

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FOURSQUARE LABS, INC.,
Petitioner,

v.

MIMZI, LLC,
Patent Owner.

IPR2019-01287
Patent 9,128,981 B1

Before JAMESON LEE, STACEY G. WHITE,
and NORMAN H. BEAMER, *Administrative Patent Judges*.

BEAMER, *Administrative Patent Judge*.

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

I. INTRODUCTION

On June 28, 2019, Foursquare Labs, Inc. (“Petitioner”) filed a Petition pursuant to 35 U.S.C. §§ 311–319 to institute an *inter partes* review of claims 1–19 of U.S. Patent No. 9,128,981 B1 (Ex. 1001, “the ’981 patent”). Paper 1 (“Pet.”). Subsequent to the filing of the Petition, Patent Owner Mimzi filed a Preliminary Response and an authorized Sur-Reply Petitioner filed an authorized Reply. Papers 7, 10, 9.

On January 14, 2020, applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we instituted an *inter partes* review of claims 1–19. Paper 11. In the Institution Decision, we determined that Petitioner demonstrated a reasonable likelihood that it would prevail as to the challenged claims, and we instituted trial on all challenged claims and all grounds in the Petition. Institution Dec. 37–38. Patent Owner subsequently requested a rehearing of the Decision to Institute, which request was denied. Papers 14, 20

On April 16, 2020, Patent Owner filed its Response to the Petition. Paper 18 (PO Resp.). On July 9, 2020, Petitioner filed a Reply to Patent Owner’s Response, and on August 11, 2020, Patent Owner filed a Sur-Reply. Paper 23 (Reply); Paper 25 (Sur-Reply). Also, Petitioner has filed a Motion To Exclude, Patent Owner has filed an Opposition to the Motion To Exclude, and Petitioner has filed a Reply to the Opposition to the Motion To Exclude. Papers 28, 31, 32.

An oral hearing took place on October 20, 2020. The Hearing Transcript (“Tr.”) is included in the record as Paper 33. After considering the parties’ arguments and supporting evidence, we determine that Petitioner

has proved by a preponderance of the evidence that claims 1–19 of the '981 patent are unpatentable. 35 U.S.C. § 316(e).

II. BACKGROUND AND SUMMARY

A. *The '981 Patent*

The '981 patent, titled “Phone Assisted ‘Photographic Memory,’” was filed March 21, 2015, and issued September 8, 2015. Ex. 1001, codes (54), (22), (45). The patent recites, as “related” application data, that it is a:

[c]ontinuation of application No. 14/321,332, filed on Jul. 1, 2014, which is a continuation of application No. 12/181,956, filed on Jul. 29, 2008, now Pat. No. 8,775,454, application No. 14/664,841, which is a continuation of application No. 13/900,495, filed on May 22, 2013, which is a division of application No. 12/181,956, filed on Jul. 29, 2008, now Pat. No. 8,775,454.

Id. at code (60).

The patent is directed “to using a phone to record phone calls, meetings and dictation, and for storing the metadata, audio and/or speech recognized text into a centralized content searchable repository, so that all or most of all conversations and near everything seen or read can be searched with a single query.” *Id.* at 1:14–19. The '981 patent describes using the phone to collect a variety of types of information, including recording phone calls, recording the audio of a face-to-face meeting, and recording an audio description of pictures and video taken from the camera of a phone (e.g., of notes on a notepad, a whiteboard, and an article). *Id.* at 3:23–36. Speech recognition is applied to the audio of the phone calls, meetings, and descriptions of pictures and videos to create transcripts so that these sources of information can be searched. *Id.* at 3:25–28. In addition to recording the above information, the phone also

records metadata, such as the date, time, name, or location information of the recorded information. *Id.* at 2:31–34.

For example, the phone can record the date and location of the phone when a picture is taken. *Id.* at 3:40–50. In this way, conversations, pictures and video can be searched by date, time, and location, as well as by the speech-recognized text of the recorded audio. *Id.* at 3:46–50.

The '981 patent describes an embodiment where the text transcripts may contain timestamps. *Id.* at 5:58–60. The start date and start time of the call or dictation may be read from the metadata, and the start date, start time, and relative timestamp may be added for each word in the transcript. *Id.* at 7:23–31. In addition, location coordinates also may be added next to each timestamp for each word in the transcript. *Id.* at 7:39–47.

B. Illustrative Claim

Petitioner challenges claims 1–19. Claims 1, 10, and 16 are the independent claims. Claim 10 is illustrative and is reproduced below:

10. A computer-implemented method for presenting social-network-provided information records from a social network database comprising a plurality of social network-provided information records to a mobile-electronic-device user in response to the user's spoken request, comprising:

receiving speech information from the mobile-electronic-device user;

storing the transcript of the spoken request and metadata associated with the spoken request comprising at least a location associated with the user during the spoken request;

automatically selecting a plurality of social-network-provided information records with at least one automated processor, by searching the social-network for information records using both the location and the transcript;

ranking the plurality of selected social network-provided information records with the at least one automated processor, dependent on at least one social network ranking factor and

communicating at least a portion of the selected social-network-provided information records to the user in a manner dependent on the at least one social network ranking factor.

Ex. 1001, 17:4–26.

C. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–19 of the '981 patent on the following grounds (Pet. 7):

Claims Challenged	35 U.S.C. §	References
1–6, 8–10, 12–18	103	Evermann ¹
1–18	103	Evermann, Yoo ²
1–19	103	Ramer ³ , Hayashi ⁴

In addition, Petitioner relies on declarations of Dr. Ali Khosh (“Khosh Decl.”, Ex. 1015; “Khosh 2nd Decl.”, Ex. 1018) in support of the asserted grounds of unpatentability.

¹ Evermann, US 2008/0154612 A1, filed Feb. 12, 2007, published June 26, 2008 (Ex. 1002, “Evermann”).

² Yoo, US 2009/0281988 A1, filed May 6, 2008, published Nov. 12, 2009 (Ex. 1003, “Yoo”).

³ Ramer, US 2007/0061302 A1, published Mar. 15, 2007 (Ex. 1004, “Ramer”).

⁴ Hayashi, US 2007/0255831 A1, filed Apr. 28, 2006, published Nov. 1, 2007 (Ex. 1005, “Hayashi”).

In response, Patent Owner relies on the Declaration of Dr. Jose Luis Melendez (“Melendez Decl.”, Ex. 2017).

D. Real Parties in Interest

The parties identify themselves as real parties in interest. Pet. 77; Paper 15, 2.

E. Related Matters

The parties identify the following matters as related to this case: *Mimzi, LLC v. Foursquare Labs, Inc.*, Case No. 1:18-cv-01767 (D. Del.); *Mimzi, LLC v. TripAdvisor, Inc. et al.*, Case No. 1:18-cv-01768 (D. Del.); *Mimzi, LLC v. Acer, Inc.*, Case No. 1:19-cv-00272 (D. Del.); *Mimzi, LLC v. ASUSTek Computer Inc.*, Case No. 1:19-cv-00273 (D. Del.); *Mimzi, LLC v. HTC Corporation*, Case No. 1:19-cv-00274 (D. Del.); *TripAdvisor, LLC v. Mimzi, LLC*, IPR2019-01080 (PTAB); *Microsoft Corp. et al. v. Mimzi, LLC*, IPR2019-01516 (PTAB). Pet. 77; Paper 15, 2–3.

III. ANALYSIS

A. Legal Standards — Obviousness

A claim is unpatentable under 35 U.S.C. § 103(a) 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). As discussed further in Section III.D below, pursuant to the Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) (“AIA”), the obviousness determination is as of the “effective filing date of the claimed invention.” AIA 35 U.S.C. § 103; MPEP § 2158.

The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations, including commercial success, long-felt but unsolved needs, failure of others, and unexpected results (“the *Graham* factors”). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

If the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that “there was an apparent reason to combine the known elements in the fashion claimed.” *KSR*, 550 U.S. at 418. Such a showing requires “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.* (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

In general, obviousness entails an inquiry that is “expansive and flexible” and takes into account “the inferences and creative steps that a person of ordinary skill in the art would employ” when presented with the teachings of the prior art. *KSR*, 550 U.S. at 415–18. Under this flexible approach, it can be important to identify “a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements” in the way claimed. *Takeda Chem. Ind., Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356–57 (Fed. Cir. 2007). Such reason may be found “explicitly or implicitly in market forces; design incentives; the interrelated teachings of multiple patents; any need or problem known in the field of endeavor at the time of invention and addressed by the patent; and the background

knowledge, creativity, and common sense of the person of ordinary skill.” *ZUP, LLC v. Nash Mfg., Inc.*, 896 F.3d 1365, 1371 (Fed. Cir. 2018) (internal quotations and citations omitted); *see also KSR*, 550 U.S. at 419–20.

Moreover, ““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 his or her skill.”” *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1003 (Fed. Cir. 2016) (quoting *KSR*, 550 U.S. at 417).

“[A] combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 550 U.S. at 416. “[I]n many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. . . . A person of ordinary skill is also a person of ordinary creativity, not an automaton.” *Id.* at 420–421.

“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). “Combining the *teachings* of references does not involve an ability to combine their specific structures.” *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973).

B. Level of Ordinary Skill in the Art

Petitioner contends a person of ordinary skill in the art at the relevant time would have had (1) “a Bachelor of Science Degree in Computer Science, Electrical Engineering, Computer Engineering or equivalent, and about one to

two years of practical experience”; or (2) “a Master’s Degree in Computer Science, Electrical Engineering, Computer Engineering or a closely related field.” Pet. 10 (citing Khosh Decl. ¶ 47).

Patent Owner argues that a person of ordinary skill in the art “must have some familiarity with social network databases (the technology at issue) in addition to Petitioner’s proposed general experience in Computer Science.” PO Resp. 14.

We adopt Petitioner’s description, which we determine to be consistent with the level of skill reflected in the asserted prior art references. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Although the claims of the ’981 patent recite searching a social network database, we find the fields of Computer Science, Electrical Engineering, and Computer Engineering would have provided knowledge related to social networks and database searches at a level commensurate with the disclosure of the ’981 patent, and, thus, we adopt Petitioner’s proposed definition of the level of ordinary skill in the art. As discussed further below, we do not adopt Patent Owner’s construction of the term “social networking,” a consequence of which is that adding the requirement of familiarity with social network databases is not substantially different from knowledge regarding database technology in general.

C. Claim Construction

The Petition was accorded a filing date of June 28, 2019. Paper 4, 1. In an *inter partes* review for a petition filed on or after November 13, 2018, a claim “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b); *see* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial

and Appeal Board, 83 Fed. Reg. 51,340, 51,340, 51,358 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective Nov. 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2019)). *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Under that standard, claim terms generally are given their ordinary and customary meaning, which 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.” *Phillips*, 415 F.3d at 1312–13. “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* at 1313. “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). However, in construing the claims, care should be taken to avoid improperly importing a limitation from the specification into the claims. *See Cont’l Circuits LLC v. Intel Corp.*, 915 F.3d 788, 797–98 (Fed. Cir. 2019) (“[m]ere criticism of a particular embodiment . . . is not sufficient to rise to the level of clear disavowal”; “use of the phrase ‘present invention’ or ‘this invention’ is not always . . . limiting, such as where the references . . . are not uniform, or where other portions of the intrinsic evidence do not support applying the limitation to the entire patent” (citations omitted)). An inventor may provide a meaning for a term that is different from its ordinary meaning by defining the term in the specification with reasonable clarity, deliberateness, and precision. *In re*

Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994). Claim terms need only be construed to the extent necessary to resolve the controversy. *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011).

I. “social network database”

Petitioner proposes that “social network database” should mean “an information storage system for data regarding one or more groups of people that is accessible for search via a central service or platform.” Pet. 11 (citing Khosh Decl. ¶ 55). Petitioner relies on the fact that the ’981 patent “parenthetically defined” social-network in the Abstract as a “Centralized Community Search database.” *Id.* (citing Ex. 1001, Code (57)).

Patent Owner proposes that a “social network database” is “a centralized database that stores the interpersonal relationships among multiple members of the community and the content they contributed to the database.” PO Resp. 18–19 (citing Melendez Decl. ¶¶ 52–62). Patent Owner argues “social network database” cannot be construed as inclusive of any database and that the term “social network” should be given due regard. *Id.* at 17–18. According to Patent Owner, a “social network” is a community of individuals connected by interpersonal relationships. *Id.* at 18.⁵ Like Petitioner, Patent Owner relies on the Abstract of the ’981 patent,

⁵ In support of this definition of the term “social network,” Patent Owner provides a link to a webpage that Patent Owner contends supports their proposed construction. PO Resp. 18; *see* Ex. 2020. As Petitioner points out, the webpage is dated 2020, and is insufficiently probative of how one of ordinary skill in the art would have understood the term “social network” as of any possible effective filing date of the ’981 patent. Reply 5. (As stated in Section III.D, footnote 9, the effective filing date is no earlier than May 22, 2013 and no later than March 21, 2015.) There is not a sufficient sampling of general dictionary definitions or a general dictionary definition from an appropriate time frame. Also, the Specification is the primary basis

characterizing it as “unambiguously defin[ing] a social network database as ‘a centralized community search database.’” *Id.* (citing Ex. 1001, Code (57)).

Patent Owner further argues that the term “social network” is not directed to the content of information, but rather to limitations regarding contributions by multiple members, accessibility by multiple members, and the relationships between them. *Id.* at 19 (citing Melendez Decl. ¶¶ 52–62); Sur-Reply 3.

We agree with Petitioner that the ’981 patent does not support Patent Owner’s attempt to narrow the scope of the claims to require a social network database to store “interpersonal relationships among multiple members of the community and the content they contributed to the database.” Reply 3–5; Khosh 2nd Decl. ¶ 9. The ’981 patent explains that a user may wish to transmit their “text messages, photos, videos, call and voice annotations or synopsis (with speech-recognized text and location data), to a Centralized Community Search database” and that the user may designate this content to be public and “be shared with anyone via the Internet.” Ex. 1001, 14:64– 15:6. The ’981 patent calls the public sharing of information “Location Blogging.” *See* Ex. 1001, 15:1–6. The ’981 patent does not describe databases storing interpersonal relationships among community members. The most detailed description of a social network database in the patent does not involve interpersonal relationships, but rather is a “community of users” who share vehicle identification data wirelessly

for construing the claims. *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985). For these reasons, we accord the single very recent dictionary definition little weight.

transmitted from automobiles that have tire pressure monitoring systems, in order to map the locations of detected vehicles. *Id.* at Fig. 6, 6:22–42, 14:31–56. Significantly, there is no discussion of interpersonal relationships between the “community of users.” *Id.* Other examples of database content include restaurant and business reviews and road hazard warnings — none of which necessarily involve “interpersonal relationships.” *Id.* at 15:10–26.

In addition, as Petitioner argues, dependent claim 4 requires that “the ‘social-network-records’ . . . comprise user reviews of a plurality of restaurants,” which, again, does not require any interpersonal relationships between persons submitting reviews. Reply 4; Khosh 2nd Decl. ¶ 12; Ex. 1001, 16:47–50. In response, Patent Owner argues that the requirement that social-network records “comprise” user reviews nevertheless still means that social-network records also must store interpersonal relationships. Sur-Reply 4. This argument misapprehends the meaning of the word “comprise” in the context of the claims. The use of “comprise” means that a social network database *may* store interpersonal relationships in addition to, or as part of, restaurant reviews — *i.e.*, “comprising” in this context would allow interpersonal relationship content. *See* MPEP § 2111.03 (“The transitional term ‘comprising’ . . . is inclusive or open-ended and does not exclude additional, unrecited elements or method steps”). However, the use of “comprising” in the claim cannot be used to *require* such additional elements. Patent Owner has not provided sufficient argument or evidence to establish that this additional information should be construed to be a necessary part of the social network database. Therefore, having considered the parties’ arguments and evidence and the fully developed trial record, we do not agree with Patent Owner’s construction.

