Ellis’s teachings to modify the functionality of Sasaki’s server to include location-based recommendations in real time would have improved Sasaki’s system. *See id.* at 26–27 (citing Ex. 1003 ¶¶ 58–62).

Petitioner’s showing for limitation 1.1.4 is persuasive. Other than addressing Petitioner’s reasons for combining the teachings of Sasaki and Ellis, Patent Owner does not address Petitioner’s showing as to limitation 1.1.4 with particularity. *See generally* PO Resp.

v. Limitation 1.1.5

Claim 1 recites “generate a recommendation indicating the identified venue or event as a venue or event of interest to the user.” Building on its showing with respect to limitations 1.1.2–1.1.4 as summarized above, Petitioner contends that it would have been obvious in view of Jacobi to generate the venue or event recommendation of Sasaki and Ellis. *See* Pet. 39–40 (citing Ex. 1003 ¶¶ 106–109; Ex. 1004 ¶ 115; Ex. 1005 ¶¶ 233–234; Ex. 1006 ¶¶ 72, 74).

Petitioner contends that Jacobi teaches generating a recommendation message by creating “one or more Web pages that are returned to the user, with each recommended item being presented as a hypertextual link to the item’s product information page.” Pet. 40 (quoting Ex.1006 ¶ 74). Other examples for a generated recommendation message include use of an “email” or “facsimile.” *Id.* (quoting Ex.1006 ¶ 74).

Petitioner summarizes by explaining that

Sasaki’s server that provides recommendations to the portable media player device in view of Ellis’s technique of identifying events and facilities that closely match a user’s preferences, further in view of Jacobi’s generating a recommendation message (such as creating a web page with links) render obvious this limitation.

Pet. 40 (citing Ex.1003 ¶¶ 106–109).

Petitioner contends that applying Jacobi’s known techniques for generating web pages, emails, and facsimiles to display recommendations to a user would have improved the similar Sasaki-Ellis recommendation system by expanding its communication capabilities and providing details for implementing Sasaki’s display system with a reasonable expectation of success. *See* Pet.27–30 (citing Ex. 1003 ¶¶ 63–68).

Petitioner’s showing for limitations 1.1.5 is persuasive. Other than arguing that Dr. Houh’s testimony is conclusory as to combining Jacobi with Sasaki and Ellis as discussed above (§ II.B.), Patent Owner does not address Petitioner’s showing as to limitation 1.1.5. *See generally* PO Resp.

vi. Limitation 1.1.6

Limitation 1.1.6 recites “control communication of the recommendation to the user.” Relying on its showing for limitation 1.1.5, Petitioner contends that “Sasaki, Ellis and Jacobi teach a server that

generates a recommendation message.” Pet. 40. For example, Petitioner notes that Sasaki’s “server provides content recommendation information to a user’s terminal device.” *Id.* (quoting Ex. 1004 ¶ 115). Petitioner also notes that Jacobi provides several techniques for providing and controlling recommendation messages. *See id.* at 40–41 (citing Ex. 1006 ¶ 74).

Relying on its reasons for combining Jacobi with Sasaki and Ellis (Pet. 28–30), Petitioner contends that “Sasaki’s server that provides a content recommendation to a user’s portable media player device through a communication interface in view of Jacobi’s techniques for communicating a recommendation message to the user renders obvious this limitation.” Pet. 41 (citing Ex. 1003 ¶¶ 110–113).

Petitioner’s showing for limitation 1.1.6 is persuasive. Other than arguing that Dr. Houh’s testimony is conclusory as to combining Jacobi with Sasaki and Ellis as discussed above (§ II.B.), Patent Owner does not address Petitioner’s showing as to limitation 1.1.6. *See generally* PO Resp.

vii. Additional Issues Regarding Reasons to Combine

Petitioner establishes persuasive reasons to combine the references as outlined and summarized above. Nevertheless, Patent Owner argues that “Petitioner fails to establish sufficient motivation to combine Sasaki and Ellis.” PO Resp. 50. Patent Owner contends that Ellis and Sasaki address “distinct problems”: “Ellis applies to radio content only,” and “Sasaki relates to content recommendations regarding various types of non-radio data.” *Id.* (citing Ex. 2007 ¶¶ 133–134). According further to Patent Owner, “Ellis discusses certain advancements in television viewing functionality.” *Id.* at 51 (citing Ex. 1005 ¶ 5 (“Personal video recorders, such as those

manufactured by TiVo, allow a user to easily record a television program, and also provide VCR-like controls for television programs.”)); Ex. 2007 ¶¶ 138–140). Patent Owner also points to Ellis’s teaching that “[r]adio listeners typically have different needs than television viewers.” *Id.* at 52 (quoting Ex. 1005 ¶ 6). Patent Owner contends that “Ellis also identifies technological reasons why improving video and radio consumption requires different approaches,” including less memory storage requirements and cost for the latter. *Id.* at 52 (citing Ex. 1005 ¶ 10). Patent Owner points to other differences between the two reference disclosures, including for example that Sasaki and Ellis receive content in different manners, and Patent Owner also contends that “technological reasons,” such as relative costs based on higher digital storage requirements and tuners in radios versus televisions, prohibit the combination. *See id.* at 50–53.

The arguments do not undermine Petitioner’s above-summarized reasons for combining the references. With respect to alleged differences in the references, different references combined for obviousness necessarily include differences. Petitioner persuasively shows that Ellis and Sasaki are in the same field of endeavor and consequently are analogous art. *See* PO Pet. 25–26 (“The field of endeavor of the ’021 patent is ‘venue or event recommendations for a user of a portable media player device.’” (quoting Ex. 1001, 1:19–20)), 26 (“Sasaki is analogous art because it relates to ‘interests and preference tendencies of the users, for each user, content that matches the user’s interest and preference is selected and recommended.’” (quoting Ex. 1004 ¶ 7). “Ellis is analogous art because it relates to ‘recommend[ing] local events and facilities to a listener.’”)

