

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

GEOSCOPE TECHNOLOGIES PTE. LTD.,
Patent Owner.

IPR2023-01211
Patent 8,786,494 B2

Before PATRICK R. SCANLON, SHEILA F. MCSHANE, and
BRIAN D. RANGE, *Administrative Patent Judges*.

RANGE, *Administrative Patent Judge*.

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

I. INTRODUCTION

Google LLC (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1, 4, 25, 26, and 35 of U.S. Patent No. 8,786,494 B2 (Ex. 1001, “the ’494 patent”). Paper 2 (“Pet.”). Geoscope Technologies Pte. Ltd. (“Patent Owner”) filed a Preliminary Response. Paper 10 (“Prelim. Resp.”). With our authorization, Petitioner filed a Reply (Paper 12, “Pet. Prelim. Reply”), and Patent Owner filed a Sur-Reply (Paper 13, “PO Prelim. Sur-Reply”).

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the petition “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” The following findings of fact and conclusions of law are not final, but are made for the sole purpose of determining whether Petitioner meets the threshold for initiating review. Any final decision shall be based on the full trial record, including any response timely filed by Patent Owner. Any arguments not raised by Patent Owner in a timely-filed response may be deemed waived.

For the reasons stated below, we determine that Petitioner has established a reasonable likelihood that it would prevail with respect to at least one claim. We hereby institute an *inter partes* review as to claims 1, 4, 25, 26, and 35 of the ’494 patent based upon Petitioner’s asserted grounds of unpatentability.

II. BACKGROUND

A. *Real Parties in Interest*

Petitioner identifies itself as the real party in interest. Pet. 2. Patent Owner identifies itself as the real party in interest. Paper 11, 1.

B. Related Matters

The parties identify the following matters as related to this proceeding:

Geoscope Technologies Pte. Ltd. v. Google LLC f/k/a Google Inc., No. 1:22-cv-01331-MSN (E.D. Va.) (filed Nov. 22, 2022)

(“the Google Action”);

Geoscope Technologies Pte. Ltd. v. Apple Inc., No. 1:22-cv-01373-MSN (E.D. Va.) (filed Dec. 1, 2022) (“the Apple Action”); and

Google LLC v. Geoscope Technologies Pte. Ltd., IPR2023-01209 and IPR2023-01210 (PTAB) (filed Aug. 10, 2023).

Pet. 2, 3; Paper 11 at 1.

Petitioner additionally identifies the following applications as related to this proceeding:

U.S. Patent Application No. 13/771,542 (filed Feb. 20, 2013, now the ’494 patent), which is a continuation of U.S. Patent Application No. 12/424,320 (filed Apr. 15, 2009, now U.S. Patent No. 8,400,358), which is a continuation of U.S. Patent Application No. 12/026,333 (filed Feb. 5, 2008, now U.S. Patent No. 7,561,104), which claims priority to U.S.

Provisional Application No. 60/899,379 (filed Feb. 5, 2007); and

Reexamination Control No. 90/012,694 (filed Sept. 24, 2012) (*ex parte* reexamination of U.S. Patent No. 7,561,104; Reexamination Certificate issued Aug. 18, 2014).

Pet. 2–3.

Patent Owner additionally identifies the following matters as related to this proceeding:

Google LLC. v. Geoscope Technologies Pte. Ltd., IPR2023-01212 and IPR2023-01213 (PTAB) (filed Aug. 9, 2023);
Geoscope Technologies Pte. Ltd. v. Google LLC, No. 24-1003 (Fed. Cir.) (docketed Oct. 2, 2023);
Geoscope Technologies Pte. Ltd. v. Apple, Inc., No. 24-1018 (Fed. Cir.) (docketed Oct. 5, 2023); and
Apple Inc. v. Geoscope Technologies Pte. Ltd., IPR2024-00031 and IPR2024-00032 (filed Oct. 31, 2023); and
Apple Inc. v. Geoscope Technologies Pte. Ltd., IPR2024-000255 (PTAB) (filed December 1, 2023); and
Apple Inc. v. Geoscope Technologies Pte. Ltd., IPR2024-000259 (PTAB) (filed December 6, 2023).

Paper 11 at 1–2.

C. The '494 patent

The '494 patent, titled “Method to Modify Calibration Data Used to Locate a Mobile Unit,” issued July 22, 2014, with claims 1–35. Ex. 1001, codes (45), (54), 12:10–15:6. The '494 patent explains that “[w]hen a wireless device is located indoors, the signal strengths of signals received from the serving and/or neighboring base stations tend to be lower than the strength of the signals received by a wireless device located outdoors,” which may result in “poor estimated location accuracy.” *Id.* at 1:40–47. The '494 patent aims to address this issue with its method of locating a mobile station in an indoor facility, in which calibration data samples obtained

outdoors are used to simulate indoor calibration data. *Id.* at 3:47–58; *see also id.* at 1:48–61.

In one embodiment of the '494 patent, the method includes “providing a database of previously-gathered calibration data for a region in a wireless network,” “collecting observed network measurement data from a plurality of transmitters which includes a signal characteristic from each one of said plural transmitters,” “determining an average value for the signal characteristics,” “modifying the observed network measurement data using the average value,” and “compar[ing] the modified network measurement data with the database of calibration data to determine the location of the mobile station.” Ex. 1001, 2:31–43; *see also id.* at 11:32–44, Fig. 9. The '494 patent also describes that “a non-uniform grid point (NUG) may represent the signal characteristics and/or calibration data over a given region.” *Id.* at 3:59–61. In one example, “a set of NUGs . . . are . . . part of a larger geographical region . . . includ[ing] various wireless networking components,” where “[t]he NUGs represent an area of collected calibration data, which may be stored in a database for easy retrieval during a calibration data comparison operation between the NUG and a received network measurement report (NMR).” *Id.* at 3:61–4:2.

D. Illustrative Claims

Claims 1 and 25 are illustrative claims. The other challenged claims (claims 4, 26, and 35) depend from either claim 1 or claim 25. *See* Ex. 1001, 12:10–22, 12:31–33, 14:7–26, 15:4–6.

Claims 1 and 25 (with identifiers of claim elements, *see, e.g.*, Pet. 16–27, 42–47) are reproduced below. Claims 4, 26, and 35 are also reproduced below.

[1.pre] A method for determining a location of a mobile station, comprising:

[1.1] providing a database of previously-gathered calibration data for a predetermined region in a wireless network;

[1.2] collecting observed network measurement data, the observed network measurement data collected by the mobile station and transmitted to the network or collected by the network;

[1.3] modifying said observed network measurement data; and

[1.4] comparing said modified network measurement data with said database of calibration data to thereby determine the location of the mobile station.

[4] The method of claim 1 wherein said database comprises previously-gathered calibration data for one or more non-uniform grid points within said region.