Nor do we see the need to adopt Petitioner’s proposed construction of social network database as “an information storage system for data regarding one or more groups of people that is accessible for search via a central service or platform.” We do not find this proposed construction to be helpful to our analysis of the issues presented by the parties’ arguments. It is sufficient for our analysis here to note that both parties point to and rely on the only example in the ’981 patent of a “social network database”: a “Centralized Community Search database.” Ex. 1001, Code (57). Accordingly, we determine that we need not construe “social network database.”

2. *“social network ranking factor”*

Patent Owner builds upon its proposed construction of “social network database,” discussed above, to propose that “social network ranking factor” should be construed as “an interpersonal metric, based upon relationships between members, that is derived from a social network database.” PO Resp. 19 (citing Melendez Decl. ¶¶ 52–62). Patent Owner argues that the term should not be construed as broadly encompassing any ranking factor, but rather the claims require the social network ranking factor be derived from the social network database. *Id.* at 20.

Petitioner argues that Patent Owner’s construction “is unsupported by the specification, which never describes any database storing interpersonal relationships among community members.” Reply 3. According to Petitioner, Patent Owner instead relies solely on conclusory expert testimony that is improperly incorporated by reference, in breach of 37 C.F.R. § 42.6(a)(3). *Id.* at 5. Petitioner also points to the examples in the Specification and dependent claims, which describe ranking factors as

comprising user review ratings of restaurants, distance from the phone user's current location, or ranking by reverse chronological order, none of which would necessarily involve an interpersonal metric based upon relationships between members. Reply. 4, 6; Khosh 2nd Decl. ¶¶ 10–11; Ex. 1001, 15:27–37, claims 4, 7, 11, 12, 15, 16. For example, as Petitioner argues, Patent Owner's proposed construction would not be broad enough to include the ranking factor of claim 4 that depends from claim 1 and recites the "social network ranking factor comprising user review ratings of respective restaurants," which would not satisfy Patent Owner's construction because it does not require any sort of interpersonal relationship. Reply 4 (citing Khosh 2nd Decl. ¶ 12).

In response, Patent Owner repeats its argument, discussed above, that the use of "comprises" in dependent claim 4 undercuts Petitioner's arguments that user review ratings of restaurants can be a social network ranking factor. Sur-Reply 4–5.

We agree with Petitioner. The '981 patent describes ranking factors as comprising user review ratings of restaurants, distance from the phone user's current location, or ranking by reverse chronological order, none of which would necessarily involve an interpersonal metric based upon relationships between members. For example, language of claim 4 explicitly states that "the social network ranking factor compris[es] user review ratings of respective restaurants." Claim 4 is directly dependent on claim 1 and, as noted above, the comprising language does not require the inclusion of unrecited elements. As such, no other ranking factors are required to meet the limitations of either claim 1 or claim 4 other than the user review ratings. Thus, we disagree with Patent Owner's argument that claim 4 requires some

other social network ranking factor in addition to user review ratings, or that the user review ratings must somehow include or be dependent on interpersonal metrics. The '981 patent is devoid of any such description.

In sum, we determine that for the purposes of this Decision we need not further construe the “social network ranking factor.”

3. *“metadata associated with the spoken request”*

Patent Owner proposes the term “metadata associated with the spoken request” be construed as “information related to the spoken request attached to the request, such as time and location.” PO Resp. 14 (citing Melendez Decl. ¶¶ 45–49). Patent Owner argues that “[t]he word ‘associated’ signifies a tighter integration than being merely ‘related.’”⁶ *Id.* at 15. Patent Owner argues that a person of ordinary skill in the art “would understand that metadata associated with the spoken request, in the context of the specification and claim language, requires a greater connection between the metadata and spoken request (association) than the mere fact that a transcript and location metadata may exist or be used contemporaneously, without association.” *Id.* at 15 (citing Melendez Decl. ¶¶ 45–49). Patent Owner argues that subsequent claim limitations in claim 1, such as those that recite “transmit[ing] a request to mine information . . . based on the transcript and

⁶ Patent Owner provides a link to a webpage with a definition for the word “associated” that Patent Owner contends supports their proposed construction. PO Resp. 15. Patent Owner did not, however, file an exhibit of the linked webpage so that the definition would be entered into the record. Because the definition is not in the record, we do not consider it in our analysis. Alternatively, if we were to consider it, it would not help the Patent Owner, because one of the meanings of “associated” as quoted by Patent Owner includes “related,” contradicting Patent Owner’s assertion that “associated” cannot mean “related.” *Id.*

the metadata, and to receive social network information . . . based on the transmitted request,” support its construction. *Id.* at 15–16. Patent Owner argues that Figures 1 and 2 of the ’981 patent show time and location metadata “are associated with the spoken request by association of the corresponding metadata with the transcript of the speech at the ‘Add Absolute Time,’ and ‘Add location’ steps indicated.” *Id.* at 16. Patent Owner contends that the “the claim interpretation does not simply require metadata associated with the spoken request to be information related to the spoken request, but rather it must be associated with (joined or connected) to the spoken request, such that it may be available to form and transmit a request ‘dependent on at least the transcript and the metadata.’” *Id.*

Petitioner argues “[t]he claim language is clear that metadata only needs to be ‘associated’ with (*i.e.*, related to) the request and does not mention the metadata being attached to the request.” Reply 1. Petitioner points out that the dictionary entry of “associated” that Patent Owner cites includes “related” in the definition. *Id.*; *see also* PO Resp. 15 (purportedly quoting a dictionary definition that include the term “related”). Petitioner cites testimony by Patent Owner’s expert that “admitted . . . that metadata could be ‘associated’ without being attached to a request.” *Id.* (citing Ex. 1016, 33–34). Petitioner argues that the example from the Specification on which Patent Owner relies “describes an optional feature that associates time stamps with lines of a transcript” but that “this example is merely one embodiment where actual time spoken for each word populating a database is important.” *Id.* at 2 (citing Khosh 2nd Decl. ¶¶ 3–4). Petitioner points out that the claim requires the metadata to be associated with the *spoken request*, but Patent Owner relies on passages of the Specification that describe

metadata being attached to the *transcript*. *Id.* Petitioner’s expert, Dr. Khosh, testifies:

Patent Owner’s proposal does not explain how it would be possible to join or connect metadata with an instance of speech. In fact, it would be illogical to construe “metadata associated with the spoken request” to mean “attached,” as Person having Ordinary Skill in The Art (“POSITA”) would not readily appreciate how this would be accomplished, even in light of the specification of the ’981 Patent.

Khosh 2nd Decl. ¶ 2.

Having considered the parties’ arguments and the fully developed trial record, we do not agree with Patent Owner’s proposed construction. The ’981 patent describes metadata as data that includes “date data, time data, name data or location data.” Ex. 1001, 2:31–32. Figures 1 and 2 of the ’981 patent list several examples of metadata, including, “Date of call, dictation or message,” “Start time,” “End Time,” Duration,” “Phone #,” “Phone # other party,” “Name,” “Name of other party,” “Date of Synopsis,” “Start time of Synopsis,” “End time of Synopsis,” “Duration of Synopsis,” “Location start,” “Location time 1,” “Location at end,” “Loc. Start synopsis,” and “Loc. End synopsis.” As can be seen, the ’981 patent describes metadata broadly as encompassing a variety of data associated with various uses of the mobile device, such as calls, texts, dictation, photos, and the like.

Patent Owner does not provide sufficient evidence that the word “associated” means “attached” in the context of the claim. The ’981 patent does not use the term “attached” anywhere to describe the metadata associated with the spoken request, nor has Patent Owner identified the use of the term anywhere in the intrinsic evidence. Patent Owner cites Figures 1

and 2 of the '981 patent as supporting its construction, but Figures 1 and 2 show that a time offset and location may be added to the transcript for each word in the transcript. In these embodiments, the transcript itself includes the time and location information. The claim, however, recites that metadata be associated with the *spoken request*, not that it be added to the transcript.

In light of the parties' arguments regarding unpatentability, we determine that we need not further construe the term "metadata associated with the spoken request."

4. "*transcript*"

Patent Owner argues that "the '981 patent requires that a 'transcript' be searchable electronically and generated as a conversion of speech by a speech recognition engine, where speech is received through the data input port." PO Resp. 17 (citing Melendez Decl. ¶¶ 50–51). According to Patent Owner this is distinct from "any mere text representation of speech." *Id.*

Petitioner does not propose a construction for this term, but argues that Patent Owner seeks to "add extraneous limitations by asserting that 'transcript' means an electronically-searchable text generated as a conversion of speech by a speech recognition engine." Reply 2. Petitioner argues that "[c]laim 1 has no requirement for how the spoken request becomes a transcript or that the spoken request transcript be searchable." *Id.* at 2–3.

We agree with Petitioner that Patent Owner's construction adds extraneous limitations that are not supported by the record. For the purposes of analyzing the issues before us, we see no need to further construe this term, which is neither a term of art nor a creation of the patentees, but rather

an ordinary word that one of ordinary skill in the art would have understood without further elaboration.

5. “*searching*”; “*mining*”

The ’981 patent states that a “database... may be searched or mined.” Ex. 1001, 15:22–24. Independent claims 1 and 16 require “transmit[ing] a request to *mine* information of the social network database” and “*mining* information from a social network database,” respectively, while independent claim 10 requires “searching the social-network for information,” which information is “from a social network database.” *Id.* at 16:21–22, 17:56, 17:17, 18:7–8. Although Patent Owner does not formally propose claim constructions for the terms “mining” or “searching” as such, it argues that a person of ordinary skill “would understand the difference between searching a database and mining a database,” and that the “plain and ordinary meaning of ‘mining’ is ‘to extract from a source,’ while ‘search’ means merely ‘to look into or over carefully or thoroughly in an effort to find or discover something.’” PO Resp. 7 (citing Melendez Decl. ¶¶ 40, 85–86; Exs. 2021, 2022). Patent Owner further argues that “search implies receiving information as it is stored for formatting and display, whereas mining implies adding additional value to the retrieved stored data to reveal further insights into the data.” *Id.*

Petitioner argues that the statement in the ’981 patent, that the “database... may be searched or mined,” would have disclosed to one of ordinary skill that the terms were interchangeable in the context of the ’981 patent. Reply 10. Petitioner further argues that Patent Owner “cites no relevant evidence and makes no argument to show the proposed distinction” between “searched” and “mined.” *Id.* Petitioner contends that “even

assuming a distinction between ‘searched’ and ‘mined,’ Evermann and Yoo render obvious the claimed features because they add the very sort of ‘additional value’ which Patent Owner urges.” *Id.* (citing Khosh 2nd Decl. ¶¶22–23).

We are not persuaded that Patent Owner’s proposed embellishment of the meaning for “mining” as “adding additional value to the retrieved stored data to reveal further insights into the data,” or its attempt to limit “searching” to “receiving information as it is stored,” are appropriate. In the context of the ‘981 patent, we agree with Petitioner that “mining” and “searching” are used interchangeably and there is no meaningful difference between searching a database and mining a database in the context of the Specification of the ‘981 patent insofar as the issues presented here are concerned. The ‘981 patent specification only mentions mining twice, once as noted above equating searching and mining and once in the abstract, referring to a “request to mine information,” that provides no detail or discussion to indicate that mining should be viewed different from searching. There is no support in the intrinsic evidence that would suggest that these two terms were other than different ways of saying that a database is searched. In either case, as claim 16 confirms, whether a database is searched or mined, information is obtained from the social network database in response to a “query of a . . . search engine” — *i.e.*, that a database is searched in response to a query. Ex. 1001,18:7, 14–15. We also note that prior art reference Yoo describes its “search device” as “mining information from sources such as data files and web pages.” Ex. 1003 ¶ 52. We conclude that in the context of the Specification, and in the record before us,

“mining” means the same as “searching,” and there is no need to expressly construe “search.”

D. The AIA Status of the '981 Patent

As stated above in Section III.A, whether the subject matter of the claims would have been obvious to one of ordinary skill in the art is determined as of the time of invention, or as of the effective filing date of the claimed invention, depending on whether the patent is subject to the pre-AIA or post-AIA provisions. *KSR*, 550 U.S. at 406; Pre-AIA 35 U.S.C. § 103(a); AIA 35 U.S.C. § 103; MPEP § 2158.

If the '981 patent were to be accorded pre-AIA status, the invention date would be pertinent for purposes of determining whether references are accorded prior art status — a patent would not qualify as prior art under pre-AIA 35 U.S.C. § 102(e) if it was not “filed in the United States before the invention” by the named inventor. In particular, Patent Owner argues that Yoo (which is relied on for one of Petitioner’s asserted grounds of unpatentability as discussed in Section III.F below) does not qualify as prior art, because the '981 patent is pre-AIA, and the invention date (alleged to be April 23, 2008) precedes the effective date of that reference (Yoo was filed May 6, 2008). PO Resp. 20–26; Ex. 1003, code (22). Thus, a threshold question to our consideration of Yoo is whether claims of the '981 patent is entitled to pre-AIA or post-AIA status.

The amendments to 35 U.S.C. §§ 102 and 103 of the AIA became effective on March 16, 2013. *See* AIA § 3(n)(1). They apply to “any application for patent, and to any patent issuing thereon, that contains or contained at any time . . . a claim to a claimed invention that has an effective filing date . . . that is on or after [March 16, 2013].” *Id.* In our Decision

Granting Institution of *Inter Partes* Review, as confirmed in our Decision Denying Patent Owner’s Request for Rehearing, we preliminarily determined, based on the record then before us, that claims of the ’981 patent recite limitations that are not supported by the written description of U.S. Patent Application No. 12/181,956, filed July 29, 2008 (“the ’956 application”), the only application in the alleged priority chain of the ’981 patent filed prior to March 16, 2013. Paper 11, 13–19; Paper 20, 6–12. Accordingly, we determined that the provisions of the AIA would apply to the ’981 patent. *Id.* Petitioner relies on those determinations and further supplements the record in support of this determination with the testimony of its expert Dr. Khosh. Reply 6–7 (citing Khosh 2nd Decl. ¶¶ 15–18).

The focus of the AIA inquiry here is on the limitations of ’981 independent claims 1 and 10, which require that a request for information or a search be made on a social network or social network database “based on” or “using” a transcript of a user’s spoken request and metadata (*e.g.*, location) associated with the spoken request. *See* Ex. 1001, 16:20–23 (claim 1 reciting “an interface port to a social network database, configured to transmit a request to mine information of the social network database based on the transcript and the metadata”), 17:17–18 (claim 10 reciting “searching the social-network for information records using both the location and the transcript”). According to Petitioner’s expert, Dr. Khosh, “the concept of voice querying (*i.e.*, requesting information or a search be made on a social network or social network database ‘based on’ or ‘using’ a transcript of a user’s spoken request) is not disclosed in the [’956 application].” Khosh 2nd Decl. ¶ 15. Dr. Khosh testifies that, although the ’956 application discloses storing transcripts of conversations, and associated metadata, in a centralized

community database, which database can then be searched, it does not disclose using transcripts of spoken requests and associated metadata to search the database. *Id.*

In support of its argument that the '981 patent should be accorded pre-AIA status, Patent Owner has cited paragraph 197 of the '956 application:⁷

Referencing FIG. 2, for calls and dictation, the appended time-location transcript 253, along with attached call audio 121, attached synopsis audio 122, attached video 124, attached photos 125, and metadata 127 which may be recorded on or streamed live from Mobile Handset Phone 110a, Voice Over IP (VOIP) Phone 110b or land line phone 110C may be transmitted via the Internet or intranet, e.g., using TCP/IP for nearly lossless or at least high-quality data transmission, to the Centralized Community Search database, FIG. 6, 170c.