(quoting Ex.1005 ¶ 22)). Patent Owner’s arguments do not undermine this analogous art showing.

Rather, Patent Owner’s arguments asserting that alleged differences between Ellis and Sasaki preclude combining teachings thereof amount to an unsupported attempt to heighten the legal requirements for combining analogous art. The record does not show that any alleged differences place Ellis and Sasaki in different fields of endeavor such that an artisan of ordinary skill would not rely on, or turn to, Ellis’s teachings. Patent Owner’s generic allegations also do not allege that any differences between the references show that the references as combined by Petitioner fail to meet any specific claim limitation. *See* PO Resp. 50–53.

In any event, to the extent the arguments are relevant to a claim limitation at issue, both recommendation systems handle different media in digital format and address similar problems, as Petitioner argues and as outlined above in analyzing Petitioner’s showing for claim 1. *See* Reply 19; Pet. 25–27 (providing reasons to combine the references including their similarities). For example, Petitioner shows that “Sasaki’s content includes ‘CD music, still pictures such as electroph[o]tographs and CG (computer graphics) images, DVD video, and text data such as novels.’” Reply 19 ((alteration in original) quoting Ex. 1004 ¶ 74; citing *id.* ¶ 49). Petitioner further shows that “there is at least overlap with respect to music (e.g., ‘songs’ from Ellis and ‘music’ from Sasaki).” *Id.* And, “more generally, Sasaki and Ellis both pertain to digital content.” *Id.* (citing Ex.1004 ¶¶ 45, 46, 140; Ex. 1005 ¶¶ 2, 27, 143). “Additionally both Sasaki and Ellis describe providing recommendations based on content consumed using the same technology, e.g., portable media player devices (Sasaki’s terminal

device and Ellis’s ERS).” *Id.* (citing Ex.1004 ¶¶ 17, 21; Ex.1005, ¶¶ 42, 156, 212). In other words, as Petitioner shows, “Sasaki and Ellis are addressing the same problem: analyzing a user’s preferences with respect to content consumed on a portable media player device.” *Id.* (citing Ex. 1003 ¶ 61).

The record supports Petitioner’s showing in this regard. For example, as summarized above with respect to claim 1, Petitioner shows persuasively that Sasaki and Ellis address similar problems associated with providing recommendations to users of digital media in portable devices for all types of events. *See, e.g.*, Ex.1004 ¶¶ 74, 114 (disclosing a recommendation system that collects information about different media content types, such as music, still pictures, video, and text to provide recommendations to guide purchases at facilities such as CD/DVD shops and bookstores, sightseeing areas, attraction places, art museums, museums, movie theaters, coffee shops, hotel lobbies, and other public facilities); Ex. 1005 ¶¶ 7, 15–17, 57, 162 (describing a system for controlling audio or other digital content data or software (including from radio stations or the Internet) and providing recommendations for music, shopping for music, concert venues, radio station events, etc.); Reply 19–22 (summarizing reasons outlined in the Petition for the combination).

Patent Owner’s contention that Ellis’s users receive content wirelessly and Sasaki’s users upload purchased content also fails to undermine Petitioner’s showing. *See* PO Resp. 51. As Petitioner argues, “the proposed combination relies on Ellis’s techniques for automatically determining the user’s preferences by monitoring as the content is *consumed* by the user—

[Patent Owner]’s argument about the manner in which content is *delivered* to the mobile device is therefore irrelevant.” Reply 20.

Patent Owner’s argument that “[t]he device of Ellis would require a number of antennas and related components that would not be feasible to include in a device with the extended storage and display requirements of Sasaki’s terminal,” is also unavailing, as are Patent Owner’s related arguments about storage and tuners. *See* PO Resp. 51 (citing Ex. 2007 ¶¶ 137–140), 52 (citing storage requirements and tuners). At the cited passages, Mr. Stillerman testifies that a trade-off existed between a portable device’s storage capacity and the number of ways it receives media content, for example, the number of antennas or other receiving ports for AM, FM, Internet, cable, and satellite transmissions. *See* Ex. 2007 ¶¶ 133–134. Therefore, according to Dr. Stillerman, because Sasaki’s portable device requires more storage to store video and audio content than Ellis’s portable device, this limits the number of antennas or receiving ports for receiving media content in Sasaki’s device. *See id.* ¶ 134.

This line of argument as to what is “feasible” based on alleged antenna requirements amounts to an attempt to assert a teaching away by Ellis, which is unavailing because the arguments are not commensurate in scope with the challenged claims. Specifically, the challenged claims do not require a minimal amount of video data or audio data for storage or a specific minimal number of antennas or receiving means. *See Idemitsu Kosan Co., Ltd., v. SFC Co., Ltd.*, 870 F.3d 1376, 1381 (Fed. Cir. 2017) (“Idemitsu’s teaching away argument is of questionable relevance anyway. Evidence concerning whether the prior art teaches away from a given

invention must relate to and be commensurate in scope with the ultimate claims at issue.”).

