

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

IKORONGO TECHNOLOGY LLC and IKORONGO TEXAS LLC,
Patent Owner.

IPR2021-00204
Patent 8,874,554 B2

Before CHARLES J. BOUDREAU, SHARON FENICK, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

FENICK, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

We have jurisdiction to conduct this *inter partes* review under 35 U.S.C. § 6(b)(4). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed herein, we determine that Google LLC (“Petitioner”) has shown, by a preponderance of the evidence, that claims 1–4, 8, 17–20, 24, 33–36, and 38 of U.S. Patent No. 8,874,554 B2 (Ex. 1001, “the ’554 patent”) are unpatentable.

I. INTRODUCTION

Petitioner filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–4, 8, 17–20, 24, 33–36, and 38 (“challenged claims”) of the ’554 patent. Ikorongo Technology LLC and Ikorongo Texas LLC (collectively, “Patent Owner”) identify themselves as the joint owners of the ’554 patent and real parties in interest for Patent Owner (Paper 4, 1), and timely filed a Preliminary Response to the Petition. On January 25, 2022, we instituted an *inter partes* review (Paper 16, “Institution Decision” or “Inst. Dec.”), in conjunction with granting Petitioner’s request for rehearing (Paper 14) of an earlier decision denying institution (Paper 13).

Patent Owner filed a Patent Owner Response on April 18, 2022. Paper 24 (“PO Resp.”). Petitioner filed a Reply on July 11, 2022. Paper 28 (“Pet. Reply”). On August 22, 2022, Patent Owner filed a Sur-reply. Paper 30 (“PO Sur-reply”).

An oral hearing on this matter and a related case (IPR2021-00205) was held on October 25, 2022. The Hearing Transcript (“Tr.”) is included in the record as Paper 39.

A. *Real Parties in Interest*

Petitioner identifies itself (Google LLC, a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc.), LG Electronics Inc.,

LG Electronics U.S.A., Inc., Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc. as real parties in interest. Pet. 85. Patent Owner identifies only itself as a real party in interest. Paper 22 (Patent Owner's Second Updated Mandatory Notice), 2.

B. Related Matters

Petitioner and Patent Owner indicate that the '554 patent is involved in two U.S. District Court actions, namely, *Ikorongo Texas LLC v. LG Electronics, Inc.*, No. 6:20-cv-00257 (W.D. Tex.); and *Ikorongo Texas LLC v. Samsung Electronics Co.*, No. 6:20-cv-00259 (W.D. Tex.) (transferred to Northern District of California, Case Nos. 21-cv07429-SI, 21-cv-07424-SI). Pet. 85; Paper 22, 1.

The '554 patent also is involved in a concurrently filed IPR, IPR2020-00205. Pet. 84; Paper 22, 2.

C. Overview of the '554 Patent

The '554 patent is titled "Turnersphere." Ex. 1001, code (54). The '554 patent issued October 28, 2014, from an application filed November 1, 2013. *Id.* at codes (22), (45). As discussed in further detail in Section II.D.3 below, the '554 patent claims priority from various related applications, including two continuation-in-part applications, dating back to December 21, 2007. *Id.* at code (63).

The '554 patent generally relates to a system for identifying media items associated with a geographic area of interest to a user. *Id.* at code (57), Fig. 1. System 10 includes media service 12 and devices 14-1 through 14-N. *Id.* at 3:58–60; Fig. 1. Devices 14-1 through 14-N provide playback information to media service 12 via network 18. *Id.* at 3:60–62, 4:35–43. The playback information includes information identifying the media item played by a device and a current location of the device (the

location at which the media item is played). *Id.* at 4:35–43, 4:55–60.

Device 14-1 includes location determination function 38-1 for obtaining the location of the device, where the location of device 14-1 is included in the playback information provided to media service 12. *Id.* at 7:8–12, 7:33–37. Media service 12 tracks playback of media items by users 16 and maintains a play history for each of users 16, including information identifying the media item played by the user and locations at which the media items were played. *Id.* at 4:1–19.

A device may receive a media request from its user selecting one or more geographic areas of interest. *Id.* at 5:12–15, 5:21–23, 8:35–37. The device sends the media request to media service 12. *Id.* at 5:19–25, 8:43–45. In response, media service 12 identifies media items based on the geographic areas, such as media items that were played at locations within the geographic areas of interest, and provides the identified media items to the user's device. *Id.* at 5:25–32, 8:45–63.

D. Illustrative Claims

Claims 1 and 8, reproduced below with identifiers as used by the parties noted in brackets, are illustrative of the claimed subject matter:

1. A user device comprising:

[1a] a media player component adapted to interact with a media item;

[1b] a communication interface component adapted to provide media item information identifying the media item, [1c] the communication interface component adapted to provide location information identifying a geographic location associated with the user device at which the media item was interacted with;

[1d] a location determination component adapted to receive an identification of a geographic area;

[1e] the communication interface component adapted to receive information that identifies a second media item, wherein location information associated with the second media item is associated with the identified geographic area; and

[1f] a user interface component adapted to present, via the user device, the information that identifies the second media item, [1g] wherein at least one of the preceding components includes at least one electronic hardware component.

Ex. 1001, 26:30–51.

8. The user device of claim 1 wherein the user interface component is adapted to present the information that identifies the second media item in association with a map including the geographic area.

Id. at 27:1–4.

E. Evidence Relied Upon by Petitioner

Petitioner relies upon the following references:

Horowitz et al., U.S. Publication No. 2009/0049051 A1 (Ex. 1005, “Horowitz”), filed August 16, 2007, published February 19, 2009.

Kalasapur et al., U.S. Patent No. 8,156,118 B2 (Ex. 1006, “Kalasapur”), filed August 20, 2007, issued April 10, 2012.

Rosenberg, U.S. Publication No. 2007/0233743 A1 (Ex. 1007, “Rosenberg”), filed June 12, 2007, published October 4, 2007.

Landschaft et al., U.S. Publication No. 2008/0064351 A1 (Ex. 1009, “Landschaft”), filed September 8, 2006, published March 13, 2008.

Pet. 1.

Petitioner also relies on a declaration from David Hilliard Williams. Ex. 1003.¹ Patent Owner supports its rebuttal with a declaration from Michael T. Goodrich, Ph.D. Ex. 2014.

F. Asserted Grounds

Petitioner asserts that claims 1–4, 8, 17–20, 24, 33–36, and 38 are unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §²	Reference(s)/Basis
1–4, 8, 17–20, 24, 33–36, 38	103(a)	Horowitz, Kalasapur
1–4, 17–20, 33–36	103(a)	Rosenberg, Landschaft

Pet. 2.

II. ANALYSIS

A. Legal Standards

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800

¹ Mr. Williams’s declaration contains paragraphs numbered 1 through 126, and then 86 through 163. Our references to paragraphs in the range 86–126 are to the first paragraphs with those numbers, found on pages 39–54.

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103. Because the ’554 patent is a continuation of an application filed before March 16, 2013, the effective date of the relevant amendment, the pre-AIA version of § 103 applies. *See* Ex. 1001, code (63).

F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review).

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are “such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

We analyze the asserted grounds with the principles stated above in mind.

B. Level of Ordinary Skill in the Art

With regard to the level of ordinary skill in the art, Petitioner contends:

A person of ordinary skill in the art (“POSA”) at the time of the purported invention would have at least a bachelor’s degree in Computer or Electrical Engineering, or equivalent engineering discipline, and approximately three years’ experience in media data management, mobile location, and data networking technologies. Williams, ¶47. Additional education could have substituted for professional experience, and significant work experience could have substituted for formal education. Williams, ¶47.

Pet. 5–6 (citing Ex. 1003 ¶ 47). In the Institution Decision we preliminarily adopted this proposal for the level of ordinary skill in the art. Inst. Dec. 12–13. Patent Owner agreed with this definition. PO Resp. 1.

Petitioner’s proposal is consistent with the technology described in the specification and the cited prior art, and we adopt it for this Final Written Decision.

C. Claim Construction

We apply the same claim construction standard that is applied in civil actions under 35 U.S.C. § 282(b), which is articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). See 37 C.F.R. § 42.100(b) (2019). Under *Phillips*, claim terms are afforded “their ordinary and customary meaning.” *Phillips*, 415 F.3d at 1312 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention” *Id.* at 1313. “Claim construction begins with the words of the claim, which ‘must be read in view of the specification, of which they are a part.’” *Wi-LAN, Inc. v. Apple, Inc.*, 811 F.3d 455, 462 (Fed. Cir. 2016) (quoting *Phillips*, 415 F.3d at 1312–15).

We are also guided by the principle that we need only construe claim terms if, and to the extent that, it is necessary for the purpose of the proceeding. See, e.g., *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘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)).