Paper 10, 2; Melendez Decl. ¶ 41; *see* Ex. 3001 ¶ 197.⁸ Patent Owner also cites paragraph 192 of the '956 application, characterizing it as “unambiguously stat[ing] that the Centralized Community Search database ‘may be searched or mined’ ‘with speech-recognized text and location data.’” PO Resp. 23 (citing Melendez Decl. ¶ 41). Patent Owner further relies on Figure 6 of the '956 application, which it characterizes as showing “voice inputs for spoken requests.” *Id.* at 24.

⁷ Various references by the parties to this paragraph erroneously specified paragraph 198, although we understand that 197 is the intended number. Paper 14, 6 n.6.

⁸ Neither party submitted the '956 application as an exhibit. Nonetheless, as it is a document publicly available from the Office and it is apparent that both parties had access to it for their briefs, we deem that failure to be harmless. For the benefit of the public, at the time of institution, we entered the published version of the '956 application as Exhibit 3001 for a complete record for this proceeding.

From this record, Patent Owner's expert, Dr. Melendez, opines that, because the '956 application discloses searching the Centralized Community Search Database, and because the application does not "constrain the content or purpose of the user speech," one of ordinary skill would "know that the phone speech would comprise a search or request." Melendez Decl. ¶ 42. Dr. Melendez also cites an example in the '956 application "where the 'time-location transcript' is used to search an ad server database when the user has mentioned a '100 inch Panasonic TV.'" *Id.* (citing Ex. 3001 ¶ 170). In addition, Dr. Melendez cites the statements in the '956 application: "[i]deally, a person should be able to record and search, with one query, anything discussed in their phone calls", and "[t]he present invention may use the speech recognized text" in search of clues. *Id.* (citing Ex. 3001 ¶¶ 7, 134).

In response, Petitioner's expert, Dr. Khosh, testifies that paragraph 197 of the '956 application does not describe any searching or requesting information *from* the "Centralized Community Search database," much less searching or requesting such information based on, or using, a transcript of a spoken request and associated metadata such as location. Khosh 2nd Decl. ¶ 16. Rather, this disclosure describes information (including transcripts and associated metadata) that is submitted to become *part of* the database. *Id.*; *see* Ex. 3001 ¶¶ 186–192 (describing the submission of "speech- recognized text and location data" to a "Centralized Community Search database," *e.g.*, a message about a traffic jam or road hazard, or a review of a restaurant or business). Likewise, Figure 6 of the '956 application does not show "voice inputs for spoken requests," despite Patent Owner's mischaracterization. Khosh 2nd Decl. ¶ 16.

As to paragraph 192 of the '956 application, Dr. Khosh testifies that, rather than disclosing that the database may be searched with speech-recognized text and location data, the paragraph “actually states that the database includes speech recognized text and location data, which is searched ‘based on social network or type of information.’” Khosh 2nd Decl. ¶ 18.

We agree with Petitioner’s and its expert’s interpretation of these portions of the '956 application. There is no disclosure in that application of one of the key requirements of the '981 patent claims — the requirement that a request for information or a search be made on a social network or social network database “based on” or “using” a transcript of a user’s spoken request and metadata (e.g., location) associated with the spoken request. The notion of searches based on a transcript and metadata was an afterthought inserted into the chain of applications at some point after the filing of the '956 application. Dr. Melendez’s opinion that, because the '956 application does not “constrain the content or purpose of the user speech,” therefore one of ordinary skill would “know that the phone speech would comprise a search or request,” is a conclusory leap that is not justified by the record. For example, Dr. Melendez’s reliance on the statement in paragraph 134 of the '956 application, that “[t]he present invention may use the speech recognized text” in search of clues, takes that statement out of context — the “clues” referred to are clues to the identity of the speaker, which are not used to search the database, but rather facilitate the speech recognition process, making use of “trained” speech recognition in which each speaker trains the system for their own speech. Ex. 3001 ¶¶ 113, 129–134. And the reference to obtaining an ad from an ad server when the user has mentioned a keyword (e.g., “100 inch Panasonic TV”) is in the context of inserting the ad into the search database

along with the transcript of the speech and associated metadata, not using that keyword to formulate a search request. *Id.* at Fig. 5, ¶¶ 174, 177.

Accordingly, having considered the parties' arguments and the fully developed trial record, we determine that Patent Owner has not shown that claims 1 and 10, and the claims that depend therefrom, of the '981 patent are supported by the written description of the '956 application and, thus, can benefit from its priority date. Therefore, the earliest effective filing date of the challenged claims is the May 22, 2013 filing date of application No. 13/900,495, which is after the AIA effective date. Ex. 1001, code (60).⁹ Accordingly, we determine that Petitioner has shown that the '981 patent claims are subject to the post-AIA provisions of Section 102 and 103.

For completeness of the record, we also consider Patent Owner's argument, based on the premise that the '981 patent is entitled to pre-AIA status (a premise that we have rejected), that the invention date of the '981 patent is April 23, 2008, prior to May 6, 2008 filing date of Yoo. PO Resp. 20–26. Under pre-AIA 35 U.S.C. § 102(e), Patent Owner could disqualify Yoo as prior art by demonstrating that the named inventor of the '981 patent, James L. Geer, invented the claimed invention before Yoo was filed — *i.e.*, prior conception (and subsequent diligence in reducing to practice). *See, e.g., Taurus IP, LLC v. Daimler Chrysler Corp.*, 726 F.3d 1306, 1323 (Fed. Cir. 2013).¹⁰

⁹ The parties have not presented evidence one way or the other as to whether the May 22, 2013 application supports the '981 patent claims, but it is unnecessary to do so for purposes of this Decision. *But see* Tr., 6:22–7:3 (Petitioner's counsel asserting that the March 21, 2015 filing date of the '981 application is the earliest effective date).

¹⁰ As stated above, under AIA 35 U.S.C. § 102, the invention date does not affect the prior art status of Yoo — Yoo is § 102(a)(2) prior art as long as it was filed before the effective filing date of the '981 patent, regardless of prior

Specifically, Patent Owner contends that Mr. Geer conceived of the invention recited in the challenged claims by April 23, 2008, and worked diligently until reducing it to practice by filing a patent application for the invention on July 29, 2008. PO Resp. 21, 25.

To demonstrate prior conception, Patent Owner must show that Mr. Geer had “a definite and permanent idea of the complete and operative invention.” *See Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1376 (Fed. Cir. 1986). Conception must include *every* feature of the claimed invention. *Coleman v. Dines*, 754 F.2d 353, 359 (Fed. Cir. 1985). Thus, Patent Owner must show that Mr. Geer’s prior conception included the same limitations discussed above that, on the present record, were not shown to be sufficiently disclosed in the ’956 application.

Mr. Geer cites to three documents to corroborate his testimony that he conceived of “all of the elements of the ’981 patent’s claims” by April 23, 2008. Ex. 2007 ¶¶ 11, 14–15; Exs. 2008, 2010, 2012.¹¹ For the relevant limitations, he cites to only two of these documents. *E.g.*, Ex. 2007, 19 (citing “Appendix B,” i.e., Ex. 2010, and “Appendix C,” i.e., Ex. 2012). For Exhibit 2010, Mr. Geer specifically identifies a disclosure described as “Idea Six” in

conception. It is undisputed that Yoo was filed on May 6, 2008 (Ex. 1003, code (22)), which is before the earliest possible filing date for the ’981 patent, i.e., June 29, 2008, or any of the other filing dates (Ex. 1001, code(60)).

¹¹ Petitioner moves to exclude Exhibits 2007-2015, “as well as any portions of the record relying on these exhibits,” given our determination that the ’981 patent is not to be accorded pre-AIA status. Paper 28, 1, 9–12. Because, as discussed herein, we have determined that this evidence fails to establish the asserted invention date of the ’981 patent even if the patent is accorded pre-AIA status, the motion to exclude this evidence is dismissed as moot.

the document: “Cell phone barcode recognition for wine reviews, book reviews, price comparisons, etc., integrated with Google search, Froogle, Google maps.” Ex. 2010, 7. For Exhibit 2012, Mr. Geer identifies a drawing labeled “Figure 6,” which appears to be identical to Figure 6 of the ’956 application. Ex. 2012, 4.

In response, Petitioner submits the testimony of its expert, Dr. Khosh:

[T]he evidence submitted in support of an earlier effective filing date, including the Appendices A-C (Exs. 2008, 2010 and 2012) do not pertain to the invention as claimed in the ’981 Patent. The table within Mr. Greer’s declaration . . . merely points to disconnected concepts, without sufficient detail to disclose to POSITA that the claimed invention was contained there. Ex. 2007, 16–26. For example, there is no evidence of voice-queries, user reviews and/or user ratings within the citations of the table. In sum, such disconnected, broadly described concepts do not add up to the specific features of the claims, as understood by POSITA.

Khosh 2nd Decl. ¶ 14.

We agree with Petitioner. Neither Mr. Geer nor Patent Owner explains how the portions of the documents relied on show conception of a search or request for information based on, or using, a transcript of a spoken request. For Figure 6 of Exhibit 2010, neither Mr. Geer nor Patent Owner explain how this figure shows conception where no spoken request or transcript thereof is depicted, similar to Figure 6 of the ’956 application discussed above.

In addition, inventor testimony as to prior invention must be corroborated by more than the inventor’s own records. *See ABB Inc. v. Roy-G-Biv Corp.*, IPR2013-00062, Paper 84 at 10–12 (PTAB Apr. 11, 2014). This applies not only to testimony concerning conception, but also concerning diligence. *Id.* Here, Patent Owner has only submitted testimony from the purported inventor and his own documents. There is no

independent corroboration of the testimony. As a result, for this additional reason, the testimony is insufficient to “swear behind” the Yoo reference.

“Conception must be proved by corroborating evidence which shows that the inventor disclosed to others his completed thought expressed in such clear terms as to enable those skill in the art to make the invention.”

Coleman v. Dines, 754 F.2d 353, 359 (Fed. Cir. 1985). The requirement for corroboration of inventor’s testimony arose out of a concern that inventors testifying at trial would be tempted to remember facts favorable to their case by the lure of protecting their patent or defeating another’s patent.

Mahurkar v. C.R. Bard, Inc., 79 F.3d 1572, 1577 (Fed. Cir. 1996). A rule of reason applies to determine whether the inventor’s testimony has been corroborated. *Price v. Symsek*, 988 F.2d 1187, 1194 (Fed. Cir. 1993). “The rule of reason, however, does not dispense with the requirement for some evidence of independent corroboration.” *Coleman*, 754 F.2d at 360.

Thus, on this record, we are not persuaded that Patent Owner has sufficiently demonstrated prior conception, even if pre-AIA § 102(e) applied. Therefore, Petitioner has shown that Yoo would qualify as prior art even if pre-AIA § 102(e) were applicable.¹²

¹² Even if it were determined that Yoo was not prior art to the ‘981 patent, there is no basis for Patent Owner’s assertion that, in such event, the Board would lack jurisdiction to decide this case. PO Resp. 26–27. Patent Owner’s reliance on *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348 (2018) is misconceived — in compliance with *SAS*, we instituted trial on all claims and all grounds asserted by Petitioner, and each of those grounds is based on obviousness in view of patents, as required by 35 U.S.C. § 311(b).

E. Objective Indicia of Non-Obviousness

Patent Owner submits evidence that it argues demonstrates the presence of objective indicia of non-obviousness, applicable to all three asserted grounds of unpatentability. PO Resp. 56–62. Factual inquiries for an obviousness determination include secondary considerations based on evaluation and crediting of objective evidence of nonobviousness. *Graham*, 383 U.S. at 17. Notwithstanding what the teachings of the prior art would have suggested to one with ordinary skill in the art at the time of the invention, the totality of the evidence submitted, including objective evidence of nonobviousness, may lead to a conclusion that the claimed invention would not have been obvious to one with ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–1472 (Fed. Cir. 1984).

Patent Owner relies on two pieces of evidence as establishing long felt need and industry praise for its invention.¹³ First, Patent Owner contends that a September 10, 2008 blog post by a Google executive, Marissa Mayer, demonstrates a long-felt, but unmet, need for the invention claimed in the '981 patent. *Id.* at 56–57 (citing Ex. 2001). The Mayer blog stated:

Search needs to be more mobile — it should be available and easy to use in cell phones and cars and on handheld . . .

[O]ne far-fetched idea: how about a [device] that does searches in the background based on the words it picks up from conversations . . .

¹³ Petitioner moves to exclude Exhibits 2001–2005, “as well as any portions of the record relying on these exhibits,” as not authenticated and as inadmissible hearsay. Paper 28, 1–9. Because, as discussed herein, consideration of this evidence does not lead to a result favorable to Patent Owner, the motion to exclude this evidence is dismissed as moot.

Why can't I capture a snippet of audio and have the search engine identify and analyze it (a song or a stream of conversation) and tell me any relevant information about it? Services that do parts of that are available today, but not in an easy-to-use, integrated way...

(Ex. 2001, 3). The blog also referred to location data as useful for a search, stating that “incorporating user location and context will be pivotal in increasing the relevance and ease of search in the future.” *Id.* at 5. In addition, the blog referred to “users’ social graphs,” as a tool “to make ‘friend-augmented’ search easy [and] make search more efficient and more relevant.” *Id.* at 5–6.

Patent Owner argues that these Mayer blog entries express a long-felt need for “exactly what was provided by the ’981 Patent’s invention.” PO Resp. 56. Patent Owner submits a chart purporting to map portions of the blog to the “novel combination” of the patent: speech recognition on a mobile device, location awareness, social networks, and social network ranking factors. *Id.* at 59. Patent Owner also asserts that these blog statements represent an expressed need that was long-felt, because “Mayer’s words . . . show the need . . . is one that she has encountered extensively over nine years of experience at Google” *Id.* at 57 (quoting Ex. 2001, 2, 10).

Patent Owner also contends that a 2011 presentation given by Apple about one of its products, Siri, demonstrates industry praise for the invention of the challenged claims. PO Resp. 58–60 (citing Ex. 2004). Patent owner cites a portion of the presentation demonstrating, for example, the ability to speak into an iPhone and get social network reviews of a Greek restaurant. *Id.* at 60 (citing Ex. 2004, 40:18–19). Patent Owner cites a statement made by an Apple executive during the product presentation: “Now I’ve been in the AI field for a

long time, and this still blows me away, the fact that it understands the words, the concepts, and even now ranks it by Yelp's ordering." PO Resp. 61; *see* Ex. 2004, 40:22–24. As it did for the Google blog, Patent Owner's chart compares statements in the video to features of the patent. *Id.* at 60. Patent Owner asserts that the Apple presentation not only praised the ability of Siri to perform speech recognition, which was admittedly well known in the prior art, but also touted the other features asserted by Patent Owner to characterize the inventive combination of the '981 claims: use of location metadata, social networks, and ranking of search results based on user reviews. *Id.* at 61–62.

Patent Owner also asserts the Apple presentation establishes a long-felt need. PO Resp. 59 (citing Ex. 2004, 38:4–7 (“[F]or decades, technologists have teased us with this dream that you’re going to be able to talk to technology, and it’ll do things for us. Haven’t we seen this before, over and over? But it never comes true.”)).