[25.pre] A method for determining a location of a mobile station, comprising:

[25.1] providing a database of previously-gathered calibration data for a predetermined region in a wireless network;

[25.2] collecting observed network measurement data from each of a plurality of transmitters including a signal characteristic from each one of said plural transmitters, the observed network measurement data collected by the mobile station and transmitted to the network or collected by the network;

[25.3] determining an average value for select ones of said signal characteristics;

[25.4] modifying said observed network measurement data using said average value; and

[25.5] comparing said modified network measurement data with said database of calibration data to thereby determine the location of the mobile station.

[26] The method of claim 25 wherein said database comprises previously-gathered calibration data for one or more non-uniform grid points within said region.

[35] The method of claim 25 wherein at least one of said plurality of transmitters is not a member of said wireless network.

Ex. 1001, 12:10–22, 12:31–33, 14:7–26, 15:4–6.

E. Asserted Grounds of Unpatentability

Petitioner, supported by the declaration of David H. Williams (Ex. 1012), asserts the following grounds of unpatentability (Pet. 6–7):¹

Claims Challenged	35 U.S.C. §	References/Basis
1, 4	102(e)	Shkedi ²
4	103(a)	Shkedi, Spain ³
1, 4, 25, 26, 35	102(b)	Zhu ⁴
4, 26	103(a)	Zhu, Spain
35	103(a)	Zhu, Laitinen ⁵
25, 26, 35	103(a)	Shkedi, Zhu, Spain

¹ The relevant sections of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, took effect on March 16, 2013. The ’494 patent was filed before this date. *See* Ex. 1001, code (22). For the purposes of this Decision, pre-AIA statutes apply.

² US 7,706,811 B2, issued Apr. 27, 2010, Ex. 1006 (“Shkedi”).

³ US 2003/0064735 A1, published Apr. 3, 2003, Ex. 1009 (“Spain”).

⁴ Jian Zhu & G. D. Durgin, *Indoor/outdoor location of cellular handsets based on received signal strength*, in 2005 IEEE VEHICULAR TECH. CONF. PROC. VOL. 1, 92–96 (2005), Ex. 1010 (“Zhu”).

⁵ Heikki Laitinen et al., *Database Correlation Method for GSM Location*, in 2001 IEEE VEHICULAR TECH. CONF. PROC. VOL. 4, 2504–2508 (2001), Ex. 1011 (“Laitinen”).

III. ANALYSIS

A. *Legal Standard*

A claim may be invalid as anticipated by a prior art reference if “each and every limitation is found either expressly or inherently in a single prior art reference.” *Sanofi–Synthelabo v. Apotex, Inc.*, 470 F.3d 1368, 1375 (Fed. Cir. 2006) (internal quotation marks omitted). Anticipation under § 102 may be established by showing, as a matter of fact, that all elements arranged as specified in a claim are disclosed within the four corners of a reference, either expressly or inherently, in a manner enabling one skilled in the art to practice an embodiment of the claimed invention without undue experimentation. *See ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1344 (Fed. Cir. 2012).

A patent 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). 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 ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. *Level of Ordinary Skill in the Art*

In order to determine whether an invention would have been obvious at the time the application was filed, we consider the level of ordinary skill

in the pertinent art at the critical time. *Graham*, 383 U.S. at 17. The resolution of this question is important because it allows us to “maintain[] objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quotation omitted). Generally, it is easier to establish obviousness under a higher level of ordinary skill in the art. *Innovation Toys, LLC v. MGA Entm’t, Inc.*, 637 F.3d 1314, 1323 (Fed. Cir. 2011) (“A less sophisticated level of skill generally favors a determination of nonobviousness . . . while a higher level of skill favors the reverse.”).

Petitioner contends that a person of ordinary skill in the art (POSITA) would have been someone knowledgeable in wireless networks, cellular radio systems, mobile communication devices and radio navigation systems, having at least a bachelor’s degree in electrical engineering, with a background in radio frequency communications and/or navigation system technology as well as approximately two years of industry experience working on radio communication and/or navigation systems.

Pet. 13 (citing Ex. 1012 ¶ 30). Patent Owner does not dispute the level of ordinary skill in the art. Prelim Resp. 30–31.

For purposes of this Decision, we adopt Petitioner’s proposal as reasonable and consistent with the ’494 patent specification and the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art may reflect an appropriate level of skill in the art).

C. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the district-court-type standard, as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under that standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *See id.* at 1317–19.

Petitioner proposes the following claim constructions:

CLAIM TERM	PETITIONER’S PROPOSED CONSTRUCTION
calibration data	“modified or unmodified network measurement data associated with a geographic location”
observed network measurement data	“measurement data from a network measurement report (i.e., a report used in cellular networks which provides the results of a measurement from a mobile device on one or more cells)”
grid point	“a point associated with representative calibration data for an area”
as said mobile station	“a[t] said mobile station”
order of “collecting,” “modifying,” and “comparing” steps	“collecting has to occur before modifying, and modifying has to occur before comparing”

Pet. 14–16 (citing Ex. 1001, 1:28–31, 1:46–47, 3:55–56, 13:41–42; Ex. 1012 ¶¶ 35–44; Ex. 1016 ¶¶ 108–109; Ex. 1024, 1; Ex. 1028, 8, 10, 20). Petitioner argues that any other claim term should be interpreted consistent with the *Phillips* standard. *Id.* at 14.

The first four of Petitioner’s proposed constructions are consistent with the claim constructions issued by the district court in the Google Action (*see* Ex. 1028, 8, 10, 20) or a position taken by Patent Owner in the Google Action (*see* Ex. 1016 ¶¶ 108–109). Petitioner cites Exhibit 1024 as supporting its contention that the parties have stipulated as to the order of the “collecting,” “modifying,” and “comparing” steps in claim 1, but this Exhibit does not appear to support the stipulation. *See* Ex. 1024.

Patent Owner “does not dispute Petitioner’s statement on claim construction for the purposes of [the] Preliminary Response” and “reserves the right to present arguments on the constructions should the Petition be instituted.”⁶ Prelim. Resp. 31.

For purposes of this Decision, we adopt the undisputed claim constructions that Petitioner proposes. These constructions are consistent with the claim language and the specification of the ’104 patent and are further supported by the reasoning provided by the district court’s claim construction order. *See* Ex. 1028. We do not discern a need to construe explicitly any other claim language at this juncture because doing so would have no effect on our analyses below of Petitioner’s asserted grounds and will not assist in resolving the present controversy between the parties. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The

⁶ In other sections of the Preliminary Response, Patent Owner appears to argue in favor of a modified construction of “grid point.” Prelim. Resp. 17–25; *see also id.* at 32 (“As further explained above in Section III, the district court concluded that ‘grid point,’ as used in the ’104 Patent, specifically refers to ‘a point associated with representative calibration data for an area’ that is ***generated based on analysis of calibration data***.”) (Patent Owner’s emphasis). We disagree with these arguments for the reasons discussed below.

Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

D. Discretion under 35 U.S.C. § 314(a)

Petitioner argues that we should not exercise discretion to deny the Petition under 35 U.S.C. § 314(a). Pet. 59–62. Patent Owner argues that we *should* exercise discretion under 35 U.S.C. § 314(a) and not institute trial, given the state of the parallel district court litigation. Prelim. Resp. 2–17. With our permission, we permitted the parties provided Petitioner’s Reply (Paper 12) (“Pet. Prelim. Reply”) and Patent Owner’s Sur-Reply (Paper 13) (“PO Prelim. Sur-Reply”) further addressing this issue. For the reasons explained below, we do not exercise our discretion to deny institution in view of the parallel proceeding.

Institution of an *inter partes* review is discretionary. *See* 35 U.S.C. § 314(a) (authorizing institution of an *inter partes* review under particular circumstances, but not requiring institution under any circumstances); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) (“[Section] 314(a) invests the Director with discretion on the question whether to institute review” (emphasis omitted)); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d at 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”).

Under Board precedent, one of the considerations that may weigh in favor of denying a petition under § 314(a) is the advanced state of a parallel district court action. *See NHK Spring Co. v. Intri-Plex Techs., Inc.*,

IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential); Patent Trial and Appeal Board, Consolidated Trial Practice Guide (“CTPG”) 58, 58 n.2 (Nov. 2019).⁷ In *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential), the Board explained that “cases addressing earlier trial dates as a basis for denial under *NHK* have sought to balance considerations such as system efficiency, fairness, and patent quality.” *Fintiv*, Paper 11 at 5. *Fintiv* sets forth six non-exclusive factors for determining “whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.* at 6. The Director has also issued interim guidance to the Board on applying these factors. See Katherine K. Vidal, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022) 9, *available at* https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf (“Director Memo”).

When determining whether to exercise discretion to deny institution in view of a parallel proceeding with an earlier trial date, the following factors may be relevant:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;

⁷ *Available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

4. overlap between issues raised in the petition and in the parallel proceeding;

5. whether the petitioner and the defendant in the parallel proceeding are the same party; and

6. other circumstances that impact the Board's exercise of discretion, including the merits.

Fintiv, Paper 11 at 5–6. “These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.* Below, we summarize the relevant procedural history and then address each factor below.

1. Procedural History

The Petition, filed August 10, 2023, challenges claims 1, 4, 25, 26, and 35 of the '494 Patent based on 35 U.S.C. §§ 102 and 103. Pet. 6.

On November 22, 2022, Patent Owner filed a complaint against Petitioner alleging infringement of the '494 Patent. Ex. 1016 (district court complains). The claims at issue in that action were eventually narrowed so that the District Court was addressing only claims 1, 4, 25, 26, and 35 of the '494 Patent. Ex. 2004, 2.

In a September 18, 2023, opinion, the United States District Court for the District of Virginia held that the asserted claims of the '494 Patent (and other claims at issue in the "'104 Patent Family") were patent ineligible under 35 U.S.C. § 101. Ex. 2004, 18. On September 18, 2023, the Court entered a judgment pursuant to Federal Rule of Civil Procedure Rule 12(c) that stemmed from its holding. Ex. 2005. Patent Owner appealed the District Court's ruling to the Court of Appeals of the Federal Circuit but only as to

claims 4 and 26. Prelim. Resp. 14–15.⁸

2. *Factor 1: whether the court granted a stay or evidence exists that one may be granted if this proceeding is instituted*

Petitioner argues that it will seek a pre-institution stay in the related litigation, so “[a]t worst, this factor is neutral because the Board has declined to predict whether the district court will stay the related litigation.” Pet. 59.

In its Preliminary Response, Patent Owner argues that “this factor weighs in favor of exercising discretion to deny institution” because “the district court proceedings are closed pending the § 101 appeal to the Federal Circuit,” so “the district court **cannot** stay the litigation given the posture.” Prelim. Resp. 7–8 (citing *Snap Inc. v. Blackberry Ltd.*, IPR2020-00391, Paper 8 at 13 (PTAB July 13, 2020); *AviaGames, Inc. v. Skillz Platform, Inc.*, IPR2022-00530, Paper 12 at 12 (PTAB Aug. 9, 2022)).

Petitioner argues that the “fact that the District Court has determined that certain claims challenged in this IPR are invalid under § 101 does not automatically trigger discretionary denial or necessitate a finding that the *Fintiv* factors weigh in favor of discretionary denial.” Pet. Prelim. Reply 1 (citing *Volvo Penta of the Americas, LLC v. Brunswick Corp.*, IPR2022-01366, Paper 15⁹ (PTAB May 2, 2023)). Petitioner asserts that the district court only made determinations on § 101 issues, now on appeal, so “there is no overlap of issues between the Federal Circuit appeal and the grounds

⁸ We invite the parties to address at trial whether or not claims 1, 25, and 35 (adjudicated unpatentable under § 101 with no appeal pending) have any remaining legal importance and whether or not it is appropriate for the Board to reach a final written decision as to claims 1, 25, and 35.

⁹ Petitioner refers to Paper 16, however, the correct reference appears to be Paper 15.

presented in this IPR.” *Id.* at 3. Petitioner contends that Patent Owner “can only speculate as to the outcome of the Federal Circuit appeal and the timing and scope of any remand.” *Id.*

As an initial matter, we do not agree with Patent Owner’s arguments that because judgments have been entered in the district court actions, there is finality as that relates to *Fintiv* issues. In a similar instance in *Volvo*, where a district court’s § 101 determination was appealed to the Federal Circuit, the Director determined that the Board had the authority to institute an *inter partes* review and a *Fintiv* analysis should be performed. *See Volvo*, Paper 15 at 1–8. The Director has additionally distinguished a *Fintiv* analysis under similar circumstances to those here, where “the district court’s judgment of invalidity under 35 U.S.C. § 101, i.e., a statutory ground that could not have been raised before the Board, does not raise concerns of inefficient duplication of efforts or potentially inconsistent results between the Board and the district court.” *AviaGames, Inc.*, Paper 14 at 3. Further, the Director determined that, “the challenged claims have not yet been cancelled and remain in force until the opportunity to appeal has been exhausted,” noting that “[b]y the time an appeal will have concluded, Petitioner will be barred under 35 U.S.C. § 315(b) from bringing a new challenge in an IPR petition.” *Id.* at 3–4.

Fintiv states that “a district court stay of the litigation pending resolution of the PTAB trial allays concerns about inefficiency and duplication of efforts.” *Fintiv* at 6. In view of the circumstances, we do not discern that the § 101 issues addressed in the Federal Circuit appeal would duplicate the anticipation and obviousness issues addressed here. We also agree with Petitioner that the timing of the progress of the appeal and any

potential remand to the district court is uncertain. Accordingly, given the limited § 101 issues on appeal, we do not discern there are any concerns about duplication of efforts. Moreover, because of the uncertainty of the timing of any remand to the district court to address any anticipation or obviousness issues, the present circumstances with a pending appeal effectively act as a stay on the assessment of invalidity issues.¹⁰

Thus, we determine that this factor weighs against the exercise of discretionary denial.