The Petition states, “No claim terms need to be construed by the Board at this time.” Pet. 6. We did not construe any claim terms in the

Institution Decision, but noted that we did not find that the claim term “location information” encompasses IP address information. Dec. Inst. 11–12, 20–21. Patent Owner agrees with these findings. PO Resp. 1; Tr. 45:3–6. As this construction is not necessary to resolve the controversy before us, we do not make a final determination regarding this “location information” construction. *See Wellman, Inc.*, 642 F.3d at 1361.

“location determination component” – Claim 1

Notwithstanding general agreement that no claim terms require construction, Patent Owner proposes in its Response that, to one of ordinary skill in the art, “the claim term ‘location determination component’ has its plain-and-ordinary meaning in light of the specification of the ’554 Patent.” PO Resp. 35 (citing Ex. 2014 ¶ 106). Patent Owner cites as providing this meaning the disclosure in the ’554 Patent of “location determination function 38-1” that “generally operates to obtain the location of the device 14-1, where the location of the device 14-1 is then included in the playback information provided to the media service 12.” *Id.* (quoting Ex. 1001, 7:33–36). Patent Owner concludes that one of ordinary skill in the art would understand “location determination component” to be “a component that determines the location of the user device.” *Id.* (citing Ex. 2014 ¶ 106); Tr. 52:1–55:4.

Petitioner disputes Patent Owner’s contentions, arguing that “[t]he location obtained by the ‘location determination *function*’ corresponds to the ‘location information’ in element [1c], not the identification of geographic area received by the ‘location determination component’ in element [1d].” Pet. Reply 5–6. Petitioner argues that the claimed location determination component is adapted to receive an identification of a geographic area, and

that this geographic area does not necessarily correspond to the location of the user device, but rather may correspond to a geographic area selected or defined by a user to discover media items played in that geographic area. Pet. 22–25 (citing Ex. 1001, 13:7–21, 15:38–44, Figs. 5, 6; Ex. 1003 ¶ 82); Pet. Reply 5–8 (citing Ex. 1001, 5:9–15, 7:33–36, 13:15–17, 15:38–54, 26:40–46, Figs. 2, 5, 6F); Tr. 9:3–7, 19:1–21:11.

The words of the claim require that the “location determination component” be “adapted to receive an identification of a geographic area.” Ex. 1001, 26:40–41. This geographic area is used in limitation 1e in the identification of a second media item with associated location information that is associated with the geographic area. *Id.* at 26:42–46. Information identifying this second media item is then presented. *Id.* at 26:47–49. Patent Owner identifies an element of the specification (“location determination function”) that has, in common with the disputed claim element, the words “location determination” and argues that it determines the location of the user device of claim 1. PO Resp. 35 (citing Ex. 1001, 7:33–41; Ex. 2014 ¶ 106); PO Sur-reply 4–5; Tr. 52:1–54:3, 56:21–57:12. However, this location determination function is not described in the specification as being used to identify a second media item and present information regarding that item, but instead only to obtain the location of device 14-1. Ex. 1001, code (57), 7:33–47.

Patent Owner further argues that “manually indicating a geographic area of interest . . . is not ‘a location determination component.’” PO Resp. 36 (quoting Ex. 2014 ¶ 107). It appears from the specification, however, that the indication of a geographic area of interest used in identification of a second media item is not limited, as Patent Owner argues, to obtaining the location of the user device or linked to the location

determination function in the specification. The specification of the '554 patent instead describes that “play histories” of users on devices are tracked, including by identifying (a) a media item played, (b) the location of the user’s device at the time the media item is played, and (c) a time stamp. *Id.* at 3:58–60, 4:5–19, 4:35–43, 7:33–37. The specification additionally describes a user selecting a geographic area of interest for use in processing play history to identify additional media items. *Id.* at 5:9–15, 8:45–63, 13:7–21, 15:38–54, Figs. 5, 6F; Pet. 23–25. The claim language recites that the location determination component is “adapted to receive an identification of a geographic area,” and we do not agree with Patent Owner that the claim language or specification precludes such a component from receiving a manual indication of such an identification.

Additionally, claims 3 and 4 further limit claim 1 to require that the “location determination component is adapted to determine the current location of the user device.” *Id.* at 26:54–56 (claim 3), 26:57–58 (claim 4); *see* Pet. Reply 8. Patent Owner argues that the discussion of claims 3 and 4 by Petitioner is “a late claim construction argument that . . . should have been made in [Petitioner’s] petition, but which has been waived.” PO Sur-reply 5. However, we disagree that there is any change of theory, and we conclude that the discussion of these claims is within the proper scope of reply as a proper rebuttal argument. *See* Pet. 22–25 (discussing how “[t]he '554 patent confirms” an understanding of location determination component in which a geographic area is selected by a user, as contrasted with a possible construction in which the location determination component uses a current location of the user device); PO Resp. 35 (arguing that the plain and ordinary meaning of “location determination component” is a component that determines the location of the user device); *Apple Inc. v.*

Andrea Elecs. Corp., 949 F.3d 697, 706–07 (Fed. Cir. 2020) (finding it to be an abuse of discretion to reject a petitioner’s reply arguments relying on an additional example of an algorithm from a prior art document to further explain a position included in a petition); *Anacor Pharm., Inc. v. Iancu*, 889 F.3d 1372, 1380 (Fed. Cir. 2018) (not improper for evidence not included in a petition to be later introduced if the opposing party has notice of the evidence and the opportunity to respond to it); *cf. Interactive Gift Exp., Inc. v. CompuServe Inc.*, 256 F.3d 1323, 1346–1347 (Fed. Cir. 2001) (finding that waiver on appeal to the Federal Circuit precludes a party to litigation from changing claim construction on appeal but does not preclude a party from offering additional or new supporting arguments based on evidence of record for the party’s previously presented claim construction). We also note that Patent Owner did not file a motion to strike or request any further briefing and had ample notice to respond to this point. Thus, we consider the additional limitations in claims 3 and 4 and determine that a rebuttable presumption is created in this situation that the limitation found in the dependent claims should not be read into the independent claim. *Phillips*, 415 F.3d at 1314–15 (“Other claims of the patent in question . . . can also be valuable sources of enlightenment as to the meaning of a claim term. . . . Differences among claims can also be a useful guide in understanding the meaning of particular claim terms. . . . For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” (citations omitted)). Patent Owner has presented no “strong contrary evidence” sufficient to overcome that presumption, and we discern none in our examination of the claim term in light of the specification. *See InterDigital Commc’ns, LLC v. Int’l Trade Comm’n*, 690 F.3d 1318, 1324

(Fed. Cir. 2012) (“[T]he doctrine of claim differentiation . . . can be overcome by strong contrary evidence such as definitional language in the patent or a clear disavowal of claim scope.”).

For these reasons, we conclude that the term “location determination component” is not limited to a component of a user device that obtains the location of the user device, as Patent Owner argues, but encompasses a component that receives the identification of a geographic area that does not necessarily correspond to the geographic location of the user device.

D. Cited References

1. Horowitz (Ex. 1005)

Horowitz discloses a system for presenting media items associated with a selected geographic area and the locations at which the media items were interacted with. Ex. 1005, code (57), ¶¶ 50–52. Figure 1 of Horowitz is reproduced below.