Petitioner challenges Patent Owner's reliance on the Mayer blog as failing to establish a long-felt need. Reply 27. Petitioner argues that the blog's general references to Mayer's nine-year tenure at Google do not establish that the 2008 statements about searches relate to any particular long-felt or persistent need that existed in the previous nine years. *Id.* Petitioner also argues that the statements in the Apple presentation provide no information about when a need was identified for the claimed invention. *Id.*

Petitioner also challenges the nexus chart submitted by Patent Owner. Reply 27–28. Petitioner argues that the fact that the Apple rollout praises the AI capabilities for speech recognition is not material given that the '981 patent describes transcribing a spoken request as a known prior art

technique. *Id.* (see Ex 1001, 7:3–4 (referring to speech recognition engines, “such as the Nuance Communications speech recognition engine”)). Also, Petitioner points out that the Apple presentation refers to a search for “a great Greek restaurant in Palo Alto,” which refers to a location, but not to the user’s device location during the spoken request, as required by the ’981 claims. *Id.* at 28.

As a threshold matter, Patent Owner’s evidence of objective indicia of non-obviousness are nonprobative, given our determination that the ’981 patent is subject to the provisions of the AIA, under which the obviousness determination is as of the “effective filing date of the claimed invention.” Our determination that the earliest possible filing date of the ’981 patent is May 22, 2013, renders ineffective Patent Owner’s evidence of a 2008 Google blog and a 2011 Apple presentation, given that, as Patent Owner asserts, both exhibits show that the four alleged notable “features” of the ’981 patent — speech recognition on a mobile device, location awareness, social networks, and social network ranking factors — all predated the post-AIA effective date of the patent. In other words, if there was a long-felt need, that was satisfied in 2008 or 2011, prior to the invention of the ’981 patent. And if there was industry praise, it was praising what was pre-existing to the invention of the ’981 patent.¹⁴

¹⁴ As Petitioner states:

Patent Owner’s assertion that the 2011 Apple product embodies the claimed invention demonstrates that in 2013 (the next earliest effective filing date Patent Owner could assert after July 29, 2008), POSITA would have known how to combine prior art elements to achieve the claimed invention and would

Moreover, even if considered from the standpoint of Patent Owner's asserted April 23, 2008 invention date, this evidence is very weak as objective indicia of nonobviousness. In order to show a long-felt but unmet need for the claimed invention, the objective evidence must show that the need was a persistent one that was recognized by those of ordinary skill in the art at the time of the invention. *In re Gershon*, 372 F.2d 535, 538 (CCPA 1967). The 2008 date of the blog post itself cannot establish a long felt persistent but unmet need. We are not persuaded by Patent Owner's speculation that the general references in the blog to Ms. Mayer's nine-year tenure at Google is sufficient evidence of how long the needs expressed by Ms. Mayer existed. These statements are too general and disconnected to show sufficiently a long felt and persistent need. Instead, when read in the context of the blog post, Ms. Mayer's statement that she had worked at Google for nine years, was more likely intended as an introductory statement showing that she has a strong interest in search technology. *See* Ex. 2001, 2 ("I am a search addict. I'm naturally inquisitive – I've always liked finding things out. Plus, I've worked at Google on search for the past 9 years and 3 months. Of course I search a lot.")

The Apple presentation suffers from similar problems in that its date alone cannot be used to establish long-felt but unmet need. As before, Patent Owner does not present any evidence relating to this presentation indicating that the need was long felt and persistent. Patent Owner relies on a statement during the presentation:

have been motivated to do so, since the claimed invention was already made by Apple.

Reply 9 n.1 (citing Khosh 2nd Decl. ¶ 19).

[F]or decades, technologists have teased us with this dream that you're going to be able to talk to technology, and it'll do things for us. Haven't we seen this before, over and over? But it never comes true."

PO Resp. 59 (quoting Ex. 2004, 38:4–7). Like the statements in the Google blog, this statement is too general to sufficiently show a long felt persistent need. Other than mentioning the desire to "talk to technology," the statement fails to provide any information regarding specific needs identified by Apple, what they wanted the technology to deliver (other than "it'll do things for us") and when such needs were specifically identified.

Thus, based on the evidence and arguments presented, we give little weight to Patent Owner's evidence purporting to demonstrate long-felt, but unmet, need.

In regard to Patent Owner's reliance on the Apple presentation as industry praise for the invention, such evidence may show non-obviousness where the record demonstrates that the industry praise has the requisite nexus to the merits of the claimed invention. *See Geo. M. Martin Co. v. Alliance Mach. Sys. Intern. LLC*, 618 F.3d 1294, 1305 (Fed. Cir. 2010); *Asyst Tech'n, Inc. v. Emtrak, Inc.*, 544 F.3d 1310, 1316 (Fed. Cir. 2008). "[T]here is no nexus unless the evidence presented is 'reasonably commensurate with the scope of the claims.'" *ClassCo, Inc., v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016) (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)). A patentee is entitled to a presumption of nexus "when the patentee shows that the asserted objective evidence is tied to a specific product and that product "embodies the claimed features, and is coextensive with them.""
Fox Factory, Inc. v. SRAM, LLC, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed.

Cir. 2018) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000))).

The nexus chart provided by Patent Owner is not a claim-element-by-element analysis of the submitted evidence, and Patent Owner has not otherwise demonstrated that the subject matter of the Apple presentation is coextensive (or nearly coextensive) with the challenged claims. We, therefore, find that a presumption of nexus is inappropriate. However, “[a] finding that a presumption of nexus is inappropriate does not end the inquiry into secondary considerations.” *Fox Factory*, 944 F.3d at 1375. “To the contrary, the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Id.* at 1373–74 (quoting *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996)). On the other hand, “where the offered secondary consideration actually results from something other than what is both claimed and *novel* in the claim, there is no nexus to the merits of the claimed invention,” meaning that “there must be a nexus to some aspect of the claim not already in the prior art.” *In re Kao*, 639 F.3d 1057, 1068–69 (Fed. Cir. 2011) (emphasis in original); *Institut Pasteur & Universite Pierre et Marie Curie v. Focarino*, 738 F.3d 1337, 1347 (Fed. Cir. 2013).

Even taking at face value the nexus chart submitted by Patent Owner, at most the chart establishes that the Apple demonstration covered four alleged “features” of the ’981 patent: speech recognition on a mobile device, location awareness, social networks, and social network ranking factors.

PO Resp. 60. As we discuss below, each of these features are disclosed in the prior art of record. And as Petitioner points out, even the ’981 patent recognizes

that speech recognition was a well-established technique at the time of the invention. Reply 27–28; Ex 1001, 7:3–4. Also, the “location awareness” reflected in the presentation is not tied to the user’s device location during the spoken request, as required. Patent Owner provides nothing that differentiates the purported industry praise expressed during the Apple presentation from the explicit disclosures of the cited references — *i.e.*, the “praise” accorded Siri at the presentation would have equally applied to the subject matter disclosed in the cited references. Moreover, a substantial emphasis of the “praise” relied on by Patent Owner is directed to features that are not required by the claims, such as Siri’s artificial intelligence capabilities of being able to understand the words and concepts being spoken, and not just its ability to transcribe them.

Even if we were to assume a nexus between the comments in the Apple presentation and the ’981 Patent, we still find the comments to be weak support for industry praise. The comments fail to show, for example, that any praise for the concepts described was shared industry-wide, rather than by Apple itself. Further, Apple’s praise for its own products, at Apple’s own product launch event, is self-congratulatory and insufficiently persuasive of industry praise for the invention claimed in the ’981 Patent. *See Bayer Healthcare v. Watson Pharms.*, 713 F.3d 1369, 1377 (Fed. Cir. 2013) (explaining that bare journal citations and self-referential commendation fall short of demonstrating industry praise).

In sum, on this record we find Patent Owner’s evidence of alleged long-felt need or industry praise as very weak and not significantly supportive of non-obviousness.

*F. Obviousness of Claims 1–6, 8–10, and 12–18 Over Evermann; and
Obviousness of Claims 1–18 Over Evermann and Yoo*

Petitioner challenges claims 1–6, 8–10, and 12–18 as unpatentable over Evermann. Pet. 12–37. Petitioner also challenges claims 1–18 as unpatentable over the combination of Evermann and Yoo. *Id.* at 37–43.

1. Evermann

Evermann, titled “Local Storage And Use Of Search Results For Voice-Enabled Mobile Communications Devices,” was filed February 12, 2007, and published June 26, 2008. Ex. 1002, codes (54), (22), (43). Evermann discloses a system with speech recognition functionality that involves recognizing a search request spoken at a mobile device, transmitting the request to a server, converting the request to text, and sending the text request along with metadata such as location to a content provider to retrieve search results responsive to the request. *Id.* at Code (57), ¶¶ 39–40. Figure 1 of Evermann is reproduced below.

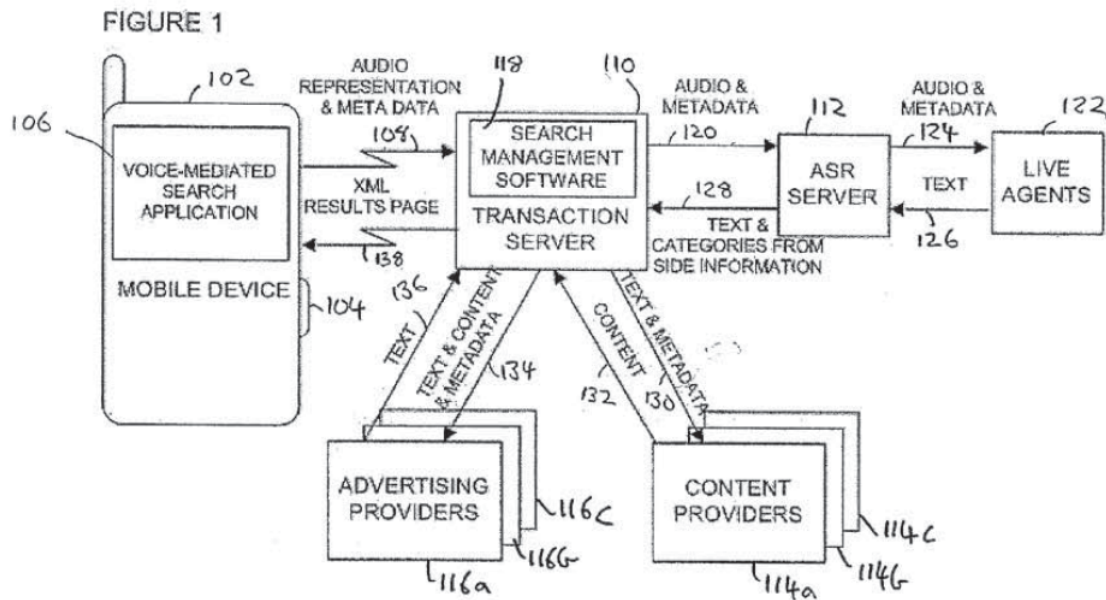


Figure 1 depicts a block diagram of a system architecture that implements the invention of Evermann. *Id.* ¶ 14. As shown in Figure 1, mobile device

102 includes voice-mediated search application (VMSA) 106, which recognizes when a spoken command from the user constitutes a search request and determines whether it must be sent to a remote server for processing, in which case it opens data connection 108 to do so. *Id.* ¶¶ 23, 27, 33–34, 37–39. The audio of the spoken request is sent to transaction server 110 along with metadata, such as the geographical location (via GPS functionality) of device 102. *Id.* ¶¶ 39–40. Transaction server 110 passes the audio information and metadata to automatic speech recognizer (ASR) server 112, which performs speech recognition on the audio and returns text and other information to transaction server 110. *Id.* ¶¶ 42–43, 48, 53, 61. Search management software 118 on transaction server 110 uses the metadata and other information to select one or more content providers 114a, b, c to service the search request, and sends the request in the form of the text and metadata to the selected content provider. *Id.* ¶¶ 42–43, 62–63. The content providers retrieve the requested content and send it to transaction server 110, which selects and prioritizes the received content using the metadata and sends it to mobile device 102. *Id.* ¶¶ 43, 64–65, 67, 71. VMSA 106 then presents them to the user. *Id.* ¶¶ 43, 70–73.

Examples of the search functionality disclosed in Evermann include general purpose searches serviced by Google, searches for sports news serviced by an ESPN server, and searches for a type of business in a particular location, with the results displayed on a map (*e.g.*, “Search Coffee in Manhattan” or “searching for clothing stores”). *Id.* at Fig. 3, ¶¶ 53, 62–65.

2. Yoo

Yoo, titled “Systems And Methods To Provide Search Based On Social Graphs And Affinity Groups,” was filed May 6, 2008, and published November 12, 2009. Ex. 1003, codes (54), (22), (43). As discussed above in Section III.D, we have determined that Yoo is prior art to the ’981 patent under either pre-AIA or AIA law. Yoo discloses ranking search results based on relationship-based recommendations or preferences specified by related people in social networks or affinity groups. *Id.* at Code (57).

Figure 1 of Yoo is reproduced below.

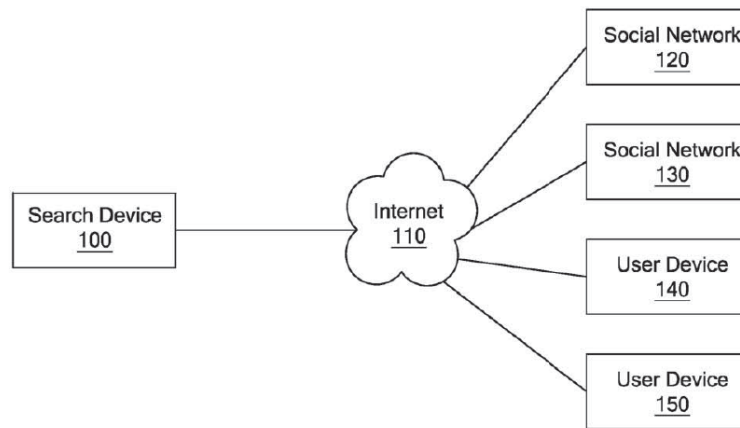


Figure 1 is a diagram of an embodiment of Yoo for performing a search. *Id.* ¶ 6. As shown in Figure 1, user devices 140 and 150 are connected to social networks 120 and 130 via the Internet 110. *Id.* ¶ 17. Yoo identifies Facebook, MySpace, and LinkedIn as examples of social networks. *Id.* ¶ 18. The user devices and social networks also are connected to search device 100, to perform searches in response to search queries from the user devices. *Id.* ¶ 27. Search device 100 interacts with social networks 120 and 130 to aggregate information on the social networks, such as recommended businesses and information about the users of the social

networks (e.g., user relationships). *Id.* ¶¶ 16, 28. Users can submit search requests at a user device using voice input, which request is submitted, along with the location of the user, to the search device, which can search the social networks. *Id.* ¶¶ 30, 35–36, 45. Search results are presented to the user ranked by such criteria as user recommendations, expertise, user relationships, popularity, credibility, and proximity of location. *Id.* ¶¶ 30–34, 39, 56, 62, 65, 75. Examples of searches disclosed in Yoo include searches for recommended businesses (such as restaurants, “coffee shops,” and “Porsche mechanic”), service providers, products, information, entertainment programs, and merchants. *Id.* at Fig. 4, ¶¶ 4, 16, 28, 30, 39, 64.

3. *The Combination of Evermann and Yoo*

Petitioner cites its expert Dr. Khosh’s testimony to support its contention that a person of ordinary skill would have been motivated to apply various pertinent teachings of Yoo, regarding the use of social networks to prioritize or rank search results, to the system of Evermann. Pet. 38–40 (citing Khosh Decl. ¶¶ 182–184). Dr. Khosh notes that, like Evermann, Yoo also is directed to mobile device query platforms, including location-based queries and voice-activated query inputs. Khosh Decl. ¶ 182. Dr. Khosh further testifies that a skilled artisan would have recognized the benefits available by implementing Yoo’s teachings in the Evermann system, such as personalizing search results, expanding access to information for other geographic areas, and improving relevancy of results. Khosh Decl. ¶ 183.