Moreover, as Petitioner notes, Patent Owner’s arguments reduce to an improper requirement for a bodily incorporation of Ellis’s discussion of television components or other embodiments into Sasaki’s portable media player, and do not address the combination as asserted by Petitioner. *See* Reply 20–21 (citing Pet. 26 (“Sasaki’s system would benefit from incorporating Ellis’s techniques”)). In addition, contrary to the testimony of Mr. Stillerman, “portable devices with storage sufficient for both audio and video content that were also capable of receiving media content in a variety of ways were well-known,” as Sasaki shows. Reply 21 (noting that “Sasaki . . . teaches that its terminal already includes ‘a hard disk drive (HDD) 4,’ a ‘liquid crystal display,’ and an ‘antenna’” (quoting Ex. 1005 ¶ 29), and “[t]he antenna ‘can be configured to use various wireless communication standards’” (quoting Ex. 1005 ¶ 41)). Petitioner also points out that “[M]r. Stillerman confirmed that the device described in Sasaki received audio and video via its antenna.” *Id.* (citing Ex. 1023, 52–55). In addition, Petitioner cites the “iPhone by Apple, Inc.” as including “storage and playback of audio, video, and text data and antennas for communicating via a cellular connection or Wi-Fi.” *Id.* (citing Ex. 1022) (omitted footnote asserting that “[t]he iPhone was publicly announced on January 9, 2007, which is six months before June 22, 2007, the earliest priority date of the ’021 patent” (citing Ex. 1024)).

Patent Owner contends that “although the iPhone was purportedly announced in January 2007, Petitioner provides no evidence of the actual iPhone launch date to prove it was launched prior to the June 22, 2007 filing

of the provisional application.” Sur-reply 20–21. Contrary to the premise of this argument, there is no requirement that prior art must show a launch date or actual release of a product on the market. In any event, the iPhone evidence is not necessary to our finding because it is merely cumulative to the evidence based on Sasaki’s portable device.

Therefore, Petitioner shows that even if trade-offs existed between the number of antennas or other receiving ports or mechanisms and storage capacity, and even if the trade-offs are relevant to the challenged claims, an artisan of ordinary skill readily could and would have considered and applied the trade-offs depending on the intended application.

It is not clear why Patent Owner points to Ellis’s comparison of radio to television. *See* PO Resp. 51; Reply 22 (arguing that “the discussion of radio and television content in Ellis is irrelevant to the Sasaki-Ellis combination” because Sasaki “is not limited to television content”). In its Sur-reply, Patent Owner argues that “Ellis’s discussion of television content encompasses digital video like that described in Sasaki,” and “Ellis’s distinction of audio and video content consumption teaches away from combining Sasaki and Ellis.” Sur-reply 21 (citing Ex. 2007 ¶¶ 134–137). Contrary to these arguments, according to Patent Owner, Ellis describes “patented advancements in television viewing” that are “irrelevant to radio.” PO Resp. 51. Describing *advancements* in television according to Ellis, even if they somehow apply to Sasaki’s video usage, does not teach away from implementing Ellis’s preference techniques on Sasaki’s stored video (e.g., determining the amount of time the user watches video, the category of the video, determining relative likes or dislikes, or adding or subtracting points based on full or partial viewing). In addition, Sasaki’s video storage

requirements are not necessarily as storage intensive as a typical television show, and the challenged claims do not specify a minimal video clip storage capacity. Therefore, even if we construe Patent Owner's arguments as asserting that Ellis somehow teaches away from applying its preference technique to long television shows (it does not), the argument is not commensurate in scope with the challenged claims (or with Sasaki's video storage requirements). *See* PO Resp. 51–52 (describing how television viewers typically view a show to completion and other differences between radio and television viewing); *Idemitsu*, 870 F.3d at 1381 (“Idemitsu’s teaching away argument is of questionable relevance . . . [because] [e]vidence concerning whether the prior art teaches away from a given invention must relate to and be commensurate in scope with the ultimate claims at issue.”)).

In addition, Sasaki's digital system handles video viewing and storage and all manner of digital media types without specific mention of a tuner, so it is not clear how a television tuner or costs thereof as described in Ellis relates to a requirement for, or a teaching away from, modifying Sasaki's system based on Ellis's techniques. *See* Ex. 1004, Fig. 1 (illustrating system components of Sasaki's terminal). In short, nothing identified by Patent Owner in Ellis teaches away from applying its inferring preference techniques to Sasaki's video or any of its digital media types consumed by a user.

Based on the foregoing discussion, as summarized above in connection with limitations 1.1.1 and 1.1.2, Petitioner's reasons for combining the references, for example, providing *automatic* preference recommendations in Sasaki's system based on digital consumption of all its

different media in real time, with the references addressing similar problems and the combined teachings implementing predictable changes using known techniques, are persuasive. *See, e.g.*, Pet. 25–27, 35 (relying on Ellis’s teaching that “[t]he system may also determine user preferences automatically by monitoring what content the user listens to,” by “[f]or example, . . . add[ing] points to a specific song, artist, genre, or other type of item or grouping, based on the user listening to an entire item” (quoting Ex. 1005 ¶¶ 185, 221) (emphasis omitted)).

Petitioner also shows that a person of ordinary skill would have found it obvious to apply Ellis’s teachings to Sasaki because the combination would use known techniques (Ellis’s implementation details of a recommendation system) to improve a similar system (Sasaki’s recommendation system) in the same way (providing recommendations to a portable media player device with respect to a plurality of media content types and locations).

Pet. 27 (citing Ex. 1003 ¶¶ 58–62); *accord* Reply 17 (citing Pet. 25–27; Ex. 1003 ¶ 62). Accordingly, Petitioner also shows that Ellis’s known technique would improve Sasaki’s similar recommendation system in the same way by providing automatic preferences based on each media type consumed by Sasaki’s user. *See KSR*, 550 U.S. at 401 (“If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond that person’s skill.”); Reply 17 (citing Ex. 1003 ¶ 62). As Petitioner also explains, providing automatic preferences using Ellis’s techniques by monitoring all the content played on Sasaki’s terminal captures the changes in user’s preferences over time. *See* Reply 17–18 (citing Pet. 25–27; Ex. 1003 ¶ 60).

x. Summary

Petitioner shows by a preponderance of evidence that an artisan of ordinary skill would have had a reasonable expectation of success in combining the teachings of Sasaki, Ellis, and Jacobi to arrive at claim 1, rendering it obvious.