3. *Factor 2: proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision*

Petitioner states that “this factor favors institution or at worst is neutral” because “trial has not yet been scheduled,” and the “median time-to-trial is around the same time or after the projected statutory deadline for the PTAB’s final written decision.” Pet. 59–60 (quoting Director Memo 8–9).

Patent Owner argues that “the Board should find that this factor weighs in favor of denial of institution” because “[t]he district court completed its consideration of the ’494 Patent and reached its final decision in September 2023, months before the Board would even institute review, much less issue a final written decision.” Prelim. Resp. 8. Patent Owner

¹⁰ Patent Owner argues that the panel decisions in *Snap* and *AviaGames* found that factor 1, as well as factors 2–6, favor the exercise of discretionary denial. Prelim. Resp. 7–17 (citing *Snap*, Paper 8; *AviaGames*, Paper 12); see also PO Prelim. Sur-reply 2. Other panels decisions are not binding, but more importantly, the earlier cases did not have the benefit of the guidance provided by the Director’s decisions in *Volvo* and *AviaGames*. *Volvo*, Paper 15; *AviaGames*, Paper 14 (remanded to the panel only on the issue of whether the challenge’s merits were compelling).

points out that, “[i]n *AviaGames*, under the same circumstances, the Board found that that this factor ‘weighs heavily in favor of denying institution’ because ‘the District Court has completed its consideration of the [challenged patent].’” *Id.* (quoting *AviaGames*, Paper 12 at 12–13; *see also id.* at 8–9 (citing *Snap*, Paper 8 at 13)) (emphasis removed). Petitioner contends that “[b]ecause there is no District Court trial date, any attention to invalidity under §§ 102/103 is more likely to be resolved in a Final Written Decision well before the District Court addresses any validity and/or infringement issues on remand.” Pet. Prelim. Reply 3.

At this time, there is no district court trial date scheduled. Further, the date of any potential trial is uncertain if there is a remand after appeal, but it is likely that any potential trial would occur after the completion of this proceeding. Accordingly, we determine that this factor weighs against the exercise of discretionary denial.

4. *Factor 3: investment in the parallel proceeding by the court and the parties*

If, at the time of the institution decision, the district court has issued substantive orders related to the challenged patent, such as a claim construction order, this fact weighs in favor of denial. *See Fintiv*, Paper 11 at 9–10. On the other hand, if the district court has not issued such orders, this fact weighs against discretionary denial. *Id.* at 10.

Petitioner acknowledges that “[d]iscovery in the Related Litigation is ongoing,” and that “[a] Markman order issued on July 19, 2023.” Pet. 60. But, according to Petitioner, this “only marginally, if at all, weighs in favor of denial.” *Id.* (citing, *e.g.*, *Fintiv*, Paper 15 at 14–15). Petitioner adds that its “diligence in filing its Petition outweighs any investment,” as it “filed its

Petition less than three months after being made aware of the full set of asserted claims.” *Id.* at 61 (citing *Fintiv*, Paper 15 at 11; *Dish Network LLC v. Broadband iTV, Inc.*, IPR2020-01332, Paper 14 at 29 (PTAB Jan. 27, 2021)).

Patent Owner contends that this factor weighs heavily in favor of denying institution because “there has been substantial investment by the parties and the district court in the Google Action (and the Apple Action).” Prelim. Resp. 9–12. First, Patent Owner argues that “[t]he Google Action is concluded as a result of the district court’s § 101 ruling—*i.e.*, a substantive order related to the ’104 Patent,” and “[b]ased on the same facts, the Board in *AviaGames* and *Snap* found this factor to weigh in favor of denial of institution.” *Id.* at 9 (citing Ex. 2003; *AviaGames*, Paper 12 at 13); *see also id.* (citing *Snap*, Paper 8 at 13). Second, Patent Owner argues that, “[e]ven before the district court issued its § 101 ruling, the parties and district court had already made a substantial investment in the litigation,” including the issuance of a *Markman* Order, as well as “fact and expert discovery . . . completed prior to the district court’s § 101 ruling and nearly completed even before the Petition was filed on August 9, 2023,” the “completed discovery includ[ing] extensive written discovery, numerous depositions of fact and expert witnesses, and expert reports (including those addressing the validity of the ’104 Patent under 35 U.S.C. §§ 102 and 103).” *Id.* at 9–10. Third, Patent Owner argues that “[c]ontrary to Petitioner’s assertions of diligence . . . , Petitioner waited until after the parties and the court invested significant resources in the case to file the Petition.” *Id.* at 10 (citing Pet. 6, 61; Exs. 2008, 2017). Patent Owner adds that the Petition challenges every asserted claim identified in Patent Owner’s preliminary identification of

asserted claims served on March 27, 2023, so the change in the assertion of claims had no bearing on the Petition. *Id.* And fourth, Patent Owner argues that prior to the Petition, “the district court and Patent Owner also made a substantial investment in the Apple Action, another litigation involving the ’104 Patent,” which included “[t]he same substantive orders—a *Markman* order and § 101 ruling,” as well as “fact and expert discovery . . . completed . . . prior to the district court’s § 101 ruling in September 2023.” *Id.* at 11 (citing Exs. 2004, 2009, 2010).

The district court has issued substantive orders, and the parties in the district court proceedings have invested significant resources prior to the § 101 ruling, including the completion of claim construction and fact and expert discovery. Putting the later changes to the asserted claims aside, Petitioner filed the Petition in early August, less than less than six months after the earliest notice of the asserted claims, which was in in late March, 2023. We find that this timeliness demonstrates Petitioner’s diligence. Weighing these issues, that is, the investment in resources and the diligence in Petitioner filing the Petition, we determine that this factor slightly favors discretionary denial.

5. *Factor 4: overlap between issues raised in the petition and in the parallel proceeding*

Petitioner states that it “has not filed a stipulation in Related Litigation” but “reserves the right to file such a stipulation based on the contents of Owner’s Preliminary Response.” Pet. 61. Patent Owner argues this factor weighs in favor of denying institution because, under similar facts “[i]n *AviaGames*, the Board determined that the fact that ‘the challenged patent ha[d] already been found to be invalid by another tribunal’ weighed in

favor of exercising discretion to deny institution.” Prelim. Resp. 12 (quoting *AviaGames*, Paper 12 at 14). Patent Owner adds that “there is significant overlap between Petitioner’s invalidity arguments in this proceeding and its invalidity arguments in the district court” because “two of the prior art references relied on by Petitioner for this proceeding—Shkedi and Laitinen—are also relied on by Petitioner in the Google Action,” and “the record pertaining to these invalidity arguments has already been developed in the district court, including through hundreds of pages of expert reports.” *Id.* at 12–13 (citing Ex. 1006, 1; Ex. 2011, 20–21, 23; Pet. 58). According to Patent Owner, “[i]t is an inefficient use of the Board’s resources to adjudicate the validity of the ’104 Patent where the district court has already done it. . . . [a]nd . . . to develop a record that has already been developed in the Google Action.” *Id.* at 14.