Patent Owner’s expert Mr. Melendez testifies that “Evermann’s stated goal with respect to using social network information is ‘for receiving

information from a trusted source,”” whereas Yoo “has the entirely opposite goal of aggregating information from any source,” regardless of trust, and therefore, Yoo teaches against the combination. Melendez Decl. ¶¶ 92, 170, 201. However, Dr. Melendez relies on a portion of Evermann unrelated to the disclosures regarding searches directed to Google and ESPN, which do not depend on a trusted relationship. Ex. 1002 ¶ 87. Thus, we find this argument of Patent Owner unpersuasive, and Patent Owner does not otherwise address the issue of whether one of ordinary skill would have been motivated to combine the teachings of Evermann and Yoo. *See* PO Resp. 28–43.

Accordingly, based on our review of the record, we determine that Petitioner sufficiently has persuaded us that one of ordinary skill would have been motivated to apply, and would have a reasonable expectation to succeed in applying, the search aggregation techniques taught in Yoo to the search system discussed in Evermann.

4. Independent Claim 1

The preamble of claim 1 provides for:

A system for presenting social-network-provided outputs to a mobile-electronic-device user at a location associated with the user in response to the user's spoken request.

Ex. 1001, 16:9–13. Petitioner’s obviousness grounds rely on the disclosure in Evermann of a system for querying and presenting results to a user via a mobile device, upon spoken request. Pet. 13 (citing Ex. 1002, Figs. 1–6, ¶¶ 7, 42–44; Khosh Decl. ¶ 93).¹⁵

¹⁵ Because Petitioner has shown that the recitation in the preamble is satisfied by the prior art, there is no need to determine whether the preamble

As discussed further below for the third limitation of claim 1, Petitioner also relies on the disclosures in Yoo of mobile devices sending search queries to social networks such as Facebook, Myspace, and LinkedIn, as presenting social-network-provided outputs. Pet. 37–38.

Also as discussed in connection with the third limitation, Patent Owner argues that Evermann does not disclose social networks, which argument we do not find persuasive. PO Resp. 28. Patent Owner also argues that there is no showing that “the locations of Evermann or Yoo are the claimed location associated with the user in response to the user’s spoken request.” *Id.* However, Petitioner’s reliance on the fact that, in Evermann, the user makes a search request spoken at a mobile device, which device has GPS location determination capabilities, is a sufficient showing for this aspect of the preamble. Pet. 13; Ex. 1002 ¶ 90.

The first limitation of claim 1 requires:

a data input port configured to receive speech information from the mobile-electronic-device user.

Ex. 1001, 16:14–15. Petitioner relies on the disclosure in Evermann of circuitry (ASIC 614 and audio CODEC 616) and Voice-Mediated Search Application (VMSA) software 106 of mobile device 102, that receives and processes voice information and data connection 108 that communicates the audio to transaction server 110. Pet. 13–14 (citing Ex. 1002, Figs 1, 7, ¶¶ 21, 37, 39, 43, 45, 89; Khosh Decl. ¶¶ 94–97). Patent owner does not directly address this limitation of the claim, and our review of the record confirms Petitioner’s analysis.

is in fact limiting. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

The second limitation of claim 1 requires:

a memory configured to store a transcript of the spoken request and metadata associated with the spoken request comprising at least the location during the spoken request.

Ex. 1001, 16:16–19. Petitioner relies on various disclosures in Evermann that it alleges teach this limitation. Pet. 14–15. In particular, Evermann discloses that speech information is received by transaction server 110 from mobile device 102, is sent by transaction server 110 to ASR server 112 and converted to text (*i.e.*, a transcript), and sent back to the transaction server, and then the transcript and associated metadata, such as the current location of the user device, are then sent from the transaction server to content providers 114a–c. Ex. 1002, Fig. 1, ¶¶ 39–40, 43, 53, 55–56, 61–63; Khosh Decl. ¶¶ 100, 103. Evermann discloses that its servers include “conventional memory subsystems, for example, disk storage devices, RAM, and ROM.” Ex. 1002 ¶ 94; Khosh Decl. ¶ 99. Accordingly, Petitioner’s expert testifies that it would have been obvious to one of ordinary skill that, in order for the servers to function as disclosed, the transcript and metadata would be stored in memory. Khosh Decl. ¶¶ 98–104; Khosh 2nd Decl. ¶ 21.

Petitioner also relies on the disclosure in Yoo of location-based queries, which teach the use of location metadata that is the location of the user at the time of the search request. Pet. 38–39 (citing Khosh Decl. ¶¶ 182, 190; Ex. 1003 ¶¶ 4, 30, 65); Reply 8. As discussed above, Petitioner argues that one of ordinary skill would have been motivated to adapt the system of Evermann to use location metadata as taught by Yoo. Pet. 38–40.

Patent Owner argues that there is no showing of a memory in Evermann that stores both a transcript and associated metadata, including the location during the spoken request. PO Resp. 28–29 (citing Melendez Decl.

¶¶ 74–80); Sur-Reply 6–8. As to a transcript, Patent Owner’s expert Dr. Melendez admits that transaction server 110 receives text from ASR server 112, which text is generated from the spoken request. Melendez Decl. ¶ 75; *see* Ex. 1002 ¶¶ 47. We are persuaded by Petitioner and its technical witness Dr. Khosh that, given that this text is provided to transaction server 110, it must be stored in server memory. Khosh Decl. ¶ 101; Khosh 2nd Decl. ¶ 21; *see* Ex. 1002 ¶¶ 21, 33, 48, 53. Nonetheless, Dr. Melendez opines that the text received from ASR server 112 is edited by transaction server 110 before it is sent to the content provider, and therefore it is not a “transcript of the spoken request.” Melendez Decl. ¶ 76. Dr. Melendez apparently relies on an example described in Evermann, where “some editing” is performed on the received text, “such as removing prepositions and articles,” before transmittal to the content provider. Ex. 1002 ¶ 62. However, this does not negate the fact that the text received by transaction server 110 from ASR server 112 is a transcript of the search request, and it confirms that the received text is stored prior to editing, because the text must be stored in memory in order to edit it. Khosh Decl. ¶ 103. In addition, nothing in the claims requires an unedited transcript to be sent to the content provider — the third limitation set forth below only requires the search request to be “based on” the transcript and metadata. *Id.* ¶ 108. The fact that the search request uses an edited transcript still satisfies the requirement that the search be based on the transcript.

Dr. Melendez also asserts that the location metadata is not stored in the transaction server memory with the transcript. Melendez Decl. ¶ 75. However, Evermann explicitly discloses that, at least for some searches, transaction server 110 sends *both* the text of the search request (possibly

edited) *and* metadata, including location metadata, to the content provider, and thus, both must be stored in the transaction server memory. Khosh 2nd Decl. ¶ 31; Ex. 1002 ¶¶ 43, 55, 63–64. In addition, Yoo teaches including in a search request “a location of the searching user is provided . . . so that the search service can prioritize relevant businesses based at least in part by distance from the searching user.” Ex. 1003 ¶ 30, *see also* ¶ 65 (“The location of the user device may be automatically determined using a global positioning system (GPS) or other position determining apparatus integrated into or communicatively coupled with the user device”). Dr. Melendez further questions whether the location metadata of Evermann is “the location during the spoken request,” as required by the claim. Melendez Decl. ¶ 75. However, Evermann teaches that its location metadata is the location of the device and the user at the time of the spoken request. Khosh 2nd Decl. ¶ 7 (citing Ex. 1002 ¶¶ 39–40, 47). In particular, Evermann’s disclosure that the location metadata is used to improve recognition accuracy during the conversion of the spoken request to text establishes that the location in question is indeed the location of the user at the time the request is spoken. Reply 7; Khosh 2nd Decl. ¶ 21; Ex. 1002 ¶¶ 47, 56, 90.

In addition, Patent Owner argues that no metadata is “associated” with the spoken request because it is not “attached” to the request. PO Resp. 29 (citing Melendez Decl. ¶ 75); Sur-Reply 7. However, this argument is premised on Patent Owner’s proposed construction of “associated,” as requiring attachment. PO Resp. 14–16. As set forth above in Section III.C.3, we do not adopt that construction.

Finally, Patent Owner argues that the memory of claim 1 must be located in the mobile device, rather than the transaction server, in order to

satisfy the claim. Sur-Reply 7. However, claim 1 is directed to a system, with no requirement of where in the system the claimed memory is located. We note further that illustrative embodiments disclosed in the '981 patent have the transcript and metadata stored on a computer server separate from the mobile device. Ex. 1001, Fig. 1.

The third limitation of claim 1 requires:

an interface port to a social network database, configured to transmit a request to mine information of the social network database based on the transcript and the metadata, and to receive social network information from the social network database based on the transmitted request.

Ex. 1001, 16:20–25. Petitioner relies on the disclosure in Evermann of connections between transaction server 110 and content providers 114a–c, which enable Search Management Software 118 (part of the transaction server) to send search requests including the text of the requests and the location metadata to content providers 114a–c, and receive the search results back. Pet. 15–16 (citing Ex. 1002 ¶¶ 40, 42–43, 53, 62–65, 67, 68, 77, 94; Khosh Decl. ¶¶ 106–110); Reply 8–9.

Petitioner also relies on the disclosures in Yoo of mobile devices sending search queries to social networks such as Facebook, Myspace, and LinkedIn, and argues, as discussed above, that one of ordinary skill would have been motivated to use the system of Evermann to search for and retrieve information for such social networks as described in Yoo. Pet. 37–38 (citing Ex. 1003, Figs. 1, 3, ¶¶ 16–19, 27–28, 30, 31, 35–39, 56, 64; Khosh Decl. ¶ 180).

Patent Owner argues that Evermann does not disclose or suggest a social network database. PO Resp. 28, 30–32 (citing Melendez Decl. ¶¶ 69, 82–83, 90); Sur-Reply 8. Patent Owner's argument hinges on its proposed

narrow definition of “social network database,” requiring a database that “stores the interpersonal relationships among multiple members of the community and the content they contributed to the database.” As discussed in Section III.C.1 above, we do not adopt that construction. The ‘981 patent discloses that a “centralized community search database” is an example of a “social network database,” consistent with Evermann’s references to searches directed to general-purpose content providers Google and ESPN, and Yoo’s references to Facebook, Myspace, and LinkedIn. Reply 8–9; Ex. 1001, Code (57); Khosh Decl. ¶¶ 109, 180.

Patent Owner repeats its argument that neither Evermann nor Yoo teach use of a transcript associated with metadata. PO Resp. 32–33. That argument is unpersuasive for the reasons discussed above in connection with the second limitation of claim 1.

Also, Patent Owner argues that the system of Evermann does not “mine information” as required by the claim. PO Resp. 33–34; Sur-Reply 9. However, as set forth in Section III.C.5 above, we agree with Petitioner that the terms “search” and “mine” in the context of the ‘981 patent are interchangeable and do not mean anything beyond “search,” and we have not adopted Patent Owner’s narrow definition of “mine.” Evermann’s disclosure of sending searches to content providers satisfies the claim requirement, “to mine information of the social network database.” Reply 9–10; Khosh 2nd Decl. ¶ 22.

The fourth limitation of claim 1 requires:

at least one processor configured to transmit the request through the interface port dependent on at least the transcript and the metadata, to receive the social network information from the interface port.

Ex. 1001, 16:26–29. Petitioner relies on the fact that transaction server 110 of Evermann includes a processor, which would perform as required.

Pet. 17 (citing Ex. 1002 ¶ 94 (“servers mentioned herein can be implemented on commercially available servers that include single or multi-processor systems”); Khosh Decl. ¶¶ 111–113). Patent owner does not directly address this limitation of the claim, and our review of the record confirms Petitioner’s analysis.

The fifth limitation of claim 1 requires:

a communication port configured to communicate at least a portion of the social-network information to the user.

Ex. 1001, 16:30–31. Petitioner relies on the connection in Evermann between transaction server 110 and user device 102, through which the search results are transmitted to the user. Pet. 17–18 (citing Ex. 1002 ¶¶ 8, 21, 27, 29, 41, 43, 44, 70, 72; Khosh Decl. ¶¶ 114–116). Patent owner does not directly address this limitation of the claim, and our review of the record confirms Petitioner’s analysis.

The closing “wherein” clause of claim 1 requires:

wherein the social network database comprises a plurality of social network records, the at least one processor being further configured to rank the received social network information comprising a plurality of received social network records dependent on at least one social network ranking factor, the communication port being further configured to output at least a portion of the social network records in a manner dependent on the at least one social network ranking factor.

Ex. 1001, 16:32–40. Petitioner relies on the disclosure in Evermann of content providers 114a–c, such as Google and ESPN, containing a plurality of records, and the functioning of transaction server 110 to rank search results received from the content providers according to factors such as

responsiveness, targeting, and/or relevance, and provide the ranked result to the user device. Pet. 18–21 (citing Ex. 1002 ¶¶ 42–43, 53, 62–63, 65, 67, 70–71; Khosh Decl. ¶¶ 117–126).

Petitioner also relies on the disclosures in Yoo of ranking query results based on such factors as recommendations from users closely-linked with the inquiring user, credibility, and popularity, and argues, as discussed above, that one of ordinary skill would have been motivated to adopt the system of Evermann to rank searches as taught by Yoo. Pet. 38 (citing Ex. 1003, Figs. 3–5, ¶¶ 16, 31, 34, 54, 58–62, 67–68, 70–71, 74–75; Khosh Decl. ¶ 181).

Patent Owner argues that neither Evermann nor Yoo teach the required “social network ranking factor.” PO Resp. 35–36 (citing Melendez Decl. ¶¶ 94–105); Sur-Reply 8–9. Patent Owner relies on its construction of social network ranking factor as “an interpersonal metric, based upon relationships between members, that is derived from a social network database.” PO Resp. 25.

As set forth above in Section III.C.2, we do not adopt Patent Owner’s construction of “social network ranking factor.” We agree with Petitioner that both Evermann and Yoo teach criteria for ranking search results, each of which are reasonably characterized as social network ranking factors because the ranking taught by these criteria order the search results of the social network (*e.g.*, Google searching Facebook) in a manner that comports with the ranking described in the ’981 patent. Reply 10–12; Khosh Decl. ¶¶ 119–120; Khosh 2nd Decl. ¶¶ 24–25. Therefore we determine that Evermann alone, and Evermann in combination with Yoo, teaches the requirements within the wherein clause of claim 1.

In sum, we have considered the entirety of the evidence including the objective indicia of nonobviousness first discussed above, and weighed the entirety of the evidence as a whole. We determine that Petitioner has proved by a preponderance of the evidence that claim 1 would have been obvious over Evermann alone, and claim 1 also would have been obvious over Evermann and Yoo.

5. *Independent Claim 10*

Claim 10, reproduced at Section II.B above, is a method claim counterpart to system claim 1, and for all purposes here its limitations are substantially the same as those of claim 1, albeit from the perspective of performing a method rather than specifying a system which performs the corresponding functions. *C.f.*, Ex. 1001, 16:11–49, *with* 17:4–26. In support of the challenge to claim 10, Petitioner and its expert rely on substantially the same portions of Evermann and Yoo, and make essentially the same arguments, as for claim 1. Pet. 27–31, 37–40 (citing Khosh Decl. ¶¶ 147–157, 180–185). Patent Owner makes essentially the same arguments in response. PO Resp. 39–41. Our reasoning provided in the context of claim 1 equally applies to claim 10 and need not be repeated here. For the essentially same reasons as those discussed above for claim 1, Petitioner has proved by a preponderance of the evidence that claim 10 would have been obvious over Evermann alone, and that claim 10 also would have been obvious over Evermann and Yoo.