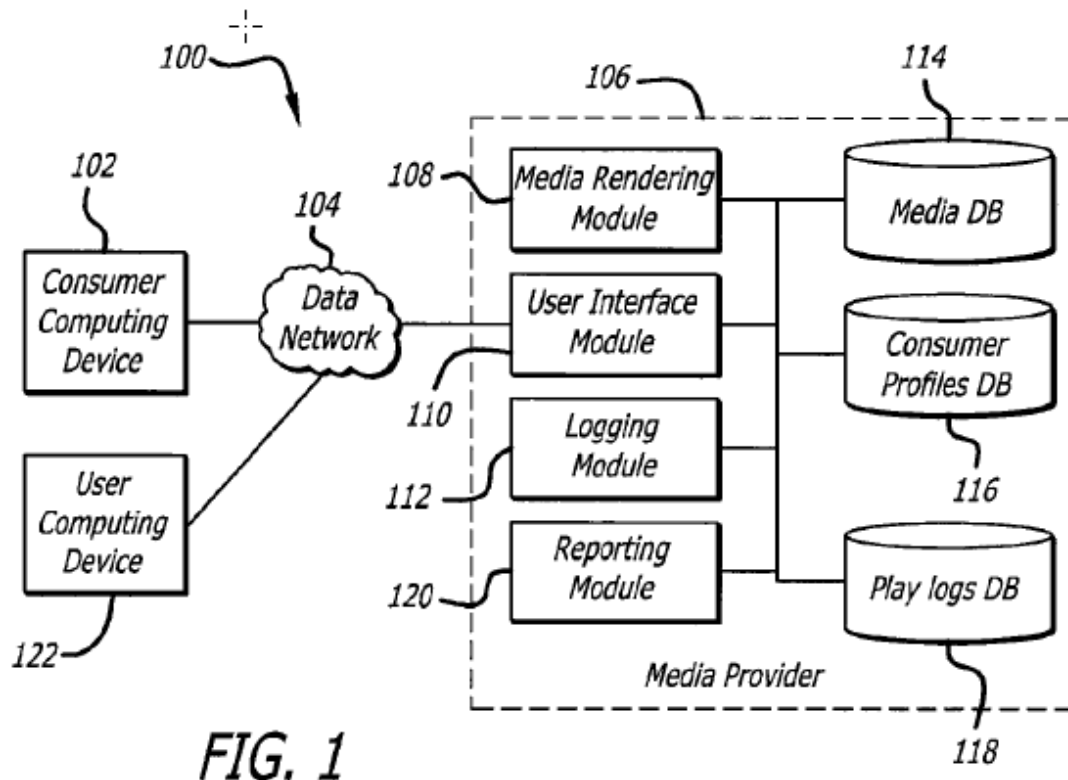
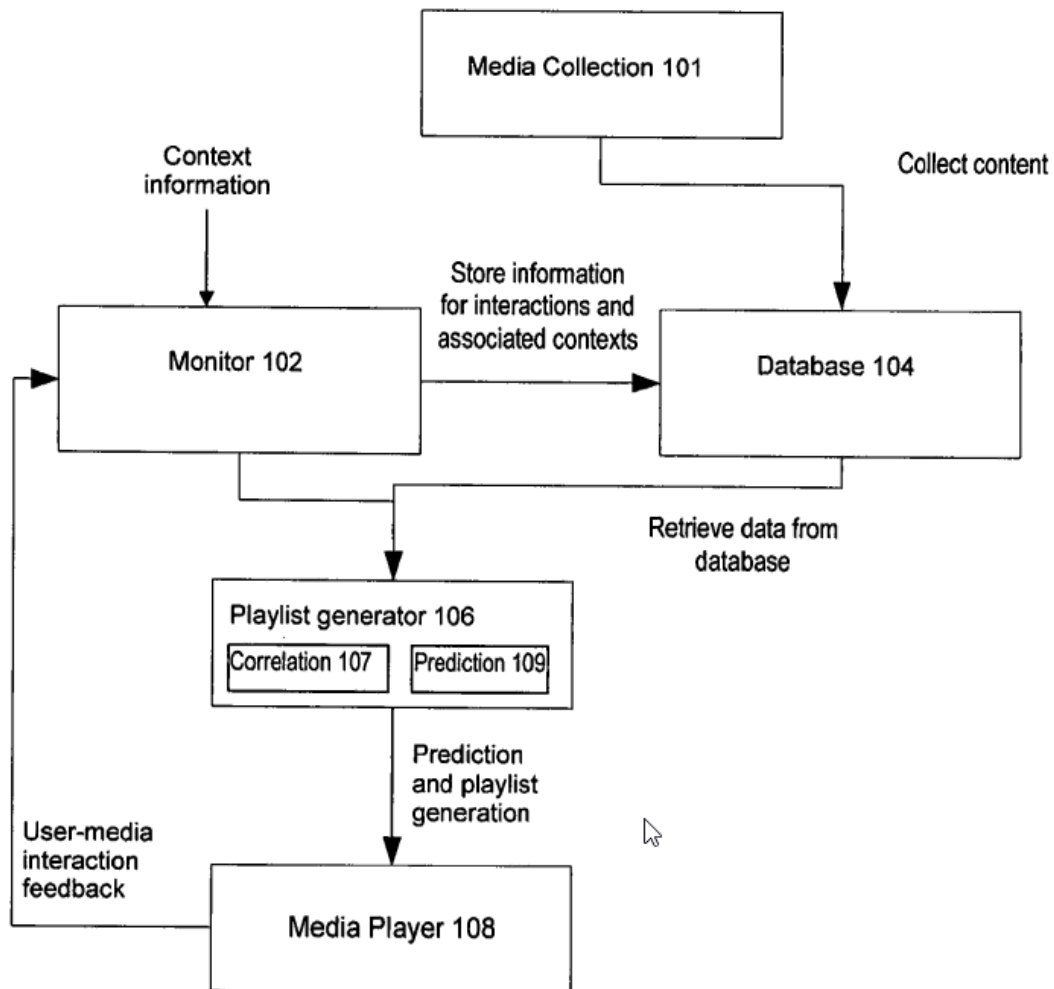


Figure 1 of Horowitz, above, shows consumer computing device 102 and user computing device 122 connected to media provider 106 via data network 104. *Id.* at Fig. 1. A media consumer can request a media file from media provider 106 using consumer computing device 102 to access data network 104. *Id.* ¶ 29. The media provider determines the “geographic location of the consumer making the request” using the IP address of consumer computing device 102. *Id.* ¶ 32. The media provider stores “information of the requested media as well as geographic information associated with each media request.” *Id.* ¶ 33.

A user at user computing device 122 can “request a report on consumer media access patterns in a specific geographic area.” Ex. 1005 ¶ 34. In response, the media provider communicates to the user a list of media items accessed by consumers located in the specific geographic area, e.g., a top ten list in the geographic area selected by the user. *Id.* ¶¶ 35, 52. The user receiving the list of media items can also “turn into a consumer and request similar media from the media provider.” *Id.* ¶ 26.

2. *Kalasapur (Ex. 1006)*

Kalasapur discloses a system for generating playlists of media items based on user-content interactions and the context of those interactions. Ex. 1006, code (57), 1:48–55, 2:11–24. Figure 1 of Kalasapur is reproduced below.



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FIG. 1

In Figure 1, above, Kalasapur discloses that context information is input to a monitor 102 that “[s]tore[s] information for interactions and associated contexts” in database 104. *Id.* at 2:29–33, 2:37–38, 3:9–18, Fig. 1.

Database 104 receives input from media collection 101. *Id.* Playlist generator 106 “[r]etrieve[s] data from [the] database [104],” receives input from monitor 102, and sends “Prediction and playlist generation” to media

player 108, which provides “[u]ser-media interaction feedback” to monitor 102. *Id.*

The user-media interaction context includes “the location(s) of interaction.” Ex. 1006, 3:51–52, 2:18–19, 4:11–13. For example, a device including media player 108 may be “equipped with a GPS” to obtain the location of interaction with the media items. *Id.* at 4:18–19, 6:42–44. Monitor 102 monitors the user interactions and associated context, and the monitored information is stored in database 104. *Id.* at 3:9–18. Media player 108 may send “a request to the playlist generator 106 for a personalized playlist.” *Id.* at 3:25–26.

The current context, such as the current location of media player 108, is provided to playlist generator 106. Ex. 1006, 3:32–35. Playlist generator 106 generates a set of recommended media items “using the current context(s) and the monitored information stored in the database 104.” *Id.* at 3:36–40. Kalasapur discloses that monitor 102, playlist generator 106, and database 104 may reside on the same computer, separate from the device having media player 108. *Id.* at 6:42–47.

3. *Availability of Horowitz and Kalasapur as Prior Art*

a) *Legal Standards*

An inventor can antedate a reference by showing that the invention was conceived before the effective date of the reference, with diligence to actual or constructive reduction to practice. *In re Steed*, 802 F.3d 1311, 1320 (Fed. Cir. 2015) (citing 37 C.F.R. § 1.131). In an *inter partes* review, “a patent challenger has the burden of producing evidence to support a conclusion of unpatentability under § 102 or § 103,” but a patentee that “affirmatively seek[s] to establish a proposition not relied on by the patent challenger and not a necessary predicate for the unpatentability claim

asserted,” such as establishing the benefit of an earlier priority date, bears the burden with respect to establishing that proposition. *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1375–76 (Fed. Cir. 2016) (citing *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1379 (Fed. Cir. 2015)).

“To antedate (or establish priority) of an invention, a party must show either an earlier reduction to practice, or an earlier conception followed by a diligent reduction to practice.” *Purdue Pharma L.P. v. Boehringer Ingelheim GmbH*, 237 F.3d 1359, 1365 (Fed. Cir. 2001). “The filing of a patent application serves as conception and constructive reduction to practice of the subject matter described in the application.” *Hyatt v. Boone*, 146 F.3d 1348, 1352 (Fed. Cir. 1998); *Frazer v. Schlegel*, 498 F.3d 1283, 1288 (Fed. Cir. 2007).

b) The Parties’ Positions

The Petition, citing priority claims listed on the face of the ’554 patent, asserts that the earliest arguable priority date for claims of the ’554 patent is December 21, 2007, without conceding that this is the correct priority date for any of the claims. Pet. 5 & n.1; Ex. 1001, code (63), 1:5–21. Horowitz is the patent application publication of an application filed on August 16, 2007. Ex. 1005, code (22). Kalasapur issued from a patent application filed on August 20, 2007. Ex. 1006, code (22).