Petitioner asserts that the district court only made determinations on § 101 issues, now on appeal, so “there is no overlap of issues between the Federal Circuit appeal and the grounds presented in this IPR,” “[t]he District Court made no determination regarding invalidity under §§ 102/103,” “there is no §§102/103 ground at issue on appeal,” and no “trial [was] even held in the Related Litigation addressing §§102/103 issues.” Pet. Prelim. Reply 2–3 (citing Ex. 2003, Ex. 2012).

In *Snap*, the Director determined that a district court’s final judgment based on § 101 does not necessarily create overlap between the issues raised in a petition and a parallel district court proceeding. *Snap*, Paper 8 at 14. In view of this determination, we determine that this factor weighs against the exercise of discretionary denial.

6. *Factor 5: whether the petitioner and the defendant in the parallel proceeding are the same party*

Petitioner here is the same as the named party in the Google Action. Accordingly, this factor weighs in favor of exercising our discretion to deny institution.

7. *Factor 6: other circumstances that impact the Board's exercise of discretion, including the merits*

Patent Owner argues that the asserted grounds are not strong and should be denied on the merits. Prelim. Resp. 14–17. Patent Owner further asserts that because the challenged patent has been found invalid in the district court, this weighs in favor of denying institution. *Id.* at 15. Petitioner, on the other hand, argues that the merits of its arguments are strong. Pet. 62.

As discussed above, because there is no overlap of issues between this proceeding and the district court's judgment, we do not find the court's invalidity finding to be relevant to the issue of discretionary denial. Moreover, as discussed below, we determine that the merits of the Petition meet the standard for institution.

Accordingly, we determine that this factor is neutral.

8. *Conclusion*

We have considered the circumstances and facts before us in view of the *Fintiv* factors. Because our analysis is fact-driven, no single factor is determinative of whether we exercise our discretion to deny institution under § 314(a). We take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review” when evaluating these factors. *Fintiv*, Paper 11, 6. Evaluating all of the factors on this record, we determine that weight of factors 1, 2, and 4 outweigh the remaining

factors. Thus, based on our assessment of the *Fintiv* factors, we decline to exercise our discretion under 35 U.S.C. § 314(a) to deny *inter partes* review.

E. Overview of the Asserted Art

1. Shkedi (Exhibit 1006)

Shkedi generally relates to a signal-comparison based method for determining the location of a mobile communications device. Ex. 1006, 1:6–8, 5:27–30. The method can operate using one or more portable RF communications devices in conjunction with two or more fixed-location, service-area antenna stations that are “substantially continuously operating.” *Id.* at 5:37–42. In one embodiment, the method comprises:

(1) registering a selected location by first-causing a portable RF communications device at the selected location to (i) receive an RF communications signal from a plurality of “local fixed-location service-area” antenna stations and (b) measure reception signal strength respectively associated with the received signal from at least two of the antenna stations;

(2) recording the selected location by electronically storing at least two of the respective reception signal strength measurements;

(3) monitoring by second-causing a portable RF communications device to (i) receive communications signals from, respectively, a plurality of “local fixed-location service-area” antenna stations, and (ii) measure reception signal strength associated with the signals; and

(4) determining if the portable RF communications device of the “monitoring” step is at the selected location of the “registering” step by electronically comparing measurements in the “monitoring” step with the stored measurements of the “recording” step.

Id. at 5:42–63. The “registering” step “is a data collection step where the portable device comes to measure the antenna signal space reception characteristics at the selected location.” *Id.* at 11:18–28.

Although the majority of Shkedi relates to direct measurements of signal strengths and direct comparisons of those measurements, Shkedi also describes other techniques, such as using the strongest signal as a unit to help normalize other simultaneous measurements. Ex. 1006, 6:12–34. Shkedi additionally describes an example in which a cell phone determines whether it has returned to a desired location or to an area that is “close enough” to the desired location, using (1) signal strength measurements of the four surrounding cells with the strongest signals and (2) relations calculated by dividing each of the four surrounding cells’ “less strong” signals by its strongest signal. *See id.* at 20:66–21:24.

2. *Spain (Exhibit 1009)*

Spain generally relates to a “method for determining the location estimate of a . . . mobile unit[] in a wireless communication network” using RF fingerprinting. Ex. 1009, code (54), ¶¶ 30, 35, 47. The method may “utiliz[e] a fingerprint database that contains a number of fingerprints along with their corresponding location identities.” *Id.* ¶ 47. The fingerprint database may be “built by taking fingerprint measurements at predetermined locations and using intelligent algorithms that interpolate the fingerprints at all locations in between the sampled locations.” *Id.* ¶ 101. For example, “[t]o improve the accuracy of the fingerprint database,” Spain describes using a learning/training technique in which a “[r]egression can be used to learn each mapping of position versus fingerprint,” a “complete grid of locations for the cellular service area will be used as training data,” and “a new grid is

generated for the database” by “interpolat[ing] between grid points and reconstruct[ing] the grid.” *Id.* ¶¶ 54–55. Spain also describes that, “[i]n one instance, [a] fingerprint [in the fingerprint database] corresponds not to one exact spot on the surface of the earth, but instead to a small area,” where “[t]he Lat and Long fields [associated with the fingerprint] . . . indicate a position inside the area, preferably the center point.” *Id.* ¶ 99; Fig. 10.

3. *Zhu (Ex. 1010)*

Zhu is a “paper demonstrat[ing] the feasibility of received signal strength (RSS) methods for locating wireless handset calls in a real cellular environment.” Ex. 1010, Abstract. Zhu’s method “estimates a cellular phone’s location by matching signal strengths measured at the handset with signal strengths recorded in a database of radio frequency (RF) maps.” *Id.* at 92. In Zhu, “[a] database of RF coverage maps for all nearby serving sectors was created from a combination of propagation modeling and varying levels of indoor and outdoor measurement calibration.” *Id.* Zhu describes the RF Map Database (RFMD) as collection of raster-based RF maps: a complete raster array, with each raster point in the grid corresponding to a location within the network and containing a vector of received signal strength indicator (RSSI) values for all audible base stations. *Id.* at 93. Zhu’s method sets forth several calibration levels for its RFMD, and Figure 2, reproduced below, illustrates the difference between measured, interpolated, and modeled raster regions of an RF Map. *Id.* at 93–94, 96 (Table 1).