6. *Dependent Claims 4 and 15*

Claim 4 depends from claim 1 and additionally requires:

the social-network records comprise user reviews of a plurality of restaurants, the social network ranking factor comprising user review ratings of respective restaurants, the communication port

being further configured to output at least a portion of the user reviews of the plurality of restaurants dependent on the respective user review ratings and a geographical distance of the restaurants from the user.

Ex. 1001, 16:47–54. Claim 15 depends from claim 10 and has a similar requirement. *Id.* at 18:1–6. Petitioner relies on the disclosures in Evermann of formulating queries related to restaurants (*e.g.*, a user’s “favorite Italian restaurant,” “SEARCH BARS IN LAS VEGAS . . .,” sharing reviews and ratings of business among different users, and “location-related . . . search requests,” including searching for a particular type of business in a specific location (“SEARCH BOSTON HOTELS”). Pet. 23, 31, 34 (citing Ex. 1002, Fig. 3, ¶¶ 9, 40, 41, 53, 55–56, 64, 80, 87). This record includes Figure 3 of Evermann, which “displays a map in response to a search for a particular type of business in a specific location” — specifically, “Search Coffee in Manhattan”), with the ability to obtain “DIRECTIONS” to the search result. Ex. 1002, Fig. 3, ¶ 64. Petitioner also relies on additional teachings in Evermann, discussed above for claim 1, of the use of the location of the user during the spoken request as metadata associated with requests. Pet. 14. Petitioner further relies on the disclosures in Evermann of ranking search results (“prioritizes the received content,” “prioritize its results,” “displays a small number of the top-ranked results,” “prioritize the content it receives,” “display the received search result items in rank order, with the most responsive result at the top of the list of displayed results”). Pet. 19, 23, 34 (citing Ex. 1002, ¶¶ 43, 63, 65, 67, 71). Based on these disclosures, Petitioner’s expert, Dr. Khosh testifies that it would have been obvious to one of ordinary skill to search and rank based on user reviews and distance

from location as required by claims 4 and 15. Pet. 23–24 (citing Khosh Decl. ¶¶ 133–135, 161–162).

Petitioner also relies on the disclosures in Yoo which teach ranking by user recommendations and proximity to the user location: “query for ‘Italian restaurants’ to identify Italian restaurants in a specified area,” “recommendations of businesses, service providers, products, information, entertainment programs, merchants, etc.,” “rank businesses based . . . on the number of recommendations from recommending users,” “only restaurant recommendations of the restaurant critics . . . might be incorporated into the search results,” “search result including one or more selected businesses . . . in the ranked order,” “a location of the searching user is provided . . . so that the search service can prioritize relevant businesses based at least in part by distance from the searching user,” “prioritize businesses in part based on how close the business is to this location . . . location of the user device may be automatically determined using a global positioning system (GPS).” Pet. 38–42 (citing Ex. 1003 ¶¶ 4, 16, 30–31, 39, 62, 65; Khosh Decl. ¶¶ 190–192).

Patent Owner argues for claim 4 that neither Evermann nor Yoo disclose user review ratings of respective restaurants, or geographical distance of restaurants, as social network ranking factors. PO Resp. 37–38 (citing Melendez Decl. ¶¶ 125–134). Patent Owner’s expert Dr. Melendez asserts that, while Evermann can search for reviews that may relate to restaurants, but does not disclose the use of the review as ranking factors. Melendez ¶ 127. Dr. Melendez argues Evermann does not discuss distances, but rather discusses locations, and therefore does not suggest ranking search results based on distance from the user and user review ratings. *Id.* ¶ 128.

Dr. Melendez discounts the relevance of Figure 3 of Evermann, noting that no actual distance is shown. *Id.* at ¶ 129. Dr. Melendez also opines that Yoo fails to disclose these features. *Id.* at ¶¶ 131–133.

For claim 15, Patent Owner additionally argues that its scope differs from claim 4 in that, rather than requiring, as ranking factors, a physical distance from the location and user ratings, claim 15 requires a physical distance from the location and *distance from* a user review, which requirement, according to Dr. Melendez, is not taught by the asserted references. PO Resp. 41 (citing Melendez Decl. ¶ 191–193); Sur-Reply 12–13.

In response to Dr. Melendez, Petitioner reiterates the evidence discussed above, supplemented by Dr. Khosh’s testimony that Evermann alone, and in combination with Yoo, would have taught searching for restaurants based on “transcript and location,” and in particular would have taught searching and ranking based on “distance from the location and a factor dependent on user ratings.” Reply 14, 17–18; Khosh 2nd Decl. ¶¶ 30–31. Petitioner further argues that Patent Owner’s interpretation of claim 15, to require ranking based on distance from a user review, is contrary to the plain meaning of the claim, which as a matter of logic refers to ranking based on distance of the restaurant from the user, not the review. Reply 17 (citing Khosh 2nd Decl. ¶ 37).

We agree with Petitioner that the disclosures of Evermann alone, and also in combination with Yoo, render obvious claims 4 and 15. As demonstrated above, both references provide ample teachings of a variety of searches for businesses, including restaurants, based on a variety of criteria, including reviews and distance of the business from the user. Both teach

ranking search results using a variety of factors, including distance from the users, reviews, recommendations, “top-ranks,” “recommendations of the restaurant critics,” and the like. Petitioner’s expert Dr. Khosh provides persuasive testimony that these disclosures, whether considering Evermann alone or in combination with Yoo, would have taught or suggested to one of ordinary skill the subject matter of claims 4 and 15. Khosh Decl. ¶¶ 133–135, 161–173, 184, 190–192. We do not find the testimony of Dr. Melendez persuasive, as substantially relying on Patent Owner’s claim construction proposals that we have not adopted, and failing to take into account the ability of an ordinarily skilled artisan to “be able to fit the teachings of multiple patents together like pieces of a puzzle” because the skilled artisan is “a person of ordinary creativity, not an automaton.” *KSR*, 550 U.S. at 420–21. We also are not persuaded that Patent Owner’s interpretation of claim 15, requiring ranking based on distance from a user review, has any merit, because we see nothing in the specification that would support such a view of the claim language.

Having considered the entirety of the evidence including the objective indicia of nonobviousness first discussed above, and weighed the entirety of the evidence as a whole, we determine that Petitioner has proved by a preponderance of the evidence that claims 4 and 15 would have been obvious over Evermann alone, and claims 4 and 15 also would have been obvious over Evermann and Yoo.

7. Independent Claim 16

Claim 16 is a method claim that is similar to claim 10, but includes additional requirements essentially similar to those of dependent claim 4,

discussed above, relating to the use of “user ratings” and distance from the location to search and retrieve records from a database — *viz.*:

automatically generating a query of a social information search engine comprising *user ratings* of places

automatically ranking the plurality of social network records corresponding to the query . . . according to at least one social network ranking factor comprising at least a physical distance from the location and a factor dependent on the *user ratings*

Ex. 1001, 18:14–23 (emphasis added). Petitioner’s evidence and arguments for these aspects of claim 16 are essentially the same as for claims 4 and 15. Pet. 32–36, 38–40 (citing Khosh Decl. ¶¶ 163–173). Likewise, Patent Owner makes essentially the same arguments for ranking factor requirements of claim 16 as it makes for claim 4. PO Resp. 42–43 (citing Melendez Decl. ¶¶ 206–212).

For the same reasons as discussed above for claim 4, we agree with Petitioner that the disclosures of Evermann alone, and also in combination with Yoo, render obvious claim 16. As demonstrated above, both references provide ample teachings supporting the requirements of searching and ranking based on reviews and distance of the business from the user. Petitioner’s expert Dr. Khosh provides persuasive testimony that these disclosures, whether considering Evermann alone or in combination with Yoo, would have taught or suggested to one of ordinary skill the subject matter of claim 16. Khosh ¶¶ 133–135, 163–176, 180–185, 190–192. We do not find the testimony of Dr. Melendez persuasive, for the reasons discussed above.

Having considered the entirety of the evidence including the objective indicia of nonobviousness first discussed above, and weighed the entirety of

the evidence as a whole, we determine that Petitioner has proved by a preponderance of the evidence that claim 16 would have been obvious over Evermann alone, and claim 16 also would have been obvious over Evermann and Yoo.

8. *Dependent Claims 2, 3, 12, and 17*

Claims 2–3, 12, and 17 of the ’981 patent depend from independent claims 1, 10 and 16, and further require the claimed ranking factor to be “social network credibility” (claim 2), “social network popularity” (claim 3), or one or both of the same (claims 12, 17).¹⁶ Ex. 1001, 16:41–46, 17:30–35, 18:28–33.

Petitioner challenges these claims as unpatentable over Evermann, and also as unpatentable over the combination of Evermann and Yoo. Pet. 21–22, 31, 36–37, 40. Petitioner relies on the disclosures in Evermann of ranking based on responsiveness, targeting, relevance, business reviews, wealth and status, and ratings from trusted friends, which it argues relate to, and teach or suggest, the use of ratings based on credibility and popularity. *Id.* at 21–22, 40 (citing Ex. 1002 ¶¶ 42–43, 49, 63, 65, 67, 70–71, 80–81, 87; Khosh Decl. ¶¶ 129–132, 158, 177, 186); Reply 12 (citing Khosh 2nd Decl. ¶ 26).

Petitioner further relies on the disclosures in Yoo of ranking based on “popularity ranking,” “credibility,” degrees of closeness, relationship graphs, and identity of recommending users which, in combination with Evermann, it argues render obvious the claim limitations based on credibility or

¹⁶ Claim 12 is also satisfied by ranking factors based on “reverse chronological order” or “type of social information,” which are discussed in Section III.F.9 below.

popularity. Pet. 40–41 (citing Ex. 1003, Figs. 2, 4, 5, ¶¶ 16, 21, 28, 44, 55–56, 70–71, 74–75; Khosh Decl. ¶¶ 186–189); Reply 12–13 (citing Khosh 2nd Decl. ¶ 27).

For these claims, Patent Owner reiterates its argument that neither Evermann nor Yoo disclose “social network ranking factors,” and further that they do not disclose use of “social network credibility,” or “social network popularity.” PO Resp. 36, 41 (citing Melendez Decl. ¶¶ 106–114, 115–124, 215–218). Patent Owner also challenges Petitioner’s reliance on Evermann’s use of information from trusted sources, arguing that it is based on the user’s determination of trust, rather than a determination made by a social network. *Id.* Petitioner argues that Yoo’s “degree of closeness,” is not credibility or popularity. *Id.* Patent Owner further criticizes Petitioner’s reliance on the same disclosures in Evermann and Yoo as teaching both the credibility requirement of claim 2 and the popularity requirement of claim 3. *Id.* at 37–37.

In response, Petitioner argues “Evermann discloses that credibility and/or popularity is important to providing ‘highly sifted, targeted results.’” Reply 12 (citing Ex. 1004 ¶ 67; Khosh Decl. ¶¶ 129–130). Petitioner argues that consideration of trusted friends is a measure of credibility and popularity. *Id.* (citing Khosh 2nd Decl. ¶ 26). Petitioner also argues that “Yoo expressly ranks results according to the ‘degree-of-closeness’ of the user’s relationships to the recommending party,” which suggests credibility. *Id.* (citing Ex. 1005 ¶¶ 44, 55, 59–74; Khosh 2nd Decl. ¶ 27). In addition, Yoo expressly ranks by popularity. *Id.* at 12–13 (citing Ex. 1005 ¶ 56; Khosh 2nd Decl. ¶ 27). Petitioner also submits that there is no contradiction in relying on the same portions of Evermann and Yoo for both the credibility

and popularity requirements, because the terms are not mutually exclusive, and allow some overlap. *Id.* at 13.

We are persuaded by Petitioner that the disclosures of Evermann alone, and also in combination with Yoo, render obvious claims 2–3, 12, and 17. As demonstrated above, both references provide ample teachings supporting the requirements of ranking by credibility and popularity. Although Evermann does not explicitly disclose credibility or popularity ranking, its teachings directed to a wide variety of closely related ranking criteria reasonably teach that subject matter. For example, Evermann refers to “optimiz[ing] the quality of the content of information that is retrieved” (¶ 42), “prioritiz[ing] the received content by using the metadata and commerce information” (¶ 43), “optimiz[ing] the quality and responsiveness of the search results” (¶ 49), “return[ing] results that are better targeted to the user” (¶ 63), “return highly sifted, targeted results to the user” (¶ 67), “search[ing] result items that have a degree of responsiveness greater than a threshold degree of responsiveness” (¶ 70), “display[ing] the received search result items in rank order, with the most responsive result at the top of the list of displayed results” (¶ 71), and “receiving information from a trusted source” (¶ 87).

Likewise, Yoo discloses ranking using “relationship graphs” based on “affinity groups” and “users . . . directly related as friends” (Fig. 3, ¶¶ 28, 44, 61), “[d]iscover trusted businesses from your friends” (Fig. 4), business recommendations (¶ 16), use of Facebook (¶¶ 18, 55), “perception of the relevant expertise” (¶ 32), “closeness of the relationship” (¶ 34), “popularity ranking” (¶ 56), and “credibility that the searching user attributes the users” (¶ 75).

In light of these disclosures, Patent Owner's arguments are unpersuasive as grounded on its proposed constructions of "social network database" and "social network rating factor," which we have not adopted. We also agree with Petitioner that ranking by credibility or popularity are closely related concepts that are not mutually exclusive, and there is no contradiction in relying on the same portions of Evermann and Yoo for both the credibility and popularity requirements. Reply 13.

Accordingly, having considered the entirety of the evidence including the objective indicia of nonobviousness first discussed above, and weighed the entirety of the evidence as a whole, we determine that Petitioner has proved by a preponderance of the evidence that claims 2–3, 12, and 17 would have been obvious over Evermann alone, and those claims also would have been obvious over the combination of Evermann and Yoo.

9. *Dependent Claims 5 and 6*

Claims 5 and 6 of the '981 patent depend from independent claim 1 and require outputting the mined information based on "chronological order" (claim 5), or "type of social information" (claim 6). Ex. 1001, 16:55–60.

Petitioner challenges these claims as unpatentable over Evermann, and also as unpatentable over the combination of Evermann and Yoo. Pet. 24–26, 42–43. For claim 5, Petitioner relies on the disclosures in Evermann involving "time-sensitive information such as weather, traffic, and sports" as having taught or suggested teaching ordering results chronologically. Pet. 24–25 (citing Ex. 1002 ¶ 86; Khosh Decl. ¶¶ 137–138).

For claim 5, Patent Owner argues that Petitioner's reliance on time-sensitive information does not teach chronological order because the claim requires "output [of] the oldest, outdated information first." PO Resp. 38

(citing Melendez Decl. ¶¶ 135–143). In response, Petitioner argues that it would have been a routine modification to one of ordinary skill to arrange search results in chronological order, given the disclosures in Evermann of time-sensitive information such as the examples in Evermann of information related to sports, weather, and traffic. Reply 14 (citing Khosh Decl. ¶¶ 136–138);

We are persuaded by Petitioner’s expert Dr. Khosh’s testimony that the disclosures in Evermann of “time-critical . . . search requests” and retrieval of “time-sensitive information” would have taught or suggested teaching ordering results chronologically. Ex. 1002 ¶¶ 55, 86; Khosh Decl. ¶¶ 137–138. We also agree with Dr. Khosh that ranking based on ascending or descending chronology is merely a reversal of order that would have been obvious to one of ordinary skill. Khosh Decl. ¶ 158.