5. Claims 7 and 8

Claim 8 depends from claim 7, which depends from claim 1. Petitioner relies partly on its showing with respect to claim 1, and provides citations to Sasaki, Ellis, and Jacobi supported by the testimony of Dr. Houh. Pet. 43–45. Petitioner’s mapping of claims 7 and 8 to Sasaki, Ellis, and Jacobi, coupled with its reasons to modify Sasaki’s teachings, and its showing of a reasonable expectation of success, is persuasive. *See* Pet. 43–45. Patent Owner does not address claims 7 and 8 separately. *See generally* PO Resp. Based on the record, we determine that Petitioner shows by a preponderance of evidence that claims 7 and 8 would have been obvious.

6. Claims 10, 12, 13, and 15

Claims 12, 13, and 15 depend from independent claim 10. Petitioner relies partly on its showing with respect to claim 1, including reasons for combining the references’ teachings, and provides citations to Sasaki, Ellis, and Jacobi and the testimony of Dr. Houh to address the limitations of claims 10, 12, 13 and 15. *See* Pet. 46–56. Patent Owner challenges Petitioner’s showing as to limitation 10.3. PO Resp. 44–46.

The preamble of claim 10 and limitation 10.3 follow:

[10.0] One or more non-transitory computer-readable media (NTRM) comprising instructions that, when executed by one or more processors of a portable media player device, cause the portable media player device to:

....
[10.3] control transmission, to the server, of location information associated with the portable media player device to facilitate the server in inferring a current location of a user of the portable media player device.

Limitation 10.3 is similar to limitation 1.1.3 for purposes of this trial. As quoted above, limitation 10.3 is from the perspective of an NTRCM operating “when executed” on a “portable media . . . device” that “control[s] transmission, to the server, of location information associated with the portable media player device to facilitate the server in inferring a current location of a user of the portable media player device.”

Petitioner primarily relies on its showing for claim 1.1.3 to address limitation 10.3. In turn, Patent Owner relies on its unavailing arguments addressed above in connection with limitation 1.1.3, namely, the arguments centered on the unsupported allegation that Sasaki’s “portable device only receives recommendations from the server,” such that “Sasaki does not teach a portable media player device that sends location information to a server.” *See* PO Resp. 46–47 (citing Ex. 1004 ¶¶ 112–130; Ex. 2007 ¶¶ 210–211; Ex. 2009, 162:2–6).

As found above in the analysis of limitation 1.1.3, Sasaki does not support Patent Owner’s arguments. As found above, Sasaki at least implies or suggests, if not explicitly discloses, that the terminals send location information to the server in the terminal-to-server embodiment. *See supra* § II.E.4.iii. As also summarized above, even if Sasaki does not explicitly disclose sending location information to the server, Petitioner relies on the combined teachings of Sasaki and Ellis to show that it would have been obvious to “control transmission, to the server, of location information

associated with the portable media player device to facilitate the server in inferring a current location of a user of the portable media player device,” as limitation 10.3 recites. As set forth and summarized in the context of similar location limitations in claims 1 and 4 above, Petitioner explains that it would have been obvious to modify Sasaki’s communication system to include Ellis’s technique of using the user’s geographic location to access information about events and facilities local to the user in order to determine and transmit local recommendation information automatically by the server to a terminal. *See* Pet. 26–27 (providing reasons for the combination (citing Ex. 1003 ¶¶ 58–62)), 36–37 (addressing limitation 1.1.3), 42–43 (addressing similar location limitation in claim 4 and asserting it would have been obvious to implement Ellis’s techniques in Sasaki’s server for the same reasons as claim 1). As also set forth above in connection with claim 1, Petitioner shows that Sasaki’s server already processes similar user content information and selects recommendations based on preferences at its server.

Moreover, there is no dispute on this record that Sasaki’s terminals send location information to a terminal. Therefore, Sasaki’s terminals at least have the capability of sending the same location information to a server to facilitate the server in inferring location, because servers and terminals have the same functionality in Sasaki as Petitioner generally shows. *See* Pet. 30 (showing that Sasaki discloses that “[t]he *server* ‘has a configuration without the audio processor 8, speaker 9, LCD driver 10 and LCD 11 of the terminal device shown in Fig. 1’” (quoting Ex. 1004 ¶ 113)); Reply 13–14 (arguing that “the terminal retains the GPS and other location technology in the server-to-terminal embodiment” (citing Ex. 1004 ¶¶ 112–113)).

Claim 10 does not specify any functionality for the server, because it specifies that the NTCRM “when executed” on “a portable media player device,” “control transmission, to the server, of location information associated with the portable media player device to facilitate the server” to infer the user’s location. That is, the claimed NTCRM is executable on the portable media player device to send location information to a server, which in turn, facilitates the server in inferring location of the user. Here, there is no dispute that terminals in Sasaki’s terminal-to-terminal embodiment are configured to satisfy the location inference limitation via GPS functionality. It follows that Sasaki’s servers possess the same functionality in the terminal-to-server embodiment, because apart from the above-noted immaterial terminal components, they have the same *structure* (and corresponding functionality). In any event, for the reasons discussed above with respect to limitation 1.1.3., Petitioner persuasively shows that Sasaki discloses a terminal sending GPS location information to a server and that the combination of Sasaki and Ellis teaches limitation 10.3 even if Sasaki does not explicitly disclose sending location information to a server.¹⁶

Patent Owner also notes that “[i]n the Institution Decision, the Board stated that ‘Sasaki’s server at least implicitly determines the location of the user’s portable media device by communicating with it (i.e., determining that a specific user is local to, or in the vicinity of, the server).’” PO Resp. 46 (quoting Inst. Dec. 29). Patent Owner argues that “this is insufficient to

¹⁶ In our view, the perceptive focus of the Dissent advances specific arguments related to the location information not raised by Patent Owner based on treating the references individually, and without considering the collective teachings as advanced in the Petition (and as gap-filled in the Reply to address the Response).

meet the language of the claim 10,” because claim 10 “requires that ‘the portable media device . . . control[s] transmission, to the server, of location information.’” PO Resp. 46. Based on our holding above that Sasaki discloses sending location information to a server, and alternatively, that the combined teachings of Sasaki and Ellis render that feature obvious, there is no need to reach this separate issue with respect to whether implicitly determining location also satisfies limitation 10.3.