Patent Owner argues that an earlier conception of claim 1 is shown in Exhibit 2019, alleging a conception date before the effective date of the Horowitz and Kalasapur references. PO Resp. 2–10 (including a table providing purported support for the limitations of claim 1 of the ’554 patent

from Exhibit 2019³). Exhibit 2019 includes a title page, and then 32 pages Bates numbered IKR000007 through IKR000038. Ex. 2019. IKR000007 through IKR000023 appear to be one document, with internal pagination, titled “P110 Method & System for generating media recommendations in a distributed environment based on tagging play history information with position information,” with two authors (Hugh Svendsen and Gene Farrelly) and a date of “7/2/2007.” *Id.* at IKR000007–IKR000023.⁴ The nineteenth page of Exhibit 2019 appears to be a screenshot of a portion of a personal computer desktop with document information for “More Like This v2.pages,” including showing a “date modified” of August 28, 2007. *Id.* at IKR000024. The remaining fourteen pages of Exhibit 2019 appears to be one document, with the same title, authors, and date as the first document, but containing somewhat different information. *Compare* Ex. 2019, IKR000007–IKR000023, *with id.* at IKR000025–IKR000038. Patent Owner contends that the first-appearing document is “v2” of “conception document P110.” PO Sur-reply 13 (citing Ex. 1026, 56:14–58:8, 61:5–65:7). Patent Owner further contends that the second-appearing document is “version 1” of “P110,” which is the version used in the chart detailing prior conception. *Id.*

Patent Owner argues that a declaration from inventor Hugh Svendsen demonstrates diligence through constructive reduction to practice on December 21, 2007. PO Resp. 10–11 (citing Ex. 2018 ¶¶ 8–14; Exs. 2020–

³ The table heading cites Ex. 2012, but this appears to be a typographical error. *See* Ex. 1026, 56:5–13 (Mr. Svendsen testifying that Exhibit 2019 was intended).

⁴ We use the internal Bates numbers in referring to the pages of Exhibit 2019.

2025). In his declaration Mr. Svendsen asserts that he was “diligent in assisting counsel, both internal and external, in filing the earliest-dated parent application to which” the ’554 patent claims priority. Ex. 2018 ¶ 8. Mr. Svendsen cites Exhibit 2021, which he describes as a letter dated August 28, 2007, sent from his employer to a search firm; Exhibit 2022, a letter from the search firm dated September 26, 2007; Exhibit 2023, a letter from his employer to a patent attorney dated November 27, 2007; Exhibit 2024, an email chain describing a call to take place on December 5, 2007; and Exhibit 2025, a screenshot of a folder including “date created” and “date modified” fields Mr. Svendsen identifies as associated with Exhibits 2022–2024. PO Resp. 10–11; Ex. 2018 ¶¶ 2, 8–14. Patent Owner argues that this evidence, considered as a whole, corroborates the inventor’s testimony of reasonable diligence. PO Sur-reply 13–15 (citing *Brown v. Barbacid*, 436 F.3d 1376, 1380 (Fed. Cir. 2006); *ATI Techs. ULC v. Iancu*, 920 F.3d 1362, 1370–75 (Fed. Cir. 2019)).

Petitioner argues that conception has not been established, because Patent Owner attempts to establish it through an inventor declaration and unwitnessed documents from the inventor. Pet. Reply 21–22 (citing, *inter alia*, *Coleman v. Dines*, 754 F.2d 353, 359 (Fed. Cir. 1985); *In re NTP, Inc.*, 654 F.3d 1279, 1291–92 (Fed. Cir. 2011); *Brown v. Barbacid*, 276 F.3d at 1335). Petitioner argues that the testimony regarding the metadata is not reliable, as the metadata shown in Exhibit 2020 and described by Mr. Svendsen as showing that the file was last modified on July 20, 2007, is at odds with metadata shown in Exhibit 2019, which shows modification on August 28, 2007. *Id.* at 22–23 (citing Ex. 2018 ¶ 4; Ex. 2019, IKR000024; Ex. 2020). Petitioner additionally argues that Mr. Svendsen’s testimony that the inventor disclosed the completed thought is called into question because

the invention disclosure sent to the patent attorney was not submitted with the letter that is Exhibit 2023, the disclosure sent to the attorney was the August 28, 2007 version, and the attachment sent to the search firm with Exhibit 2021 was likewise not submitted. *Id.* at 23–24 (citing Ex. 1026, 25:8–15, 65:4–7). Additionally, Petitioner argues that the testimony does not explain the roles in the content of the purported conception document of the second named inventor (Scott Curtis) of the ’554 patent or of the second author of the conception document (Gene Farrelly), who is not a named inventor on the ’554 patent. *Id.* at 24–25 (citing Ex. 1026, 23:5–11; 27:13–20; 28:3–12).

With respect to constructive reduction to practice, Petitioner argues that Ikorongo’s analysis regarding the support in the alleged conception document for claim 1 of the ’554 patent is not sufficient to show reduction to practice on December 21, 2007. Pet. Reply 25–26. Rather, Petitioner contends constructive reduction to practice has not been shown on December 21, 2007, including because the chain of priority from the application filed on that date to the application that issued as the ’554 patent includes at least one continuation-in-part application that may not be fully supported by the priority application. *Id.*

c) Analysis

We conclude that Patent Owner has not presented adequate evidence that it is entitled to a conception date in July of 2007.

With respect to conception, we acknowledge, as Patent Owner notes, that in *ATI Techs. ULC*, certain metadata evidence regarding diligence was credited. *ATI Techs. ULC v. Iancu*, 920 F.3d at 1370–75. We “assign[] probative value and collectively weigh[]” the corroborating evidence to determine if it is sufficient. *In re NTP*, 654 F.3d at 1291. As in *NTP*, Patent

Owner relies on a document to corroborate the inventor's testimony regarding conception, but also relies on the inventor's testimony to corroborate the date of the document. *See id.* at 1291–92. We find the situation similar to that in *Apator Miitors ApS*, in that Mr. Svendsen's testimony regarding the date of conception is not corroborated by any evidence other than to his own statements and documents. *Apator Miitors ApS v. Kamstrup A/S*, 887 F.3d 1293, 1295 (Fed. Cir. 2018) (citing *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996); quoting *Hahn v. Wong*, 892 F.2d 1028, 1032 (Fed. Cir. 1989)) (setting forth as “well established” that conception must be proven through independent evidence other than the inventor's “own statements and documents”). To the extent Patent Owner argues that the date (July 30, 2007) shown in Exhibit 2020 is such independent evidence, the association of that exhibit to the document shown in pages IKR000007–IKR000023 is only made through Mr. Svendsen's testimony. Ex. 2018 ¶¶ 3–4; *see* Ex. 1026, 57:19–58:1. Collectively weighing the evidence before us, we find that it does not sufficiently support the contentions regarding the date of the IKR000007–IKR000023 document that allegedly establishes conception.

Additionally, with respect to constructive reduction to practice, we agree with Petitioner that Patent Owner has not shown reduction to practice of the material in the conception document as of the December 21, 2007, filing of an application (“the ’050 application”) through its comparison of that document to claim 1 of the ’554 patent. *See* Pet. Reply 25–26. The application that issued as the ’554 patent claims priority to the ’050 application through two continuation-in-part applications. Ex. 1001, code (63), 1:5–21. Patent Owner has not established that its table discussing claim 1 of the ’554 patent shows constructive reduction to practice as of the

date of that '050 application, as opposed to, for example, September 9, 2011, the date of an application to which the '554 patent claims priority through continuation (as opposed to continuation-in-part) applications. Patent Owner has not shown that the '050 application described the claimed subject matter. *See Hyatt*, 146 F.3d at 1352 (“The filing of a patent application serves as conception and constructive reduction to practice *of the subject matter described in the application.*”) (emphasis added). Collectively weighing the evidence before us, we find that it does not sufficiently support the contentions regarding constructive reduction to practice on December 21, 2007. Since Patent Owner does not make any claims regarding diligence to the date of filing of the '554 patent or to a predecessor application that described the subject matter of the challenged claims of the '554 patent, we find no adequate showing of diligence leading up to reduction to practice.

For these reasons, we find that Horowitz and Kalasapur are not antedated and are available as prior art to the challenged claims of the '554 patent.