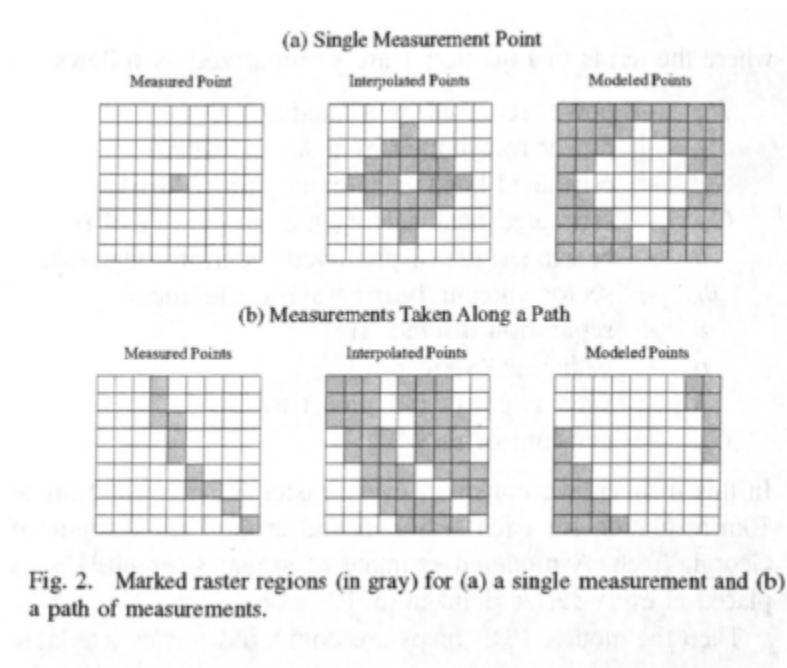


Figure 2 of Zhu depicts measured, interpolated, and modeled raster points for a single measurement and path of RSS measurements. *Id.* at 94. “Once an RFMD has been constructed for a network area, the RSSI-based location engine must compare received signal strength measurements made by the handset to the RFMD vectors,” where “[t]he best match determines the xy-coordinates of the most likely handset location RSSI.” *Id.* at 93.

In Zhu, “[a]ccurate distributions of RSS from indoor and outdoor callers can be used to calculate from where a call originates.” Ex. 1010 at 94. A calibrated RFMD and a sequence of network measurement reports (NMRs) of RSS measurements for a handset are input into a location algorithm. Ex. 1010 at 94. More specifically, “[e]ach physical xy location modeled in the . . . RFMDs contain[s] up to 26 received signal strength values . . . [,] [f]rom [which] a location algorithm selects a subset of N values that corresponds to the same control channels present in the NMR.” Zhu describes this subset of N values as corresponding to the N strongest

control channels. *Id.* at 94. The location algorithm linearly averages a sequence of 10 NMRs, and normalizes the averaged-NMR vector to generate the relative received signal strength of the handset. *Id.* at 95. In a later step, the location algorithm calculates the average RSS over the N strongest control channels, yielding the received signal strength aggregate (RSSA _{N}). *Id.* at 94, 95. Zhu explains that “the strongest 6 received signals contribute the bulk of accuracy to the overall system performance.” *Id.* at 96.

4. *Laitinen (Ex. 1011)*

Laitinen generally relates to using the database correlation method (DCM) for GSM location. Ex. 1011 at 2506–2507, Abstract, Title. Laitinen describes DCM as a generic location method in which a location server calculates the mobile station (MS) location by comparing a fingerprint transmitted by the MS with signal information samples, i.e., fingerprints, of a database. *Id.* at 2505. Laitinen then describes applying DCM to GSM, explaining that “[t]he MS . . . continuously makes signal strength measurements and also knows the cell ID of the strongest cell.” *Id.*

F. *Unpatentability Grounds*

1. *Unpatentability over Shkedi (Ground 1)*

Petitioner asserts that claims 1 and 4 are unpatentable under 35 U.S.C. § 102(e) as anticipated by Shkedi, citing the Declaration of Dr. Williams for support. Pet. 6, 16–30 (citing Ex. 1012). Patent Owner dispute’s Petitioner’s assertions as to claim 4. Prelim. Resp. 32–37. We address Petitioner’s assertions and Patent Owner’s arguments below.

a. *Claim 1*

Petitioner contends that Shkedi discloses the limitations of claim 1. Pet. 16–27. To support its arguments, Petitioner identifies certain passages in

the cited reference and explains the significance of each passage with respect to the corresponding claim limitation. *Id.* For instance, regarding the limitation “providing a database of previously-gathered calibration data for a predetermined region in a wireless network,” Petitioner argues that Shkedi discloses registering and recording at least two signal strength measurements for a selected location and these recorded signal strength measurements correspond to the claimed “a database of previously-gathered calibration data.” Pet. 17–19 (quoting Ex. 1006, 5:4–5, 5:44–50, 5:59–63, 6:35–7:5, 8:41–56, 11:26–28, 11:39–42, 13:64–14:7, 18:31–33; Ex. 1012 ¶¶ 58–66).¹¹

Patent Owner does not offer any arguments specifically addressing the limitations of claim 1. *See* Prelim. Resp. 32–37. Also, as discussed above, Patent Owner has not appealed the district court’s ruling that claim 1 is patent ineligible under 35 U.S.C. § 101. *See* Prelim. Resp. 2; Ex. 2012, 8.

Based on our review and consideration of the current record, we determine that the information presented sufficiently supports, for purposes of institution, Petitioner’s assertions that the Shkedi satisfies each limitation of claim 1. *See* Pet. 16–27. We therefore determine Petitioner has met its burden to show a reasonable likelihood it would prevail in demonstrating that claim 1 is anticipated by Shkedi.

b. *Dependent Claim 4*

Claim 4 depends from claim 1 and further recites that the database of claim 1 “comprises previously-gathered calibration data for one or more non-uniform grid points within said region.” Ex. 1001, 12:31–33. As

¹¹ Although Petitioner cites lines 44–50 in column 5 of Shkedi as disclosing “electronically storing at least two of the respective signal strength measurements,” the quoted language appears in lines 51–53 of column 5.

discussed above, we adopt the proposed construction of “grid point” as “a point associated with representative calibration data for an area” for purposes of this decision. *See supra* § III.B. Regarding the recitation of *non-uniform* grid points, Petitioner contends that U.S. Patent No. 8,406,753 (Ex. 1008, “the ’753 patent”), which claims the benefit of the same provisional application as the ’494 patent, “more fully” describes non-uniform grid points as “grid points ‘non-uniformly spaced throughout a geographic region.’” Pet. 28 (quoting Ex. 1008, 9:41–42). In addition, Petitioner notes that “[t]he ’494 Patent suggests ‘a non-uniform grid point (NUG) may represent the signal characteristics and/or calibration data over a given region.’” *Id.* (quoting Ex. 1001, 3:59–61; citing Ex. 1012 ¶ 102–105). Similarly, Patent Owner contends that “[t]he related ’753 Patent explains that ‘grid points do not necessarily have to be part of a uniform grid and usually will not be uniformly distributed throughout the geographic region,’ and that such non-uniformly distributed grid points are more specifically referred to as ‘non-uniform grid points.’” Prelim. Resp. 32–33 (quoting Ex. 1008, 2:43–50).