Based on the foregoing discussion, we determine that Petitioner’s showing for limitation 10.3 is persuasive.

As indicated above, Petitioner relies partly on its showing with respect to claim 1, and provides citations to Sasaki, Ellis, and Jacobi supported by the testimony of Dr. Houh, to reach the remaining limitations of claim 10, and claims 12, 13, and 15. Pet. 46–56. Petitioner’s mapping of these limitations and claims to Sasaki, Ellis, and Jacobi, coupled with its reasons to modify Sasaki’s teachings, and its showing of a reasonable expectation of success, is persuasive. *See id.*

Accordingly, based on the record and foregoing discussion, we determine that Petitioner shows by a preponderance of evidence that claims 10, 12, 13, and 15 would have been obvious.

7. Claim 16

Petitioner primarily relies on its showing with respect to claim 1 to address claim 16. *See* Pet. 56–60. For purposes of this trial, claim 16 is similar to claim 1. Patent Owner challenges Petitioner’s showing as to limitation 16.2. PO Resp. 49–50.

The preamble of claim 16 and limitations 16.1, 16.2, and 16.2.2 recite the following:

[16.0] A computer server to provide location and preference based venue or event recommendations, the computer server comprising:

[16.1] a communications interface . . . ; and

[16.2] one or more processors communicatively coupled with the communication interface, the one or more processors to:

. . . .

[16.2.2] infer a current location of the user of the portable media player device based on obtained location information associated with the portable media player device.

Limitation 16.2.2 is similar to limitation 1.1.3 and 10.3 for purposes of this trial. Claim 16 is from the perspective of a server, as is claim 1.

Petitioner primarily relies on its showing for claim 4, which amounts to relying on its showing for limitation 1.1.3. Pet. 42–43, 57. In turn, Patent Owner relies on its unavailing arguments addressed above in connection with limitation 1.1.3, namely, the arguments centered on the unsupported allegation that “Sasaki does not teach a portable device transmitting location information to a server,” and “Sasaki does not teach a server obtaining the location of a portable media player device through any other technique either.” See PO Resp. 49–50 (citing Ex. 2007 ¶¶ 222–223; Ex. 2009, 162:2–6).

For similar reasons to those discussed above in connection with limitations 1.1.3 and 10.3, Petitioner’s showing for limitation 16.2.2 is persuasive.

As indicated above, to reach the other limitations of claim 16, Petitioner relies primarily on its showing with respect to claim 1, providing

citations to Sasaki, Ellis, and Jacobi supported by the testimony of Dr. Houh. Pet. 56–60. Petitioner’s mapping of claim 16 to Sasaki, Ellis, and Jacobi, coupled with its reasons to modify Sasaki’s teachings, and its showing of a reasonable expectation of success, is persuasive. *See id.*

Accordingly, based on the record and foregoing discussion, we determine that Petitioner shows by a preponderance of evidence that claim 16 would have been obvious.

8. Claim 2

Claim 2 recites “[t]he one or more NTCRM of claim 1, wherein the audio media comprises music media and podcast media.” Relying on its showing for limitation 1.1.1, Petitioner contends that “Sasaki teaches programs in ROM to control a server” and “discloses that its recommendation system collects information from about different media content types, such as ‘music,’ ‘still pictures,’ ‘video,’ and ‘text.’” Pet. 41 (quoting Ex. 1004 ¶ 74).

Similar to its showing for claim 1, Petitioner cites Ellis as disclosing “several techniques for inferring the entertainment preferences of a user of a portable media player device based on media usage information (such as ‘information on particular songs, commercials, shows, and other content’ that the user heard, and ‘content the user may have skipped over’).” Pet. 41 (quoting Ex. 1005 ¶ 263). Petitioner also asserts that “the user’s media usage information includes the user’s liked groups and ‘a group may be based on a specific radio show.’” *Id.* (quoting Ex. 1005 ¶ 214).

Based on these teachings, Petitioner contends that a person of ordinary skill in the art “would recognize that a radio show broadcast via the internet, as disclosed in Ellis, corresponds to a podcast media.” Pet. 41–42

(citing Ex.1003 ¶ 115; Ex. 1010 ¶ 2) (“A podcast is a digital recording of a radio broadcast or similar programme, made available on the Internet in a number of separate files for downloading to a personal audio player.”); Ex.1009 ¶ 35). Accordingly, Petitioner asserts that “Sasaki’s server that collects usages information about music in view of Ellis’s teaching of determining user preferences for media that includes music and a radio show broadcast on the internet and renders obvious this limitation.” *Id.* at 42 (citing Ex.1003 ¶¶ 114–116).

Patent Owner contends that “Petitioner does not show that the combination of Sasaki and Ellis teaches inferring user preferences based on ‘podcast media.’” PO Resp. 54 (citing Ex. 2007 ¶¶ 48–55, 175–179). Relying on Petitioner’s citation of Lim to describe a podcast (Ex. 1010 ¶¶ 2, 4), Patent Owner contends that a podcast is not an Internet radio show because the latter “is not delivered in a file that can be stored in the directory of a portable device.” *Id.* at 54–55 (citing Ex. 1010 ¶¶ 2, 4). Patent Owner also argues that “none of passages of Ellis cited by Petitioner for claim 2 discuss broadcasting radio shows over the Internet” (*id.* at 54), and in addition, “neither the Petition nor Dr. Houh’s declaration provide any discussion for why a radio broadcast over the Internet would render obvious a podcast.” *Id.* at 55 (citing Ex. 2007 ¶ 178). Patent Owner also contends that “Dr. Houh’s testimony simply repeats the language from the Petition without additional explanation and is entitled to little or no weight.” *Id.* (comparing Pet. 41–42, *with* Ex. 1003 ¶¶ 114–116).