E. Objective Indicia of Nonobviousness

As discussed, one underlying factual determination regarding obviousness is objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. at 17–18. Secondary considerations include commercial success enjoyed by embodiments of the patented invention, industry praise for the patented invention, copying by others, and the existence of a long-felt but unmet need for the invention. *See Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1052–53 (Fed. Cir. 2016) (en banc).

“In order to accord substantial weight to secondary considerations in an obviousness analysis, ‘the evidence of secondary considerations must have a “nexus” to the claims, *i.e.*, there must be “a legally and factually sufficient connection” between the evidence and the patented invention.’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (citing *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019)). “The patentee bears the burden of showing that a nexus exists” *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999). Nexus is a legally and factually sufficient connection between the objective evidence and the claimed invention, such that the objective evidence should be considered in determining nonobviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988).

Patent Owner presents arguments regarding long-felt but unmet need and industry praise for the patented invention. PO Resp. 68–74.

Patent Owner argues that there was “long felt need for users to be able to share location information with friends in a way that satisfied access rights and was supported by users being able to register with the location-sharing service and have their location collected and reported using a client-side application.” PO Resp. 68–69 (citing Ex. 2014 ¶¶ 279–281). Patent Owner contends that this is shown because the ’554 patent was allowed over 607 cited patents and 209 non-patent citations. *Id.* (citing Ex. 1001, code (56)). Patent Owner argues that the nexus between this evidence and “the merits of the claimed invention” are shown because “the above references were cited on the face of the patent.” *Id.* at 69 (citing Ex. 2014 ¶ 281).

Patent Owner argues that praise by others is shown by citations to the '554 patent in 85 subsequently filed patent applications. *Id.* at 69–74 (citing Ex. 2014 ¶¶ 282–283). Patent Owner cites but does not enter into the record research papers that it characterizes as “conclud[ing] that the number of citations to a patent is statistically correlated to the market valuations of the patent, to knowledgeable-peer opinion as to the technical importance of the patent, and to independent measures of the social value of innovations in a patent.” *Id.* at 73–74. Patent Owner argues that these studies confirm that the number of citations to the '554 patent evidence a nexus to “merits of the claimed inventions” of the '554 patent. *Id.* at 74.

Patent Owner’s showing is deficient in several respects. First, “long-felt need is analyzed as of the date of an articulated identified problem and evidence of efforts to solve that problem.” *Tex. Instruments Inc. v. U.S. Int’l Trade Comm’n*, 988 F.2d 1165, 1178 (Fed. Cir. 1993). Patent Owner does not show any analysis of any of the cited prior art references on the face of the '554 patent and whether they describe or relate to the need Patent Owner’s declarant asserts existed or whether they show that that need was “long-felt” and unsolved.

With respect to the “praise by others” allegedly shown by the citation to the '554 patent in subsequently filed patent applications, we agree with Petitioner (*see* Pet. Reply 20) that Patent Owner has not shown that citation by an examiner is industry praise. *Cf. Bayer Healthcare Pharm., Inc. v. Watson Pharm., Inc.*, 713 F.3d 1369, 1377 (Fed. Cir. 2013) (finding that “bare journal citations” of studies regarding an invention “fall well short of demonstrating true industry praise”). Patent Owner’s provided table of these citations shows that more than half of the 85 citations are marked with an asterisk, indicating that they were “[c]ited by examiner.” PO Resp. 70–73.

Even if these citations would evidence industry praise or recognition, Patent Owner additionally fails to assert or explain any nexus, such as whether these citations relate specifically to the invention claimed in the '554 patent as opposed to other portions of the '554 disclosure. And even taking at face value Patent Owner's contention that the articles it cites confirm that a large number of prior art citations to a patent in subsequently filed applications may be evidence of industry praise, we have no way to evaluate Patent Owner's evidence relating to the number of citations to the '554 patent to determine whether, in this case, the factors before us (e.g. the date of issuance of the '554 patent and the number of citations to the '554 patent since issuance) do in fact evince industry praise by the measure put forth in the articles.

For these reasons, we have considered Patent Owner's objective indicia of nonobviousness and determine they carry little weight as compared to the strong evidence of obviousness discussed below. As the parties discuss the claims collectively in addressing objective indicia of nonobviousness, this determination applies to all claims on the grounds advanced by Petitioner.

*F. Obviousness of Claims 1–4, 8, 17–20, 24, 33–36, and 38
Horowitz and Kalasapur*

Petitioner contends the subject matter of claims 1–4, 8, 17–20, 24, 33–36, and 38 would have been obvious over the combination of Horowitz and Kalasapur. Pet. 6–41. Patent Owner disputes Petitioner's contentions. PO Resp. 11–44 (arguments relating to Horowitz and Kalasapur), 68–74 (arguments relating to objective indicia of nonobviousness); PO Sur-reply 1–8 (arguments relating to Horowitz and Kalasapur), 12–13 (arguments relating to objective indicia of nonobviousness).

1. Claim 1

Petitioner argues that claim 1 would have been obvious over Horowitz and Kalasapur. Pet. 10–30. Patent Owner presents arguments regarding the asserted obviousness. PO Resp. 11–39; PO Sur-reply 1–7.

a) Preamble: “A user device comprising:”

Petitioner relies on Horowitz’s consumer computing device 102 and user computing device 122 as teaching the claimed user device, contending that “Horowitz discloses the same user device can act as user computing device 102 at one time (to request media access patterns) and act as consumer computing device 122 at another time (to request media items).” Pet. 10–12 (citing Ex. 1005 ¶¶ 26, 27, 29, 34, 36, 50; Ex. 1003 ¶¶ 62–64).⁵ Petitioner cites Horowitz’s disclosures that “a user of the system can also be a consumer” and that a “user can turn into a consumer.” *Id.* at 11–12 (quoting Ex. 1005 ¶ 26; citing Ex. 1005 ¶¶ 27, 36; Ex. 1003 ¶ 64); Pet. Reply 1–2 (citing Ex. 1005 ¶¶ 4, 26, 34, 36, 60).

Patent Owner argues that “Consumer computing device 102 and User computing device 122 in *Horowitz* are distinct and separate devices, with different roles and access rights, as well as different concerns relat[ing] to security and privacy” and that therefore there is no device in Horowitz that includes functions described with relation to the consumer computing device and the user computing device. PO Resp. 21–24 (citing Ex. 2014 ¶¶ 75–78); PO Sur-reply 1–3.

Patent Owner argues that security concerns would be implicated if user capabilities (such as learning geographical locations of other

⁵ We do not determine whether the preamble of claim 1 is limiting because we find that Horowitz discloses the preamble.

consumers) were provided in a consumer computing device, and this would allow a consumer to access other consumers' data for nefarious purposes. PO Resp. 12–13, 22–23 (citing Ex. 2014 ¶¶ 62, 76–77). Patent Owner additionally argues that a user would want to keep consumer media access patterns proprietary. PO Resp. 13, 22–23 (citing Ex. 2014 ¶¶ 62, 76).

All of these security concerns appear to relate to Horowitz's user functionality being provided to Horowitz's consumers, and none relate to issues concerning the provision of consumer functionality to Horowitz's users. Ex. 2014 ¶¶ 62, 76–77. Patent Owner and its declarant agree that the security concerns “do not apply . . . to a usage case” under which “a (higher-privileged) User turns into a (lower-privileged) Consumer to access and play their own desired media.” Ex. 2014 ¶ 78; PO Resp. 23–24. This appears to be the case that Petitioner argues Horowitz discloses, namely, a device that combines user device and consumer device functions for a user, that is, for someone who already has access to query the system for stored media access patterns, or alternatively argues for in its contention that one of ordinary skill in the art “would have understood that a single user device can be equipped to perform the functions of both consumer computing device 102 and user computing device 122.” Pet. 11–12 (citing Ex. 1005 ¶¶ 26, 27, 36; Ex. 1003 ¶ 64). Thus, we focus on Patent Owner's additional arguments (other than security) regarding Petitioner's arguments relating to Horowitz's teachings relating to a user device including consumer computing device functions.

Patent Owner's declarant Dr. Goodrich testified that his understanding of Horowitz was that a user computing device could not function as a consumer computing device, and that for a Horowitz user to “turn into a [Horowitz] consumer” (as disclosed at Ex. 1005 ¶ 26) the user would “go[] over to a consumer computing device to then play some music.” Ex. 1025,

50:3–55:19; *see* Tr. 42:20–43:7 (“Horowitz discloses that a user can become a consumer . . . by switching to a consumption device where their media access patterns can be logged.”). Patent Owner argues that “*Horowitz* purposefully uses two separate devices for at least the reason that the Consumers and Users in *Horowitz* have different roles, with Consumers playing media content such as songs and Users querying the media provider system to determine Consumer media access patterns.” PO Resp. 13 (citing Ex. 2014 ¶ 62).