The ’494 patent states that “[i]n general, a non-uniform grid point (NUG) may represent the signal characteristics and/or calibration data over a given region,” and “NUGs represent an area of collected calibration data.”¹² Ex. 1001, 3:59–61. Furthermore, the district court construed “grid point” only, not “non-uniform grid point.” Ex. 1028, 18–20.

¹² The ’494 patent also indicates that a set of three NUGs is illustrated in Figure 1 (Ex. 1001, 3:61–65), but neither Figure 1 nor any other figure of the ’494 patent depicts any such NUGs.

Under these circumstances, especially where both parties suggest it, we agree that it is helpful to consider the related '753 patent in construing “non-uniform grid points.” Accordingly, for purposes of this Decision, we determine that “non-uniform grid points” are “grid points that are non-uniformly spaced throughout a geographic region” based upon the '753 patent's specification.

Petitioner argues that Shkedi discloses registering and recording non-uniform locations of a mobile telephone as signal strength measurements in a database and updating the database with measurements made during monitoring of the mobile telephone's location. Pet. 28 (citing Ex. 1006, 5:44–50, 11:51–12:5, 14:1–7; Ex. 1012 ¶¶ 107, 108–110). Petitioner also notes that Shkedi discloses “there is no limit on the number of desired locations that could be recorded.” *Id.* (quoting Ex. 1006, 18:31–33); *see also id.* at 18 (quoting same passage from Shkedi).

Next, Petitioner argues that Shkedi discloses that the mobile telephone measures and stores a plurality of service antenna signals (i.e., signal strengths) such that the mobile telephone can be located “within a predetermined proximity of the original user selected location.” *Id.* at 28–29 (citing Ex. 1006, 8:41–48). According to Petitioner, locations stored “within a predetermined proximity of the original user selected location” are points associated with representative calibration data for an area and non-uniformly spaced throughout a geographic region. *Id.* at 28–29 (citing Ex. 1012 ¶¶ 108–110).

Petitioner also argues that “Shkedi builds the database as a ‘transformational data bank’ of non-uniform grid points ‘by collecting correspondences between GPS (latitude longitude) coordinates’ and the

signal strengths for the user selected locations,” and “[a] ‘never registered location’ is found by ‘extrapolating’ to find locations failing ‘to report GPS.’” *Id.* at 29 (quoting Ex. 1006, 13:15–23). In Petitioner’s view, such extrapolated locations constitute non-uniform grid points. *Id.* (citing Ex. 1006, 17:44, 13:9-25; Ex. 1012 ¶ 111).

In addition, Petitioner argues that “Shkedi discloses obtaining non-uniform locations within buildings where ‘GPS signals’ are unavailable,” and “[s]uch locations are recorded in Shkedi’s database; these non-uniform grid points represent non-uniform locations of the buildings.” *Id.* at 30 (citing Ex. 1006, 10:37–63, 14:1–7, 17:43–45; Ex. 1012 ¶ 114–116).

Patent Owner argues that Shkedi does not teach or suggest a database comprising previously-gathered calibration data for one or more non-uniform grid points, as recited in claim 4. Prelim. Resp. 32–37. In particular, Patent Owner argues “the district court concluded that ‘grid point,’ as used in the ’404 Patent, specifically refers to ‘a point associated with representative calibration data for an area’ that is ***generated based on analysis of calibration data.***” Prelim. Resp. 32 (quoting Ex. 1028, 20; citing Ex. 1028, 19) (Patent Owner’s emphasis). Patent Owner then contends that Shkedi’s registration and monitoring steps “merely involve locations where measurements (*i.e.*, calibration data) are ***collected***, not locations that are generated based on analysis of the measurements.” *Id.* at 34 (citing Ex. 1006, 11:18–28, 11:51–65, 12:6–11) (Patent Owner’s emphasis). According to Patent Owner, the “locations where calibration data is collected are distinct from the claimed “non-uniform grid points,” which are locations generated based on an analysis of collected calibration data.” *Id.*

Although Patent Owner states that it does not dispute Petitioner’s adoption of the district court’s constructions for the purposes of the Preliminary Response (Prelim. Resp. 31), this argument relies on an altered claim construction of “grid point.” In support of its position that “grid points” must be generated based on analysis of calibration data (in addition to being “a point associated with representative calibration data for an area”), Patent Owner argues:

[T]he district court stated that the ’753 Patent’s explanation that calibration data from a number of locations is “gathered and analyzed so that particular grid points within the geographic region can be determined and associated with a particular set or sets of calibration data” demonstrates “what *must be done* to arrive at a grid point or set of grid points.”

Prelim. Resp. 20 (citing Ex. 1028, 19). Thus, according to Patent Owner, “the district court acknowledged that the claimed grid points must be generated based on the measured calibration data—they do not exist until generated by the claimed invention.” *Id.*

Patent Owner mischaracterizes the district court’s claim construction order. Instead of concluding that a “grid point” must be generated based on analysis of calibration data, the district court was explaining why it declined to adopt Patent Owner’s¹³ proposed construction. Ex. 1028, 19. That is, after noting that Patent Owner cited language from the Abstract of the ’753 patent in support of its proposed claim construction, the district court stated: “But the [cited] language is drawn . . . more toward what *must be done* to arrive at a grid point or set of grid points rather than what a grid point *is*.” *Id.* The district court was explaining why the cited language was not pertinent to the

¹³ Patent Owner is the plaintiff in the Google Action.

meaning of “grid point”; it was not indicating that grid points must be generated based on the measured calibration data.

The district court determined that the claim term “grid point” should be construed as “a point associated with representative calibration data for an area.” Ex. 1028, 20. Patent Owner’s argument attempts to introduce additional requirements that are not part of the claim construction. For these reasons, we do not find Patent Owner’s argument on this point persuasive.

Next, regarding Petitioner’s assertions based on Shkedi building a “transformational data bank,” Patent Owner argues that Petitioner does not explain why the extrapolated locations constitute non-uniform grid points. Prelim. Resp. 34–35 (citing Pet. 29). According to Patent Owner, Shkedi’s extrapolated location is just a user’s current location and not a disclosure of “non-uniform grid points.” *Id.* at 35.

This argument is not persuasive. Even if Patent Owner is correct that Shkedi’s extrapolated location corresponds to a user’s current location, Shkedi does not teach or suggest that any such locations are specifically chosen by the user or otherwise pre-defined. As such, we are persuaded that one of ordinary skill in the art would have recognized these locations to be random locations, thereby supporting Petitioner’s assertion that they represent non-uniform grid points.