Patent Owner’s arguments are unavailing. Dr. Houh’s testimony relies on citations to the prior art of record and is therefore credible and supported. Dr. Houh’s testimony is not conclusory as it relies on citations to

Ellis, Sasaki, Jellison, and Lim. Ex. 1003 ¶¶ 114–116 (citing Ex. 1004 ¶ 74; Ex. 1005 ¶¶ 214, 263; Ex. 1010 ¶ 2 (quoted above); Ex. 1009 ¶ 35 (“It may be desired to publish a portion of the radio program as a podcast.”)).

As Petitioner argues, Ellis generally teaches that one source of content is an “Internet . . . broadcast” (Reply 22 (quoting Ex. 1005 ¶ 274)), and Ellis teaches determining user preferences based on “a specific radio show” (*id.* (quoting Ex. 1005 ¶ 214; citing *id.* ¶ 221)). Petitioner also points out that Ellis allows a user to “download audio content.” *Id.* (quoting Ex. 1005 ¶ 179). Petitioner also notes that Sasaki teaches downloading and storing a wide variety of audio data. *Id.* (citing Ex. 1004 ¶¶ 45–46).

Based on these teachings, as Petitioner also argues, “a [person of ordinary skill in the art] would recognize that Ellis’s radio show that is broadcast over the Internet and can be downloaded is a podcast.” *Id.* As Petitioner also argues, “[g]iven that podcasts were well-known in the art, a [person of ordinary skill in the art] would have found it obvious that the content monitored on Sasaki’s terminal device could include downloaded audio content such as talk radio shows (i.e., podcasts).” *Id.* at 23 (citing Ex. 1003 ¶¶ 114–116; Ex. 1010 ¶ 2) (emphasis omitted).

Relying on the credible testimony of Dr. Houh, Petitioner shows that a podcast is a prominent (i.e., desirable) species of a well-known genus of a limited type of Internet radio broadcast. *See* Ex. 1009 ¶ 35 (“It may be desired to publish a portion of the radio program as a podcast.”); *VirnetX*, 665 F. App’x at 888 (holding that “[s]ubstantial evidence supports the PTAB’s finding that Wesinger’s disclosure of the genus ‘computer’ encompasses the ‘notebook computer’ species”). Therefore, Ellis discloses or at least suggests a podcast. Accordingly, Petitioner shows that it would

have been obvious to include podcast media as one of the well-known and desirable audio media types disclosed by Sasaki as further suggested by Ellis's Internet radio broadcasts. Petitioner's showing that a podcast was a well-known and desirable type of an Internet radio podcast, also indicates that it is at least a suitable option for a non-podcast type of Internet radio broadcast. *See Intel Corp. v. PACTXXP Schweiz AG*, 61 F.4th 1373, 1379–80 (Fed. Cir. 2023) (“[I]f there's a known technique to address a known problem using ‘prior art elements according to their established functions,’ then there is a motivation to combine . . . [and] ‘[i]t's not necessary to show that a combination is the best option, only that it be a suitable option.’”) (emphasis omitted).

In its Sur-reply, Patent Owner argues that “a radio show broadcast over the Internet is streamed, which does not involve storing a file, rather than downloaded.” Sur-reply 22 (citing Ex. 2007 ¶ 178). Therefore, according to Patent Owner, “the radio show broadcast disclosure of Ellis relied upon by the Petition does not meet the definition of a podcast.” *Id.* These arguments fail to address Petitioner's obviousness showing wherein Jellison teaches the desirability of publishing a podcast, a podcast is a well-known form of an Internet radio show, and Sasaki generally teaches downloading and storing audio data generally, as discussed above.

Moreover, the argument and testimony support Petitioner for an alternative reason. At the cited paragraph, Mr. Stillerman testifies that “downloading involves storing a media file and saving it in storage.” Ex. 2007 ¶ 178. Therefore, because Sasaki discloses downloading media (including audio media), it discloses downloading media files. It follows that Sasaki's terminal devices are capable of downloading and storing

podcasts, because podcasts, like generic audio media, are broadcast as media files and stored according to record evidence. *See id.*; Ex. 1010 ¶ 2. Claim 1 merely requires the NTRCM of the server to “*control receipt of media*” (emphasis added), and then “infer one or more entertainment preferences . . . based at least in part on the retrieved media . . . and a plurality of media content types . . . , wherein the plurality . . . comprises . . . audio media,” “wherein,” according to claim 2, “the audio media comprises music media and podcast media.” By merely requiring the NTRCM to control the receipt of media content (implicitly including media files per Mr. Stillerman’s testimony) and to infer preferences based on the media files, claim 2 simply requires that the recited NTRCM is configured to handle media files, including podcast media files (i.e., a podcast is an intended use of the claimed NTRCM). Based on the testimony of Mr. Stillerman, Sasaki’s terminals are configured to download and process all types of media files.

Accordingly, for the above-noted reasons, Petitioner’s mapping of the additional limitations of claim 2 to the teachings of Sasaki and Ellis, and its showing of a reasonable expectation of success, is persuasive. *See* Pet. 41–42.

Based on the record and foregoing discussion, we determine that Petitioner shows by a preponderance of evidence that claim 2 would have been obvious.

9. Claim 4

Claim 4 recites “[t]he one or more NTCRM of claim 1, wherein execution of the instructions is to cause the computer server to infer the current location of the user of the media player device based on obtained location information associated with the portable media player device.”