However, as Petitioner argues, these contentions regarding Horowitz teaching or suggesting only two separate devices for a user that wishes to consume media are called into question by the disclosure in Horowitz that an industry user can generate a playlist using the Horowitz user device and that the playlist can be copied to a local music player associated with the user interface and “played immediately” in “the media player associated with [the] user interface,” thus allowing the user “to access the media in the generated playlist *as any other media consumer*.” Ex. 1005 ¶ 60 (emphasis added); Pet. Reply 2–3 (citing Ex. 1005 ¶¶ 26, 53, 60, Fig. 5).⁶

Lastly, Patent Owner argues that a device in which consumer computing device functionality is provided in a user computing device would not support location determination for the user computing device, since the user already knows their usage access patterns. PO Resp. 22–23 (citing Ex. 2014 ¶ 78). However, as Petitioner argues, Horowitz teaches or suggests that, when a user becomes a consumer, it requests media items

⁶ Patent Owner argues that Petitioner’s use of Figure 11 of Horowitz (Pet. Reply 3) is improper. PO Sur-reply 1; Tr. 43:8–11. As we do not rely on these arguments by Petitioner, we do not make a determination regarding the propriety of arguments relating to Figure 11.

from the media provider, and that no distinction is made with respect to the inclusion of the location of the requesting device taught in Horowitz between a consumer request and the request from a user acting “as any other media consumer.” Pet. Reply 2–3 (quoting Ex. 1005 ¶ 60; citing Ex. 1005 ¶¶ 26, 53, 60, 83).

Based on the foregoing discussion and a review of the record, including consideration of Patent Owner’s evidence and arguments as presented in the Response and Sur-reply, we agree with Petitioner that Horowitz teaches or suggests a Horowitz user device including the described functionality of the Horowitz consumer device.

b) Element 1a: “a media player component adapted to interact with a media item”

Petitioner cites Horowitz for this limitation. Pet. 12–13. Horowitz discloses that a user device (which Petitioner associates with consumer computing device 102 and user computing device 122) includes a media player adapted to interact with a media item such that “a media player such as iTunes, Windows Media Player or Yahoo! Music Jukebox” is used “to request media content,” and subsequently “the media content is rendered.” *Id.* at 12 (quoting Ex. 1005 ¶¶ 23, 47, 60, 83; citing Ex. 1003 ¶ 66).

Petitioner contends a person of ordinary skill in the art “would have understood that *Horowitz*’s consumer computing device 102 and user computing device 122 include a media player adapted to interact with a media item, such as requesting access to (e.g., downloading, streaming) a media item or playing a media item.” *Id.* at 12–13 (citing Ex. 1003 ¶ 66).

Except for arguing that this component is taught only in Horowitz’s consumer device and not in its user device, which we have addressed above, Patent Owner does not dispute that Horowitz teaches or suggests this

limitation. PO Resp. 24–25. Based on the foregoing discussion and a review of the record, including consideration of Patent Owner’s evidence and arguments as presented in the Response and Sur-reply, we agree with Petitioner that Horowitz teaches or suggests a user device comprising a media player component adapted to interact with a media item.

c) Element 1b: “a communication interface component adapted to provide media item information identifying the media item”

Petitioner contends Horowitz discloses that the computing device includes “network connection 214” that enables the communication between computing devices 102 and 122 and media provider 106 via data network 104. Pet. 13–14 (citing Ex. 1005 ¶¶ 29, 42, 50; Ex. 1003 ¶ 68).

Petitioner further contends network connection 214 (communication interface component) can be used to “request a music file from the media provider 106.” *Id.* at 15 (quoting Ex. 1005 ¶ 29; citing Ex. 1003 ¶ 69). Petitioner further contends that, upon receiving the “request,” media provider 106 “searches the media database 114 and retrieves the correct media files corresponding to the request” and “stores a collection of user requests of media and corresponding information of the requested media.” *Id.* (quoting Ex. 1005 ¶ 29, 30, 33; citing Ex. 1003 ¶ 69).

Except for arguing that Petitioner’s indicated network connection 214 is found in Horowitz’s consumer device and not in its user device, rooted in its arguments regarding the complete separation in functionality between these devices, as addressed above, Patent Owner does not dispute that Horowitz teaches or suggests this limitation. PO Resp. 26–27. Based on the foregoing discussion and a review of the record, including consideration of Patent Owner’s evidence and arguments as presented in the Response and Sur-reply, we agree with Petitioner that Horowitz teaches or suggests a user

device comprising a communication interface component adapted to provide media item information identifying the media item.

d) Element 1c: “the communication interface component adapted to provide location information identifying a geographic location associated with the user device at which the media item was interacted with”

Petitioner relies on a combination of Horowitz and Kalasapur for this limitation. Pet. 15–18. Petitioner contends Horowitz discloses that consumer computing device 102 provides “the dynamic IP address associated with the consumer computing device 102 at which the consumer making the request was located” to media provider 106 via network connection 214 (communication interface component). *Id.* at 16 (quoting Ex. 1005 ¶ 48; citing Ex. 1003 ¶ 71). Petitioner further contends that media provider 106 is configured to “map IP addresses to geographic locations [] to determine the geographic location of the consumer making the request” using “[k]nown lookup tables and/or software.” *Id.* (quoting Ex. 1005 ¶ 32; citing Ex. 1003 ¶ 71) (alterations in original).

Petitioner contends Kalasapur discloses a consumer electronics device (e.g., a cell phone) having a GPS sensor to provide GPS-based geographic location information of the device to a monitoring module (e.g., a computer) over a network. Pet. 17 (citing Ex. 1006, 2:19–33, 6:42–47, Fig. 4; Ex. 1003 ¶ 74). Petitioner further contends Kalasapur discloses monitoring module 102 monitoring user-media interaction and associated user context “every time the user interacts with a media item via the media player.” *Id.* (quoting Ex. 1006, 3:44–48; citing Ex. 1003 ¶ 74). Petitioner also contends the monitored user context includes “the location(s) of interaction” obtained by “utilizing a location sensor (e.g., a global positioning system (GPS)).” *Id.* (quoting Ex. 1006, 3:51–52, 2:25–28; citing Ex. 1006, 4:1–23; Ex. 1003

¶ 74). Thus, according to Petitioner, Kalasapur expressly discloses providing the “location information” to monitoring module 102. *Id.* (citing Ex. 1003 ¶ 74).

Petitioner argues that one of ordinary skill in the art would have found it obvious to incorporate Kalasapur’s GPS sensor in Horowitz’s user device to provide accurate location information to the media provider. Pet. 18 (citing Ex. 1003 ¶ 75). Petitioner argues that each of Horowitz and Kalasapur describes monitoring and storing geographic location information associated with a device when a media item is interacted with and that both are directed to providing recommendations of media items based on the locations of user interactions with the media items. *Id.* at 19 (citing Ex. 1005 ¶¶ 5, 32–33, 50–52; Ex. 1006, 2:11–33, 3:11–18, 3:44–52; Ex. 1003 ¶ 76). Petitioner argues that incorporating a GPS sensor would improve the accuracy of the location information used in Horowitz and that GPS technology was commonly implemented in user devices at the time of the ’554 patent and would have provided more refined location information that would balance the cost of the GPS sensor. *Id.* at 19–21 (citing, *inter alia*, Ex. 1007 ¶ 28; 1009 ¶¶ 14, 20; Ex. 1003 ¶¶ 77–78). Petitioner additionally argues that one of ordinary skill would have reasonably expected success in so doing. *Id.* at 21–22 (citing Ex. 1006, 2:25–28, 3:11–18, 3:36–52, 4:18–19, 4:45–49; Ex. 1003 ¶ 79).

Patent Owner argues that, unlike Kalasapur, Horowitz is directed to providing a media-industry user with media access patterns of users, not providing recommendations to an end user. PO Resp. 12. We are not persuaded in Patent Owner’s arguments of an issue with the analogousness of Horowitz or Kalasapur to the claimed invention, and find each to be proper analogous art and at least reasonably pertinent to the problems

addressed in the '554 patent. *See In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

Patent Owner further argues that one of ordinary skill would not have found it obvious to add any GPS sensor of Kalasapur to the combined consumer computing device and user computing device of Horowitz, as Horowitz's devices are not disclosed as being portable, would have been implemented as personal computers, and are described as having a wired, rather than a wireless, network interface. PO Resp. 14–15 (citing Ex. 2014 ¶¶ 64–65). Patent Owner contends that Horowitz discloses for consumer devices only a static consumer location, the use of an IP address rather than a geographic location, and manually inputted geographic locations. *Id.* at 15–16 (citing Ex. 1003 ¶¶ 31, 65–66, 78; Ex. 2014 ¶ 65). Patent Owner additionally contends that adding a GPS sensor to mobile computing devices was not common or routine in 2007. *Id.* at 16–17 (citing Ex. 2014 ¶ 67). Patent Owner argues that “*Horowitz* does not consider making media recommendations to a user based on a determined location of a user device.” *Id.* at 18 (citing Ex. 2014 ¶ 68). Patent Owner makes additional arguments relying on its arguments regarding the separation of user functionality and consumer functionality into different devices in Horowitz, as we addressed above. *Id.* at 12–13, 18–21. Additionally, according to Patent Owner, Kalasapur's monitor 102 and playlist generator 106 are described as running on home personal computer 123, distinct from cell phone 131 (i.e., user device). *Id.* at 19, 25–26 (citing Ex. 1006, 6:26–47).