For claim 6, Petitioner relies on the disclosures in Evermann of categorization of query results by the type of returned content, which it argues would have rendered obvious outputting search results based on the type of social information that was retrieved. Pet. 25–26 (citing Ex. 1002 ¶¶ 12, 64; Khosh Decl. ¶¶ 139–141). Petitioner also argues that disclosures in Yoo of categorizing the retrieved recommendations by type render claim 6 obvious in light of the combination of Evermann and Yoo. *Id.* at 42–43 (citing Ex. 1003 ¶¶ 39, 67–68; Khosh Decl. ¶¶ 193–195).

For claim 6, Patent Owner argues that Petitioner’s reliance on “categories” of information is not a teaching of “type of social information.” PO Resp. 38–39 (citing Melendez Decl. ¶¶ 144–150). Petitioner responds that Evermann teaches that its categories are determined “based on the type of returned content,” and that in any event Yoo would suggest to one of

ordinary skill to adapt Evermann to sort by type. Reply 15 (citing Ex. 1002 ¶ 64, Ex. 1003 ¶¶ 67–68; Khosh Decl. ¶¶ 193–195).

We are persuaded by Petitioner’s expert Dr. Khosh’s testimony that the disclosures in Evermann and Yoo of the categorization of query results would have taught or suggested outputting based on type of social information to provide efficient presentation, instill confidence in results, and provide quick and convenient presentation on mobile devices. Khosh Decl. ¶¶ 193–194.

Accordingly, having considered the entirety of the evidence including the objective indicia of nonobviousness first discussed above, and weighed the entirety of the evidence as a whole, we determine that Petitioner has proved by a preponderance of the evidence that claims 5 and 6 would have been obvious over Evermann alone, and those claims also would have been obvious over the combination of Evermann and Yoo.

10. Dependent Claims 7 and 11

Claims 7 and 11 of the ’981 patent depend from independent claims 1 and 10, respectively, and require the claimed ranking factor to be “physical distance from the location” (claim 7) or “physical distance from the mobile-electronic-device user’s location” (claim 11). Ex. 1001, 16:61–63, 17:29–30.

Petitioner challenges these claims as unpatentable over the combination of Evermann and Yoo. Pet. 41–42. Petitioner relies on the disclosures in Evermann and Yoo of ranking search results based on the distance from the user’s location discussed in Section III.F.6 above in connection with claims 4 and 15. Pet. 41–42 (citing Ex. 1003 ¶¶ 30, 65; Khosh Decl. ¶¶ 190–192); Reply 15 (citing Khosh 2nd Decl. ¶ 28).

In response, Patent Owner argues that Petitioner's reliance on the use of distance in Yoo has not been shown to be a "physical distance." PO Resp. 39. Petitioner counters that one of ordinary skill "would clearly understand Yoo to address physical distance, and not emotional or other distance." Reply 15 (citing Yoo ¶ 30; Khosh 2nd Decl. ¶ 28). We agree with Petitioner for the same reasons as discussed above in Section III.F.6 above for claims 4 and 15

Accordingly, having considered the entirety of the evidence including the objective indicia of nonobviousness first discussed above, and weighed the entirety of the evidence as a whole, we determine that Petitioner has proved by a preponderance of the evidence that claims 7 and 11 would have been obvious over Evermann and Yoo.

11. Dependent Claims 8–9, 13–14, and 18

Claims 8, 13, and 18 depend from independent claims 1, 10 and 16, and further require communicating or presenting the search results on "a location mapping user interface platform" (claims 8, 13) or "within a spatial mapping user interface" (claim 18). Ex. 1001, 16:64–67, 17:36–39, 18:34–36. Also claims 9 and 14, which depend from independent claims 1 and 10, respectively, require providing search results within or on "Google maps." *Id.* at 17:1–3, 17:40–42.

Petitioner challenges these claims as unpatentable over Evermann, and also as unpatentable over the combination of Evermann and Yoo. Pet. 26–27, 31, 37, 42–43. Petitioner relies on the disclosure in Evermann of displaying search results on maps, including Google maps. *Id.* (citing Ex. 1002, Fig. 3, ¶¶ 41, 53, 64; Khosh Decl. ¶¶ 142–146); Reply 15–16, 18–19 (citing Khosh ¶¶ 29, 32).

Patent Owner argues Evermann does not disclose “communicating the social-network information within [a] map” or “on [a] map” because “Evermann only maps the name of the business and its location (not social-network-information).” PO Resp. 39 (citing Melendez Decl. ¶¶ 158–163). Patent Owner also argues that claim 18 requires outputting the *ranked* plurality of records within spatial mapping user interface, which is not taught by Evermann or Yoo. *Id.* at 43. In response, Petitioner cites the fact that Figure 3 of Evermann depicts a clickable link to “Directions,” demonstrating more than merely name and location mapping. Reply 15–16 (citing Ex. 1002, Fig. 3, ¶ 41; Khosh 2nd Decl. ¶ 29). For claim 18, Petitioner argues Evermann broadly taught adapting the map display as appropriate to the content to be displayed, and that in any event the “ranked plurality of records” refers to the records of claim 16, not the appearance of the “mapping user interface” of claim 18. *Id.* at 18–19 (citing Ex. 1002 ¶¶ 31, 64; Khosh 2nd Decl. ¶ 32).

We agree with Petitioner that the disclosures in Evermann alone, and in combination with Yoo, render obvious claims 8–9, 13–14, and 18. As demonstrated above, Evermann provides ample teachings of the map-based presentation required by the claims. Petitioner’s expert Dr. Khosh provides persuasive testimony that these disclosures, whether considering Evermann alone or in combination with Yoo, would have taught or suggested to one of ordinary skill the subject matter of the claims. Khosh ¶¶ 142–146; Khosh 2nd Decl. ¶¶ 29, 32.

Accordingly, having considered the entirety of the evidence including the objective indicia of nonobviousness first discussed above, and weighed the entirety of the evidence as a whole, we determine that Petitioner has

proved by a preponderance of the evidence that claims 8–9, 13–14, and 18 would have been obvious over Evermann alone, and claims 8–9, 13–14, and 18 would have been obvious over Evermann and Yoo.

12. Summary

In sum, for each element of claims 1–6, 8–10, and 12–18, Petitioner has cited disclosures in Evermann that, taken together, teach each requirement of the claims, as confirmed by the testimony of Petitioner’s expert Dr. Khosh, who persuasively articulates why one of ordinary skill in the art would have been taught the claimed subject matter. For Petitioner’s ground based on obviousness of claims 1–18 over the combination of Evermann and Yoo, Patent Owner’s evidence of nonobviousness and Petitioner’s evidence of obviousness have been considered collectively and weighed against each other. The evidence of obviousness is strong and the evidence of nonobviousness is weak. We conclude that one of ordinary skill would have been motivated to adopt the pertinent teachings of Yoo to those of Evermann, as proposed by Petitioner, and that the combination would have taught the subject matter of each of claims 1–18 to one of ordinary skill.

For both grounds, we have taken into account the proper construction of the claim, the level of ordinary skill in the art, and Patent Owner’s submission of evidence directed to indicia of nonobviousness. We are not persuaded by Patent Owner’s arguments of nonobviousness, which are in substantial part based on claim construction contentions that we have not adopted, and which discount the creative abilities of one of ordinary skill in the art to be taught subject matter not explicitly disclosed.

Accordingly, based on our review of the record and the parties' submissions as discussed above, we determine that Petitioner has proved by a preponderance of the evidence that claims 1–6, 8–10, and 12–18 of the '981 patent would have been obvious over Evermann, and also that Petitioner has proved by a preponderance of the evidence that claims 1–18 would have been obvious over Evermann and Yoo.

G. Obviousness of Claims 1–19 Over Ramer and Hayashi

Petitioner challenges dependent claims 1–19 as unpatentable under 35 U.S.C. § 103(a) over the combination of Ramer and Hayashi. Pet. 43–76.

Because, as set forth above, we have determined that claims 1–18 are unpatentable as obvious on light of Evermann alone and/or in light of the combination of Evermann and Yoo, we do not address Petitioner's challenges to the claims based on the combination of Ramer and Hayashi, except that we consider claim 19, which is only challenged based on the combination of Ramer and Hayashi, as well as claims 16 and 18, given that claim 19 depends from those claims.

1. Ramer

Ramer, titled "Location Influenced Search Results," was filed January 19, 2006 (with related continuation-in-part applications filed in November, 2005), and published March 15, 2007. Ex. 1004, codes (54), (22), (63), (43). Ramer relates to improved mobile advertisement syndication for mobile communication facilities. Ex. 1004 ¶ 3. The system of Ramer may receive a search request from a mobile communication facility as well information about the location of the mobile communication facility. *Id.* ¶ 5. The system presents search results responsive to the request, which are prioritized according to relevancy wherein relevancy is based in part on

location. *Id.* The search request may be entered as a voice command to the mobile communication facility. *Id.* ¶ 6. Figure 1 of Ramer is reproduced below.

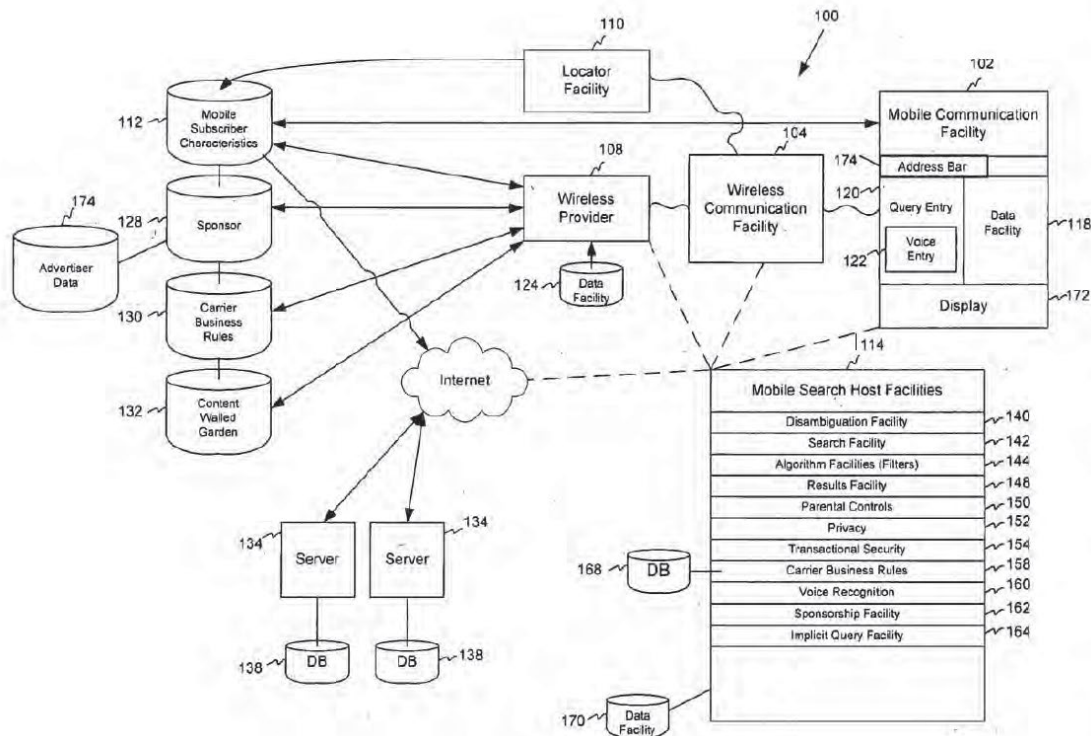


Fig. 1

Figure 1 depicts a wireless search platform including Mobile Communications Facility 102, which can be a mobile phone, to process user-initiated queries via query entry system 120, which includes voice entry function 122. *Id.* ¶¶ 37, 40, 44. Mobile Communications Facility 102 can access Mobile Search Host Facilities 114, which includes Search Facility 142, used to initiate a search, and Voice Recognition Facility 160 to carry out spoken commands, assisted by Disambiguation Facility 140 to reduce ambiguity as to the meaning of a query entered by a user. *Id.* ¶¶ 39, 57–59, 80, 109, 258. Mobile Communications Facility 102 also can be linked to Locator Facility 110 to identify the geographical location of the user and

proximity to other locations, which can be combined with the user query. *Id.* ¶¶ 37, 51–53. Searches can be directed to servers 134 and databases 138 connected to the Internet to retrieve information about businesses and other subjects. *Id.* ¶¶ 83, 103. The system has the ability to order and display search results, organized by type of content, date, or concept. *Id.* at ¶ 75.

The system may be used to search for restaurants, including searching “by the location of the mobile communication facility to recommend only those restaurants that are in the user’s immediate vicinity and further filtered . . . to recommend only that subset or restaurants serving . . . in the user’s current vicinity that have received high ratings by restaurant patrons with a demographic profile similar to the user’s.” *Id.* ¶ 119.

2. Hayashi

Hayashi, titled “Contextual Mobile Local Search Based On Social Network Vitality Information,” was filed April 28, 2006, and published November 1, 2007. Ex. 1005, codes (54), (22), (43). Hayashi relates to performing contextual mobile searches based, at least in part, on social networking information. Ex. 1005 ¶ 1. As described in Hayashi

the terms “social network” and “social community” refer to a concept that an individual’s personal network of friends, family colleagues, coworkers, and the subsequent connections within those networks, can be utilized to find more relevant connections for a variety of activities, including, but not limited to dating, job networking, service referrals, content sharing, like-minded individuals, activity partners, or the like.

Id. ¶ 17.

Searches based on social networking information may account for “where the mobile user may be physically located,” “whether members of the mobile user’s social network are nearby,” and “aggregated information

from other social networking members.” *Id.* ¶¶ 21, 25. Hayashi indicates that by applying social networking information to a search request, the results of the search may be made more relevant to the user. *Id.*; *see also id.* ¶ 101 (“Moreover, the list of possible restaurants may be ordered based on social networking information, such as which restaurants a friend, family member, close contact (first degree of separation), or the like has recommended. The list might also provide a review from a friend, family member, or the like.”). Examples includes verbal entry of a search request for restaurants, resulting in displaying search results by restaurants location and review. *Id.* at Fig. 7, ¶¶ 97–103.

3. *The Combination of Ramer and Hayashi*

Petitioner provides testimony of its expert, Dr. Khosh, that one of ordinary skill would have been motivated to incorporate social networking features disclosed in Hayashi into the search system of Ramer to enrich the user experience and enhance relevancy of search results. Pet. 57–58 (citing Khosh Decl. ¶¶ 272–273). Specifically, Dr. Khosh persuasively opines that an artisan of ordinary skill “would have appreciated refining Ramer’s results using social network features, as suggested by Hayashi” in order to

provid[e] ease, speed, and/or user confidence in evaluating the results presented, would accommodate the application on mobile devices, for example, by reducing the amount of user input required in order to receive context-enhanced results, would accelerate the visibility of emerging information whether the feedback is successful or unsuccessful, and/or would generally increase the chances of presenting desirable results and/or presenting the results most likely to success early in the queue.

Khosh Decl. ¶ 272. Patent Owner does not address this issue. *See* PO Resp. 43–56.

Based on our review of the record, including the evidence that one of ordinary skill would have appreciated refining Ramer with attributes of Hayashi such as ease and speed in evaluating search results, facilitating user input, and other improvements, we determine that the preponderance of the evidence supports Petitioner's expert's testimony that one of ordinary skill would have been motivated to apply, and would have had a reasonable expectation to succeed in applying, the social networking teachings of Hayashi to the search system of Ramer.

4. Claims 16, 18, and 19

For the preamble of claim 16, Petitioner relies on the disclosures in Ramer of a system including mobile devices for receiving voice commands to activate query requests, and presenting results to the user, taking into account the user's location. Pet. 44–45, 71 (citing Ex. 1004 ¶¶ 5–9, 37, 40, 44; Khosh Decl. ¶¶ 197–203).