Similar to its showing for claim 1, Petitioner relies on the combination of Sasaki and Ellis to teach this limitation. Pet. 42–43. Patent Owner relies on its unavailing arguments discussed above in connection with claims 1 and 16. PO Resp. 55.

Accordingly, Petitioner’s mapping of the additional limitations of claim 4 to the teachings of Sasaki and Ellis, and its showing of a reasonable expectation of success, are persuasive. *See* Pet. 42–43.

For the reasons discussed above, we determine that Petitioner shows by a preponderance of evidence that claim 4 would have been obvious.

10. Claim 9

Claim 9 recites “[t]he one or more NTCRM of claim 1, wherein execution of the instructions is to cause the computer server to: obtain the media or the information about the media from a storage within the computer server; or control receipt of the media or the information about the media from a remote storage device.”

Petitioner refers to its showing with respect to claim 1 and contends that “Sasaki teaches programs in ROM to control a server,” and “Sasaki further discloses that the server obtains information about the media from a storage within the computer server by teaching that the ‘server performs processing based on preference information . . . which is stored in the HDD 4 of the server.’” Pet. 45 (quoting Ex. 1004 ¶ 119).

Patent Owner contends that the Petition relies on “the preference information of Sasaki.” PO Resp. 57. According to Patent Owner, “[i]n the context of claims 1 and 9, . . . the preference information is distinct from the ‘information about the media’ that the server uses to infer user preferences.” *Id.* at 57–58 (emphasis added) (citing Ex. 2007 ¶¶ 204–205). Patent Owner

also contends that merely because “Sasaki’s server stores user preference information does not render obvious that it would store ‘information about the media’ because in Sasaki the user preference information is provided by the user.” *Id.* at 58 (citing Ex. 2007 ¶ 204).

Patent Owner’s arguments do not undermine Petitioner’s showing. Limitation 1.1.1 recites “control receipt of media or information about the media.” That is, limitation 1.1.1’s “information about the media” provides antecedent basis for the server-stored “information about the media” that claim 9 requires.

With respect to limitation 1.1.2’s requirement for inferring “entertainment preferences of a user,” Petitioner relies on the combined teachings of Sasaki and Ellis. *See* Pet. 36 (explaining that “Sasaki’s server that receives user preference information about different media content types, such as music, still pictures, video, and text in view of Ellis teachings of automatically determining a user’s preferences about songs, commercials, shows, genres, groupings and other content, by monitoring and tracking a user’s usage information retrieved from a portable media player device, where the usage information is about media on or accessed by a portable media player device, render obvious this limitation”).

Similarly, Petitioner shows that “Sasaki further discloses that the server obtains *information about the media from a storage within the computer server* by teaching that the ‘server performs processing based on preference information . . . which is stored in the HDD 4 of the server.’” Pet. 45 (quoting Ex. 1004 ¶ 119)). That is, in several places, Petitioner shows that Sasaki’s preference information includes information about the media.

The record supports this showing, and Patent Owner does not dispute it. Accordingly, Petitioner's mapping of the additional limitations of claim 9 to the teachings of Sasaki and Ellis, and its showing of a reasonable expectation of success, are persuasive. *See* Pet. 44–45. Therefore, Patent Owner's argument that the Petition fails to show storing of information about the media is unavailing.

For the reasons discussed above, we determine that Petitioner shows by a preponderance of evidence that claim 9 would have been obvious.

11. Claims 5, 6, 14, 18, and 19

Claims 5, 6, 14, 18, and 19 depend directly from dependent claim 4 or independent claims 10 or 16. Petitioner contends that claims 5, 6, 14, 18, and 19 would have been obvious over the combined teachings of Sasaki, Ellis, Jacobi, and Havinis. Pet. 60–70. Petitioner relies partly on its showing with respect to claim 1, and provides citations to Sasaki, Ellis, Jacobi, and Havinis, and to the testimony of Dr. Houh. *See id.*

Patent Owner does not separately address claims 5, 6, 14, 18, and 19. *See* generally PO Resp. A review of the record reveals that Petitioner's showing is persuasive. *See* Pet. 60–70. Based on the record, we determine that Petitioner shows by a preponderance of evidence that an artisan of ordinary skill would have had a reasonable expectation of success in combining the teachings of Sasaki, Ellis, Jacobi, and Havinis to reach claims 5, 6, 14, 18, and 19, rendering these claims obvious.

12. Claims 3, 11, and 17

Petitioner asserts that claims 3, 11, and 17, which depend directly or indirectly from independent claims 1, 10, and 16, respectively, would have been obvious over the combined teachings of Sasaki, Ellis, Jacobi, and

Teicher. Pet. 61–66. In support, Petitioner relies on the testimony of Dr. Houh, and provides citations to teachings in Sasaki, Ellis, Jacobi, and Teicher. *Id.* Patent Owner does not provide separate arguments for these claims. *See generally* PO Resp. A review of the record reveals that Petitioner’s showing is persuasive. *See id.*

Based on the record, we determine that Petitioner shows by a preponderance of evidence that an artisan of ordinary skill would have had a reasonable expectation of success in combining the teachings of Sasaki, Ellis, Jacobi, and Teicher to arrive at claims 3, 11, and 17, rendering these claims obvious.

III. CONCLUSION

For the reasons discussed above, Petitioner has shown by a preponderance of the evidence that claims 1–19 of the ’021 patent are unpatentable. The following table summarizes our conclusions:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1, 2, 4, 7–10, 12, 13, 15, 16	103(a)	Sasaki, Ellis, Jacobi	1, 2, 4, 7, 8–10, 12, 13, 15, 16	
5, 6, 14, 18, 19	103(a)	Sasaki, Ellis, Jacobi, Havinis	5, 6, 14, 18, 19	
3, 11, 17	103(a)	Sasaki, Ellis, Jacobi, Teicher	3, 11, 17	
Overall Outcome			1–19	

VI. ORDER

Accordingly, it is

ORDERED that Petitioner establishes by a preponderance of evidence that challenged claims 1–19 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. § 90.2.¹⁷

¹⁷ 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 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).