We agree with Petitioner, however, that Horowitz is not limited to stationary devices. *See* Pet. Reply 9–10 (citing, *inter alia*, Ex. 1005 ¶¶ 47 (describing a consumer having utilizing a media player), 60 (describing a user “travel[ing] to a destination”); Ex. 1006, 6:42–44, Fig. 4 (describing

media players in portable devices); Ex. 1007 ¶¶ 3, 4 (describing portable devices that are or incorporate media players)). Additionally, we do not agree with Patent Owner that any added complexity or expense would critically militate against the proposed combination. *See* Pet. Reply 10–11.

We agree with Petitioner that one of ordinary skill in the art would have incorporated the GPS sensor in Horowitz’s device in order to provide GPS location technology to perform the determination of the consumer making the request. *See* Pet. 16–18 (citing Ex. 1005 ¶¶ 32, 48; Ex. 1006, 2:19–33, 3:51–52, 6:42–47, Fig. 1; Ex. 1003 ¶¶ 71–74).

Patent Owner further argues that Kalasapur does not use the GPS to provide location information identifying a geographic location of an interaction, but rather context information associated with interactions. PO Resp. 28–34 (citing Ex. 1006, 2:19–20, 4:11–22, 4:54–57, Figs. 1–3; Ex. 2014 ¶¶ 95, 97–101); PO Sur-reply 3–4. Patent Owner argues Kalasapur recites “a monitoring module monitors (obtains) user context such as user activity, time/date, and the current location of the user by utilizing a location sensor (e.g., a global positioning system (GPS)), or querying the user, etc.” *Id.* at 30 (quoting Ex. 1006, 2:25–28). That is, Patent Owner contends that Kalasapur provides only a category of location (“anywhere,” “car,” “home,” or “work”) rather than a specific geographic location. PO Resp. 30–33. However, as Petitioner argues, the categorical implementation of Kalasapur is based on the disclosure regarding Figure 3 of Kalasapur, and is an implementation that does not limit the rest of Kalasapur’s disclosure. Pet. Reply 4–5. Additionally, Kalasapur teaches that “current location” information is provided to the monitoring module by a GPS, even if it is stored in a categorical data structure. Ex. 1006, 2:19–20, 2:25–28 (“a monitoring module monitors (obtains) user context such as . . . the current

location of the user by utilizing a location sensor (e.g., a global positioning system (GPS))”, 3:11–16, 4:1–7 (“In one implementation, information about user-media interaction and associated context is stored . . . using a data structure . . . as shown in FIG. 3”). Patent Owner argues that the GPS of Kalasapur would be used only “to determine whether someone is moving at a speed consistent with walking or driving, or is relatively static, as in a home or office.” PO Resp. 33. However, this appears at odds with the discussion in Kalasapur that user location is a different “dimension” captured than speed, and that “if a device is equipped with a GPS, then location is a dimension in addition to time. If a device is additionally equipped with an accelerometer, then speed is an additional dimension.” Ex. 1006, 4:17–22.

Based on the foregoing discussion and a review of the record, including consideration of Patent Owner’s evidence and arguments as presented in the Response and Sur-reply, we agree with Petitioner that the combination of Horowitz and Kalasapur teaches or suggests a user device comprising a communication interface component adapted to provide location information identifying a geographic location associated with the user device at which the media item was interacted with.

e) Elements 1d, 1e, 1f

Petitioner relies on both Horowitz and Kalasapur for limitation 1d. Pet. 22–26. Petitioner contends Horowitz discloses receiving “a geographic indicator corresponding to a geographic area” via a user interface. *Id.* at 22 (quoting Ex. 1005 ¶ 51; citing Ex. 1005, Fig. 4). As noted above, Kalasapur teaches or suggests a user device including a GPS sensor for determining the current location of the user device. *See id.* at 25 (citing Ex. 1006, 2:25–28, 4:18–19).

Petitioner relies on Horowitz as teaching limitation 1e. Pet. 26–28. Petitioner contends Horowitz discloses that the communication interface component (e.g., network connection 214) in the user device (e.g., user computing device 122) receives information that identifies a second media item (e.g., a top ten list in the geographic area selected by the user), where location information associated with the second media item is associated with the identified geographic area. *Id.* (citing Ex. 1005 ¶¶ 34, 35, 52, 67, 84; Ex. 1003 ¶¶ 85–86).

Petitioner relies on Horowitz as teaching limitation 1f. Pet. 28–29. Petitioner contends Horowitz discloses that the user device (e.g., user computing device 122) includes a user interface component (e.g., user interface 1100) adapted to present, via the user device, the information that identifies the second media item. *Id.* (citing Ex. 1005 ¶¶ 66, 67, 91, Fig. 11; Ex. 1003 ¶¶ 87–88).

Patent Owner argues these limitations relying on its arguments regarding the separation of user functionality and consumer functionality into different devices in Horowitz, as we addressed above. PO Resp. 35–39. Patent Owner additionally relies on its urged construction of “location determination component” as determining the location of the user device. *Id.* at 35. Patent Owner also reiterates its arguments relating to the propriety of the proposed Horowitz and Kalasapur combination. *Id.* at 36. These arguments have also been previously addressed herein.

Based on our review of the record, including consideration of Patent Owner’s evidence and arguments as presented in the Response and Sur-reply, we agree with Petitioner that the combination of Horowitz and Kalasapur teaches or suggests limitation 1d and that Horowitz teaches or suggests limitations 1e and 1f.

f) Summary as to Claim 1

For the reasons discussed above, Petitioner persuasively establishes by a preponderance of the evidence that the combination of Horowitz and Kalasapur would have rendered claim 1 obvious.

2. Claims 17 and 33

Claims 17 and 33 are independent claims directed to a non-transitory computer readable medium storing software for instructing a controller of a computing device to perform certain actions (claim 17) and to a method comprising certain steps (claim 33). Ex. 1001, 27:37–52, 28:51–67. The actions and steps of these claims relate substantially to the actions the elements of claim 1’s user device are adapted to perform. With respect to claims 17 and 33, Petitioner relies substantially on its arguments with respect to claim 1. Pet. 35–37, 38–40.

Petitioner relies, for the preamble of claim 17, on the disclosure in Horowitz of a non-transitory computer readable medium for instructing a controller of a computing device in Horowitz’s computing device including microprocessors and a memory storing application software. Pet. 35–36 (citing Ex. 1005 ¶¶ 41, 43, Fig. 2; Ex. 1003 ¶ 103). Petitioner relies, for the preamble of claim 33, on the disclosure of a method in Horowitz. *Id.* at 38 (citing Ex. 1005, code (57), ¶ 5; Ex. 1003 ¶ 115).

Patent Owner relies only on arguments previously addressed with respect to these claims. PO Resp. 42–44.

We do not determine whether the preamble of claims 17 and 33 are limiting because we find that Horowitz discloses these preambles.

Based on our review of the record, including consideration of Patent Owner’s evidence and arguments as presented in the Response and Sur-reply, Petitioner persuasively establishes by a preponderance of the evidence

that the combination of Horowitz and Kalasapur would have rendered claims 17 and 33 obvious.

3. Claims 2, 18, and 34

Claim 2 depends from claim 1 and adds the limitation that the media player component is adapted to initiate play of the media item. Ex. 1001, 26:52–53. Petitioner argues that Horowitz discloses a media player component that initiates play of a media item in a top ten list. Pet. 30–31 (citing Ex. 1005 ¶ 23, Fig. 11; Ex. 1003 ¶ 92).

Claims 18 and 34 add similar limitations to the claims from which they depend and are argued by Petitioner with reference to claim 2. Pet. 37, 41.

Patent Owner relies only on arguments with respect to the claims from which these claims depend. PO Resp. 39, 43, 44.

Based on our review of the record, including consideration of Patent Owner's evidence and arguments as presented in the Response and Sur-reply, Petitioner persuasively establishes by a preponderance of the evidence that the combination of Horowitz and Kalasapur would have rendered claims 2, 18, and 34 obvious.