For the first, “receiving,” limitation of claim 16, Petitioner relies on the disclosures in Ramer of receiving user-generated speech via a microphone and/or via communication for processing and/or querying, and receiving location information associated with speech. Pet. 45, 71–72 (citing Ex. 1004 ¶¶ 5–9, 37, 41, 44, 52, 55, 57, 59, 80, 86, 109, 143, 157, 158, 201, 207, 739; Khosh Decl. ¶¶ 205–206, 346, 349).

For the second, “automatically transcribing,” limitation of claim 16, Petitioner relies on the disclosures in Ramer of voice entry 122 providing voice/speech recognition to generate text queries, and associating the transcript with location as metadata to improve the query. Pet. 45–46, 72 (citing Ex. 1004 ¶¶ 94, 114, 126–128, 253, 287, 328, 455, 482, 508; Khosh Decl. ¶¶ 209–222, 351).

For the third, “automatically generating,” limitation of claim 16, Petitioner relies on the disclosures in Ramer of automatically handling query requests and results between host facility 112 and various data resources to request records, including social network records such as products/services, entertainment, blogs, and/or highly-rated restaurants. Pet. 48–49, 73 (citing Ex. 1004 ¶¶ 42, 50, 57, 59, 62, 65, 71, 74, 82, 87, 89–91, 99, 100, 118–119, 142, 148, 158, 163, 234, 281, 309, 340; Khosh Decl. ¶¶ 224–226, 352).

For the fourth, “automatically ranking,” limitation of claim 16, Petitioner relies on the disclosures in Ramer of ranking results based on popularity, frequency, sales, rates-of-change, freshness, among others, each indicating social network factors, including restaurants in the user’s vicinity that have received high ratings. Pet. 73–74 (citing Ex. 1004 ¶¶ 72, 106, 164, 166, 217–218, 232, 234, 251, 285, 298, 326, 330; Khosh Decl. ¶¶ 353–354). Petitioner also relies on the disclosure in Hayashi of ranking by distance. *Id.* (citing Khosh Decl. ¶ 355).

For the last, “outputting,” limitation of claim 16, Petitioner relies on the disclosures in Ramer of ordering and displaying search results content via display 172 based on mobile subscriber characteristics, location, and/or filter results. Pet. 74 (citing Ex. 1004 ¶¶ 60, 75, 500, 506–508, 509, 864–866). Petitioner also relies on the disclosure in Hayashi of listing restaurants based on social network factors such as user reviews, ratings, and location. Pet. 75 (citing Ex. 1005, Fig. 7, ¶¶ 99–103; Khosh Decl. ¶¶ 357–358).

For the mapping interface limitation of dependent claim 18, which depends from claim 16, Petitioner relies on the disclosure in Ramer of displaying various results within maps. Pet. 64–65, 76 (citing Ex. 1004, ¶¶ 74, 210, 298; Khosh Decl. ¶ 318).

Dependent claim 19, which depends from claim 18, and indirectly from claim 16, requires “automatically searching a set of persistently stored transcripts and associated metadata with the at least one automated processor.” Petitioner relies on the disclosure in Ramer of archival-type transcript and metadata storage within mobile subscriber characteristics database 112, including storage of transcript queries, as well as location metadata. Pet. 76 (citing Ex. 1004, ¶¶ 207, 225, 551, 552, 877; Khosh Decl. ¶¶ 333, 363).

In response, for claim 16, Patent Owner refers to arguments it makes in connection with claims 1 and 10 in light of Ramer and Hayashi. PO Resp. 54 (referencing Sections IX(a)–(b), and (k), at PO Resp. 43–45, 52–53, which in turn further incorporate Sections IX(c)–(d), at PO Resp. 52). Patent Owner thereby argues, regarding the preamble of claim 1, that there is no showing that Ramer or Hayashi discloses or suggests “presenting social-network-provided-outputs” or “a location associated with the user in response to the user’s spoken request.” *Id.* at 43–44 (citing Melendez Decl. ¶¶ 223–232).

Patent Owner also argues (in the incorporated discussion of the “memory” limitation of claim 1 and the second, “storing,” limitation of claim 10) that Petitioner has failed to show that Ramer or Hayashi disclose or suggest a memory that stores both the transcript and metadata, which metadata is associated with the spoken request and comprises the location during the spoken request. *Id.* at 44–45, 52–53 (citing Melendez Decl. ¶¶ 233–245).

Patent Owner repeats (in the incorporated discussion of the “interface port” limitation of claim 1) the argument that neither Ramer nor Hayashi

teaches an association of a transcript of a spoken request with metadata identifying the location of the spoken request, or a social network database. *Id.* at 45–46. Patent Owner also argues that Hayashi teaches receiving social network information before performing a search, whereas the claim requires the opposite. *Id.* at 46. In addition, Patent Owner argues that Petitioner has not shown that the combination of Ramer and Hayashi show a “request to mine information.” *Id.*

Patent Owner argues, (in the incorporated discussion of the sixth, “wherein” limitation of claim 1) that the references do not teach a “social network ranking factor.” PO Resp. 47. Also, Patent Owner argues (in the incorporated discussion of claim 10) that Petitioner “ignores that ‘the transcript’ in this limitation [the third limitation of claim 10] manifestly refers to ‘the transcript of the spoken request and metadata associated with the spoken request’ in the immediately preceding limitation [in the second limitation of claim 10].” *Id.* at 53.

In addition to the incorporated arguments directed to claims 1 and 10, Patent Owner further argues that Petitioner fails to address the additional requirement, in the fourth limitation of claim 16, of ranking based on physical distance from the location and user ratings. PO Resp. 54.

In response, Petitioner references the arguments made in connection with Grounds 1 and 2, discussed above, to the effect that Patent Owner’s construction of “social network database,” “social network ranking factor,” “associated, and “mining” are without merit, and therefore Patent Owner’s arguments directed to alleged lack of “social-network-provided-outputs,” “social network ranking factors,” a memory that stores both the transcript and associated location metadata, and “mining” the database, are based on

an incorrect premise. Reply 19–22. Petitioner also cites the disclosure in Ramer of the use of a user’s geographic location at the time the query was initiated as providing the required “location associated with the user in response to the user’s spoken request.” *Id.* (citing Ex. 1004 ¶ 37; Khosh Decl. ¶¶ 215–216). Petitioner further cites Ramer’s teachings of archival-remote storage, and local storage of transcript and memory on the device. *Id.* at 20 (citing Ex. 1003 ¶¶ 201, 227; Khosh Decl. ¶¶ 218–221).

In regard to Patent Owner’s argument that Hayashi discloses receiving social network information before performing a search, Petitioner points out that although Hayashi does include disclosures to that effect, it also discloses the required querying of social network databases for social network results for ranking and ordering. *Id.* (citing Ex. 1005 ¶¶ 100–102; Khosh 2nd Decl. ¶ 35. In response to Patent Owner’s argument directed to the claim 16 requirement of ranking based on physical distance from the location and user ratings, Petitioner cites the extensive disclosures in Ramer and Hayashi of the use of ranking based on both distance and user ratings. *Id.* at 25. In addition, Petitioner cites its expert Dr. Khosh’s testimony that, given those disclosures, it would have been obvious to one of ordinary skill that both location distance and user ratings would have been used together as rating factors. *Id.* (citing Khosh 2nd Decl. ¶¶ 39–40).

For claim 18, Patent Owner argues Petitioner fails to explain how the prior art outputs the ranked records within a spatial mapping user interface. PO Resp. 54 (citing Melendez Decl. 353–355). In response, Petitioner cites portions of Ramer disclosing displaying its ranked results within a spatial mapping interface such as provided by Google, and points out that the reference to “ranked” results in claim 18 refers to the earlier recitation of

ranked results in claim 16, and not that claim 18 requires displaying the results in ranked fashion. Reply 24–25 (citing Ex. 1004, ¶¶ 74, 369, 451, 210, 298; Khosh Decl. ¶ 318); Khosh 2nd Decl. ¶ 38).

For claim 19, Patent Owner argues that claim 16 does not require just generating a query from a transcript, but instead is structured to require first generating a transcript, and then separately generating a query.

PO Resp. 55. Based on this interpretation, Patent Owner argues that claim 19 requires searching persistently stored transcripts of user reviews, not searching persistently stored transcripts of queries, and that Petitioner has not shown that Ramer or Hayashi disclose such a search. *Id.* at 55–56. Petitioner responds that, although claim 16 may be broadly interpreted to cover separate query generation, it does not require it, and in any event claim 19 simply requires “searching a set of persistently stored transcripts and associated metadata,” and imposes no requirement for searching persistently stored transcripts of queries. Reply 26–27 (citing Khosh 2nd Decl. ¶¶ 41, 44). Petitioner’s reading is more persuasive.

From our review of the record, Petitioner has provided ample and persuasive support for its argument that the disclosures of Ramer and Hayashi teach or suggest the limitations of claim 19, including those of claims 16 and 18 from which claim 19 depends. Patent Owner’s arguments track those made in connection with Petitioner’s challenge based on Evermann and Yoo, which heavily rely on claim construction arguments that we do not accept. Also, Patent Owner incorporates by reference arguments made for claims 1 and 10 which do not pertain to claim 16 (and likewise claims 18 and 19) — *viz.*, the requirement for a memory to store the transcript and associated location metadata, and an alleged failure to address

the fact that “the transcript” in the third limitation of clam 10 refers to the transcript in the second limitation. PO Resp. 52–53. Moreover, Patent Owner’s arguments do not sufficiently recognize the abilities of one of ordinary skill in the art to be taught subject matter not explicitly disclosed. The Patent Owner arguments are unpersuasive for the reasons explained by Petitioner.

As to the argument that the preamble is not taught by the cited art, we are persuaded that regardless of whether the preamble is limiting the cited art teaches or at least suggests all elements of the preamble. *See* PO Resp. 43–44. Claim 16’s preamble recites “[a] computer-implemented method of mining information from a social network database, comprising.” Ex. 1001, 18:7–9. As discussed above, we are persuaded that in the context of the ’981 patent the terms “searching” and “mining” are interchangeable. *See* § III.C.5. Petitioner correctly points to Ramer’s discussion of system that allows users to perform searches using mobile devices and Hayashi’s discussion of social networking. *See* Pet. 43–44, 54; *see also* Reply 20 (noting that Hayashi is relied upon to teach the social network database “by its querying of social network databases for social network information/records such as family recommended restaurants.”). We are persuaded that these disclosures are sufficient to meet Petitioner’s burden to show that this aspect of the claim would have been obvious to a person of ordinary skill in the art.

We also are unpersuaded by Patent Owner’s argument that claim 16’s limitation “comprising at least a physical distance from the location and a factor dependent on the user ratings,” was not shown to be taught by the prior art. PO Resp. 54. Petitioner argues that

Hayashi discloses listing restaurants with recommendations and physical distance from the user. Ex. 1005, Fig. 7, ¶¶101-02. Hayashi teaches to order the list “based on social networking information such as which restaurants a friend, family member, close contact (first degree of separation), or the like has recommended, [...or] how busy the restaurant may typically be, how much time the mobile user has available as indicated by their calendar, or the like.” *Id.*, ¶101. Hayashi further discloses the list “might also provide a review from a friend, family member, or the like,” and may enable providing comments to be shared among the social network of the user. *Id.*, ¶¶101-102.

Pet. 60; *see also id.* at 73 (incorporating arguments from claim 4 into the discussion of claim 16). Thus, contrary to Patent Owner’s argument, Petitioner does not “ignore[] the claim’s express requirement to factor in both physical distance from the location and a factor dependent on the user ratings.” *See* PO Resp. 54. We find Petitioner’s arguments and evidence to be persuasive and as such, we agree with Petitioner’s argument that this element is taught by Ramer and Hayashi.

In sum, for each element of claims 16, 18 and 19, Petitioner has cited disclosures in Ramer and Hayashi that, taken together, teach each requirement of the claims, as confirmed by the testimony of Petitioner’s expert Dr. Khosh, who persuasively articulates why one of ordinary skill in the art would have been taught the claimed subject matter. We have taken into account the proper construction of the claim and the level of skill in the art, and we have considered the totality of the evidence as a whole including the objective evidence of nonobviousness submitted by Patent Owner. We therefore determine that Petitioner has proved by a preponderance of the evidence that claims 16, 18, and 19 of the ’981 patent would have been obvious over Ramer and Hayashi.

IV. CONSTITUTIONAL CHALLENGE

Patent Owner argues the Board should terminate or stay this proceeding because Administrative Patent Judges (“APJs”) are unconstitutionally appointed. PO Resp. 62 (citing *Lucia v. SEC*, 138 S. Ct. 2044, 2049 (2018); *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320 (Fed. Cir. 2019) cert. granted sub nom. *United States v. Arthrex, Inc.*, 2020 WL 6037206 (Oct. 13, 2020)). Patent Owner argues that although the Federal Circuit attempted to cure this constitutional defect in *Arthrex* by severing Title 5’s removal protections, the solution is insufficient because IPR proceedings are formal adjudications under the APA. PO Resp. 57 (citing *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1080 (Fed. Cir. 2015)). Under 5 U.S.C. § 556(b), Patent Owner argues, formal adjudications must be conducted by administrative law judges appointed under 5 U.S.C. § 3105 and such judges may be removed only for good cause. PO Resp. 57 (citing 5 U.S.C. § 7521). Because APJs are now removable, Patent Owner argues they lack the authority to preside over formal adjudications such as the present proceeding, and thus, Patent Owner requests the Board to dismiss or stay this proceeding pending review of the *Arthrex* decision. *Id.* at 64. Such a stay would not result in undue prejudice according to Patent Owner. *Id.*

We decline to consider Patent Owner’s constitutional challenge. The Federal Circuit has addressed this issue in *Arthrex*, 941 F.3d at 1325, 1337–38 (“This as-applied severance . . . cures the constitutional violation.”); *see also Arthrex, Inc. v. Smith & Nephew, Inc.*, 953 F.3d 760, 764 (Fed. Cir. 2020) (Moore, J., concurring in denial of rehearing) (“Because the APJs were constitutionally appointed as of the implementation of the severance,

inter partes review decisions going forward were no longer rendered by unconstitutional panels.”).

V. MOTION TO EXCLUDE

Petitioner has filed a Motion To Exclude, Patent Owner has filed an Opposition to the Motion To Exclude, and Petitioner has filed a Reply to the Opposition to the Motion To Exclude. Papers 28, 31, 32. Petitioner seeks to exclude Exhibits 2001–2005, which relate to Patent Owner’s arguments on objective evidence of nonobviousness, and Exhibits 2007–2015, which relate to Patent Owner’s effort to establish a date of invention prior to the effective filing date of the ’981 patent. Petitioner also seeks to exclude any portion of the record relying on those exhibits.

Even without excluding Exhibits 2001–2005 and 2007–2015, and without excluding any portion of the record relying on those exhibits, Petitioner has proved unpatentability of all challenged claims. Therefore, The Motion to Exclude is dismissed as moot.

VI. CONCLUSION¹⁷

In summary:

Claims	35 U.S.C. §	References	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–6, 8–10, 12–18	103(a)	Evermann	1–6, 8–10, 12–18	
1–18	103(a)	Evermann, Yoo	1–18	
1–19	103(a)	Ramer, Hayashi	16, 18, 19 ¹⁸	
Overall Outcome			1–19	

VII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner has demonstrated by a preponderance of the evidence that claims 1–19 of the '981 patent are unpatentable;

ORDERED that Petitioner's Motion To Exclude is dismissed as moot, and

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. 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).

¹⁸ As stated above, because we have determined that claims 1–18 are unpatentable as obvious based on Ground 1 and 2, for Ground 3 we only address claim 19 (and claims 16 and 18 from which claim 19 depends), and do not address Petitioner's challenges to claims 1–15 and 17 based on Ramer and Hayashi.

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

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