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

WILDSEED MOBILE, LLC,
Patent Owner.

IPR2023-00244
Patent 10,251,021 B2

Opinion Concurring-in-Part and Dissenting-in-Part filed by CYGAN,
Administrative Patent Judge.

I respectfully dissent from the majority's decision finding claims 10–15 obvious because Petitioner does not sufficiently explain, and the record does not support, that the asserted combination teaches a recommendation sent from the server that is based upon a location received from a portable media player device, as explicitly recited in claim 10. I concur in the decision for claims 1–9 and 16–19, except as to the alternate determination for limitation [1.1.3] that the server receives location information from the media device.

The majority opinion focuses on the whether the server has the functionality to send location from a terminal to a server. Maj. Op. 47–48, 70–71. The majority opinion decision further determines that Sasaki's

terminals “at least impl[[]y] or suggest[], if not explicitly disclose[], that the terminals send location information to the server. *Id.* at 70. The majority opinion points particularly to “Sasaki’s server receives recommendation information (which includes location information as discussed below) from a terminal.” *Id.* at 47–53. The majority opinion further relies on a generic statement in Sasaki that content recommendation information is transmitted and received between a server and terminal. *Id.* at 48 (citing Ex. 1004 ¶ 112).

However, claim 10 is not satisfied merely by a terminal capable of sending location data. Nor is it satisfied by a terminal that sends location data with a recommendation to a server. Instead, claim 10 requires instructions that cause the portable media player device to transmit location information associated with the device to the server, and in response, to cause the server to send recommendations based upon that received location back to the same portable media player device. The recommendation must be based on the location data – it cannot be transmitted with it. In Sasaki, the provision of the recommendation is the final step, not a precursor to further recommendations. Petitioner does not assert, nor does the record show, that Sasaki’s location-based recommendations are used in the claimed manner; i.e., to provide the claimed recommendation based upon current location data. Moreover, claim 10 requires the server to provide a recommendation based upon “inferred preferences of the user and the location information,” not an earlier-transmitted set of location-bearing recommendations.

To be clear, there is no embodiment in Sasaki that transmits location information except with the recommendation information. Sasaki’s sole

described purpose of receiving location information is for recording where recommendations were received by the terminal so as to enable the user to later “search for a favorite piece of content on the basis of pieces of content recommendation information”; e.g., by the received location. Ex. 1004, Fig. 3B, ¶¶ 59, 71–72. Sasaki’s location teachings are inexorably tied with receipt of a recommendation. There is no indication in Sasaki that location would be transmitted for any other purpose, or at any other time, than with the recommendation information. Consequently, no matter how one combines Sasaki’s different embodiments, Sasaki does not teach sending location data except with recommendation data.

Petitioner does not acknowledge the nature of Sasaki’s location teachings, and does not explain how and why they teach the requirement that location data received from a portable media player be the basis of recommendations made at the server and transmitted back to the portable media player. Consequently, I find that Petitioner has not shown, by a preponderance of the evidence, that claim 10 would have been obvious over the relied-upon teachings of Sasaki and Ellis.

The majority opinion also advances an alternate determination that the structure of Sasaki combined with the GPS of Ellis teaches this limitation. Maj. Op. 55. The majority opinion relies upon Ellis’ teachings that its remote device determines its own location, that it downloads information about local events, and that its techniques can be implemented in a central facility, which in the combination, would be Sasaki’s server. *Id.* at 54–55. However, the majority opinion does not explain how Ellis, not relied upon for sending a location anywhere, would remedy the lack of such a teaching in Sasaki.

Moreover, any determination that relies upon Ellis to teach transmitting location from a remote device would go beyond the scope of Petitioner's assertions. Petitioner relies solely upon Sasaki for teaching transmission of the location information. Petitioner states that the location transmission is taught by "Sasaki's server in communication with a portable media player device that directly transmits information representing location information in view of Ellis' technique of using the user's geographic location to access information about events and facilities that are local to the user." Pet. 37. Petitioner confirms this position, stating, "Sasaki teaches receiving location information representing the location of the user and Ellis teaches a technique that uses the geographic location of the user to acquire a set of events and facilities that are local to the user. *Id.* at 38. Petitioner again relies solely on Sasaki in its assertions for claim 10, stating "Sasaki teaches that the portable media player device associated with the user directly transmits location information to the server." *Id.* at 51. Thus, Petitioner relies on Sasaki's server-terminal connection, not Ellis' remote device-central facility connection, to teach sending location to a server. The majority opinion does not explain how the combined teachings of Sasaki and Ellis would teach that which either does not.

Because Petitioner relied only on Sasaki for the location transmission in claim 10, the majority opinion's reliance on Ellis or some emergent property of the Sasaki-Ellis combination for the location transmission would go beyond the scope of the Petitioner's assertions. Our reviewing court has limited our review to the unpatentability theories presented by the Petitioner. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) ("[W]hile the PTO has broad authority to establish procedures for revisiting

earlier-granted patents in IPRs, that authority is not so broad that it allows the PTO to raise, address, and decide unpatentability theories never presented by the petitioner and not supported by record evidence.”). For this reason also, I do not agree with my brethren’s decision to find claim 10, and claims dependent therefrom, obvious on this manner of combining Sasaki and Ellis.

In summary, I disagree with the portions of the majority opinion relying on Sasaki to teach location information being provided to its server by its terminal, and with the portions of the majority opinion raising a new Sasaki-Ellis combination in which Ellis provides any teaching of transmitting location information. For the foregoing reasons, I dissent-in-part from the majority opinion.

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