4. Claims 3, 4, 19, 20, 35, and 36

Claim 3 depends from claim 1 and adds the limitation that the location determination component is adapted to determine the current location of the user device. Ex. 1001, 26:54–56. Claim 4 depends from claim 3 and adds the limitation that the geographic area includes the current location of the user device. *Id.* at 26:57–58.

Petitioner argues that the additional limitation of claim 3 would have been obvious in view of Kalasapur's disclosure of a device having a GPS sensor to determine the current location of the device, and that it would have

been obvious to incorporate this into Horowitz's device to provide accurate location information. Pet. 31–32 (citing Ex. 1006, 2:25–28, 4:18–19; Ex. 1003 ¶ 94). Petitioner further argues that the additional limitation of claim 4 would have been obvious in view of the discussion in Horowitz that a user with access to media access patterns can obtain access to the patterns relating to the city the user is in. *Id.* at 32 (citing Ex. 1005 ¶ 60; Ex. 1003 ¶ 96). Petitioner also cites Kalasapur's teachings regarding the geographic location of the user being used to determine recommendations for the user. *Id.* at 32–33 (citing Ex. 1006, 3:32–43; Ex. 1003 ¶ 97). Petitioner refers to these arguments with respect to the similar additional limitations of claims 19, 20, 35, and 36. *Id.* at 38, 41.

Patent Owner does not present in its papers any separate arguments that are distinct to any of these dependent claims, and therefore, has waived such arguments. *See* 37 C.F.R. § 42.23(a) (“Any material fact not specifically denied may be considered admitted.”); *In re NuVasive, Inc.*, 842 F.3d 1376, 1379–82 (Fed. Cir. 2016) (holding that patent owner waived arguments on an issue that were not raised in its response after institution); *see also Papst Licensing GmbH & Co. KG v. Samsung Elecs. Am., Inc.*, 924 F.3d 1243, 1250 (Fed. Cir. 2019) (holding patent owner forfeited argument for patentability not presented to the Board); *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1048 (Fed. Cir. 2019) (explaining that arguments not presented to the Board are waived). Rather, Patent Owner generally is of the view its alleged deficiencies in the Petition with respect to claim 1 are also applicable to claims 3, 4, 19, 20, 35, and 36. *See* PO Resp. 39, 43, 44; Tr. 57:12–58:16.

Based on our review of the record, including consideration of Patent Owner's evidence and arguments as presented in the Response and Sur-

reply, Petitioner persuasively establishes by a preponderance of the evidence that the combination of Horowitz and Kalasapur would have rendered claims 3, 4, 19, 20, 35, and 36 obvious.

5. Claims 8, 24, and 38

Claim 8 depends from claim 1 and adds the limitation that “the user interface component is adapted to present the information that identifies the second media item in association with a map including the geographic area.” Ex. 1001, 27:1–4.

Petitioner presents two different arguments relating to the unpatentability of claim 8. In Petitioner’s first argument, Petitioner contends that the additional subject matter of claim 8 would have been obvious in view of Horowitz’s teaching that a user interface can include a cursor that can be used to select an area in a map, and that upon such selection, the user is provided with a display of media access patterns (including a second media item associated with the identified geographic area). Pet. 33–34 (citing Ex. 1005 ¶¶ 24, 67, 71, Fig. 6; Ex. 1003 ¶ 99). In Petitioner’s second argument, Petitioner asserts that, to the extent the claim requires both the map and the information of claim 8 to be presented in the same media interface, it would have been obvious to one of ordinary skill in the art to remind the user of the geographic area identified, and to provide for changes of selection while continuing to view media access patterns, improving the user experience. *Id.* at 34 (citing Ex. 1003 ¶ 100). We need not resolve the underlying claim construction issue, because we are persuaded that Petitioner meets its burden under either interpretation.

With respect to Petitioner’s first argument, we agree with Petitioner that the cited disclosures of Horowitz teach or suggest the additional limitation of claim 8 in its use of a map displayed through an interface

component to allow a user to identify a geographic area and the subsequent (and associated) presentation of information through the interface component identifying the second media item. Petitioner's first argument relies only on the disclosure in Horowitz that a user interface displays media access patterns corresponding to a selected geographic area after the user selects the area in a map. *Id.* at 33. Patent Owner's only arguments with respect to this reiterate or refer back to its previous arguments relating to the requirement that Horowitz's user device be separate from any consumer device, addressed above. PO Resp. 40–41; PO Sur-reply 7. We have addressed those arguments above.

We additionally consider the evidence and arguments regarding the reading of claim 8 suggested in Petitioner's second argument. Petitioner argues that one of ordinary skill in the art would have modified Horowitz to show the map and list in tandem to improve user experience. Pet. 34 (citing Ex. 1003 ¶ 100).

Patent Owner argues that one of ordinary skill would not have found it obvious to display a map and list at the same time because:

Horowitz discloses several different interface designs, e.g. in Figs. 5–11, and described at [0054]–[0091], including components such as maps, regions selectors, time/date selectors, media source selectors, age group filters, gender filters, ethnicity filters, and top picks reports. [One of ordinary skill in the art] would understand that in the context of *Horowitz* it would not be obvious to create an association between a second media item and a map including the geographic area, for at least the reason that it would use up precious real estate in the display of *Horowitz* and potentially create confusing interactions.

PO Resp. 41 (citing Ex. 1005 ¶¶ 41, 54–91, Figs. 5–11; Ex. 2014 ¶¶ 130–131).

In light of the disclosure in Horowitz of requesting and viewing media access patterns in one or more geographic areas, and after weighing the testimony of both declarants, we find that the preponderance of the evidence supports Petitioner's argument that one of ordinary skill in the art would have found this limitation obvious over the teachings of Horowitz. As Petitioner notes, Horowitz describes an exemplary selection of a customized geographic area in which an interface including a map is presented, a cursor is used to select an area on the map, and the user is provided with a user interface that displays media access patterns in that area. Ex. 1005 ¶ 67, Fig. 6. While a more complex or crowded user interface may have both drawbacks and advantages, as seen in Petitioner's and Patent Owner's declarants' testimony, upon consideration of the evidence, we determine that the modification would have been obvious to one of ordinary skill of the art at the time. *Cf. In re Fulton*, 391 F.3d 1195, 1200–01 (Fed. Cir. 2004) (in examination of motivation to combine, determination is whether the combination would be desirable, not whether it would be “the *most desirable* combination available”).

For these reasons, Petitioner persuasively establishes by a preponderance of the evidence that the combination of Horowitz and Kalasapur would have rendered claim 8 obvious.

Claims 24 and 38 add similar limitations to the claims from which they depend and are argued by Petitioner with reference to claim 8. Pet. 38, 41. Likewise, Patent Owner relies on its arguments with respect to claim 8 for these claims. PO Resp. 43, 44. Thus, for the same reasons, Petitioner also persuasively establishes by a preponderance of the evidence that the combination of Horowitz and Kalasapur would have rendered claims 24 and 38 obvious.

*G. Obviousness of Claims 1–4, 17–20, and 33–36
Rosenberg and Landschaft*

Petitioner contends claims 1–4, 17–20, and 33–36 would have been obvious over a combination of Rosenberg and Landschaft. Pet. 42–80. Patent Owner disputes these contentions. PO Resp. 44–68; PO Sur-reply 8–12. Because the Horowitz/Kalasapur obviousness ground is dispositive as to all challenged claims, we do not reach Petitioner’s challenge based on Rosenberg and Landschaft. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (non-precedential) (recognizing that “[t]he Board has the discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”).

III. CONCLUSION⁷

Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 1–4, 8, 17–20, 24, 33–36, and 38 of the ’554 patent would have been obvious over the combination of Horowitz and Kalasapur.

IV. ORDER

In consideration of the foregoing, it is hereby:

⁷ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

ORDERED that claims 1–4, 8, 17–20, 24, 33–36, and 38 of the '554 patent are unpatentable; and

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

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–4, 8, 17–20, 24, 33– 36, 38	103	Horowitz, Kalasapur	1–4, 8, 17–20, 24, 33–36, 38	
1–4, 17– 20, 33– 36	103	Rosenberg, Landschaft ⁸		
Overall Outcome			1–4, 8, 17–20, 24, 33–36, 38	

⁸ We do not reach this ground because we have determined these claims to be unpatentable under the other ground. *See supra* § II.G.

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FOR PETITIONER:

Erika H. Arner
Kara A. Specht
Yi Yu
FINNEGAN, HENDERSON, FARABOW,
GARRETT, & DUNNER LLP
erika.arner@finnegan.com
kara.specht@finnegan.com
yi.yu@finnegan.com

FOR PATENT OWNER:

Howard N. Wisnia
WISNIA PC
howard@wisnialaw.com

Nicholas Wyss
NIX PATTERSON, LLP
nwyss@nixlaw.com