Last, Patent Owner argues that Petitioner “fails to meaningfully address how Shkedi satisfies the district court’s construction of ‘grid point’ requiring it to be associated with ‘representative calibration data for an area.’” Prelim. Resp. 36. Patent Owner contends that “Petitioner provides no explanation as to how being ‘within a predetermined proximity’ purportedly discloses ‘representative calibration data.’” *Id.* at 36–37. Patent Owner

further argues that “Petitioner does not point to anything in Shkedi teaching evaluating the statistical similarity, or any other commonality, in the calibration data,” and “effectively disregards the ‘representative calibration data’ portion of the construction.” *Id.* at 37.

We disagree with Patent Owner’s arguments. As discussed above, Petitioner argues that Shkedi discloses measuring and storing a plurality of signal strengths so that a mobile telephone can be located “within a predetermined proximity of the original user selected location.” Pet.28–29 (citing Ex. 1006, 8:41–48). Petitioner then asserts that locations stored “within a predetermined proximity of the original user selected location” are points associated with representative calibration data for an area and non-uniformly spaced throughout a geographic region. *Id.* at 29 (citing Ex. 1012 ¶¶ 108–110). Based on this assertion, we understand Petitioner’s position to be that stored locations, being “within a predetermined proximity of the original user selected location,” are thus associated with the signal strengths measured at the user selected location, and these signal strengths are representative calibration data for the area. Accordingly, based on the current record, we determine that Petitioner has sufficiently demonstrated at this juncture that Shkedi discloses grid points associated with representative calibration data for an area.

Based on our review and consideration of the current record, we determine Petitioner has met its burden to show a reasonable likelihood it would prevail in demonstrating that claim 4 is anticipated by Shkedi.

2. *Unpatentability over Shkedi and Spain (Ground 2)*

Petitioner asserts claim 4 (which depends from claim 1) is unpatentable under 35 U.S.C. § 103(a) as obvious over Shkedi in view of

Spain. Pet. 6, 30–32 (citing Ex. 1012). Patent Owner provides arguments addressing this asserted ground of unpatentability. Prelim. Resp. 38–42.

Petitioner argues that, “[t]o the extent Shkedi’s disclosure is deemed not to expressly reference ‘non-uniform grid points,’” “Spain discloses enhancing the accuracy of a fingerprint database . . . by adding interpolated non-uniform grid points . . . for location determination,” and “it would have been obvious to include such points in Shkedi’s database to achieve the accuracy and reduction in computation Shkedi contemplates.” Pet. 30.

For the reasons discussed above, we determine that Shkedi discloses the non-uniform grid points of claim 4. *See supra* § IV.F.1.b. Furthermore, because Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the ’494 patent is unpatentable, we include this ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; *PGS Geophysical AS v. Iancu*, 891 F.3d at 1360 (Fed. Cir. 2018) (interpreting 35 U.S.C. § 314 to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”); 37 C.F.R. § 42.108(a).

3. *Unpatentability over Zhu (Ground 3)*

Petitioner asserts that claims 1, 4, 25, 26, and 35 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Zhu, citing the Declaration of Dr. Jokerst for support. Pet. 6, 32–49 (citing Ex. 1012) (Petitioner’s Ground 3). Patent Owner dispute’s Petitioner’s assertions as to claims 4 and 26. Prelim. Resp. 42–45.

a. *Claim 1*

Petitioner contends that Zhu discloses the limitations of claim 1. Pet. 32–49. To support its arguments, Petitioner identifies certain passages in

the cited reference and explains the significance of each passage with respect to the corresponding claim limitation. *Id.* For instance, regarding the limitation “providing a database of previously-gathered calibration data for a predetermined region in a wireless network,” Petitioner argues that “Zhu discloses providing ‘[a] database of RF coverage maps for all nearby serving sectors [that] was created from a combination of propagation modeling and varying levels of indoor and outdoor measurement calibration,’” wherein the RF map database includes a grid in which each raster point “‘corresponds to a location within the network and contains a vector of received signal strength indicator (RSSI) values in dBm for all audible base stations’ and ‘[a] complete raster array of RSSI is called an RF Map Database (RFMD).’” *Id.* at 33–35 (citing Ex. 1010, 92–93, Fig. 3; Ex. 1012 ¶¶ 136–139, 156–158) (alterations in original). Petitioner also argues that Zhu’s RF map database includes previously-gathered signal strength measurements that constitute “calibration data.” *Id.* at 33 (citing Ex. 1010, 93).

Patent Owner does not offer any arguments specifically addressing the limitations of claim 1. *See* Prelim. Resp. 43–46. Also, as discussed above, Patent Owner has not appealed the district court’s ruling that claim 1 is patent ineligible under 35 U.S.C. § 101. *See* Prelim. Resp. 2; Ex. 2012.

Based on our review and consideration of the current record, we determine that the information presented sufficiently supports, for purposes of institution, Petitioner’s assertions that the Zhu satisfies each limitation of claim 1. *See* Pet. 38–47. We therefore determine Petitioner has met its burden to show a reasonable likelihood it would prevail in demonstrating that claim 1 is anticipated by Zhu.

b. *Claim 25*

Petitioner argues that Zhu discloses each recitation of claim 25 for substantially the same reasons it discloses each recitation of claim 1. Pet. 42–47. Patent Owner does not offer any arguments specifically addressing the limitations of claim 1. *See* Prelim. Resp. 43–46. Based on our review and consideration of the current record, we determine that the information presented sufficiently supports, for purposes of institution, Petitioner’s assertions that the Zhu satisfies each limitation of claim 25. *See id.* We therefore determine Petitioner has met its burden to show a reasonable likelihood it would prevail in demonstrating that claim 25 is anticipated by Zhu.

c. *Dependent Claims 4 and 26*

Claim 4, which depends from claim 1, recites “wherein said database comprises previously-gathered calibration data for one or more non-uniform grid points within said region.” Ex. 1001, 12:31–33. Claim 26, which depends from claim 25, recites a similar limitation. *Id.* at 14:24–26. Petitioner contends that Zhu discloses these claim limitations. Pet. 40–41, 47. Patent Owner argues that Zhu fails to disclose this limitation because Zhu does not disclose “non-uniform grid points” as recited. Prelim. Resp. 42–45.

Petitioner argues that, as shown in Figure 2, Zhu’s RF map database includes measured points that “tend to cluster along paths due to the walking or driving methods of collection” and these clustered points constitute the claimed “one or more non-uniform grid points.” Pet. 40–41 (citing Ex. 1010, 93–94, Fig. 2; Ex. 1012 ¶ 168–170). Petitioner also argues that “Zhu’s database of non-uniform grid points constitutes ‘point[s] associated with representative calibration data for an area’” because “[e]ach ‘grid

spacing’ of Zhu’s RF map database is a 10-meter square area.” *Id.* at 41 (citing Ex. 1010, 93). According to Petitioner, “[a] non-uniform grid point within each 10-meter area is associated with representative calibration data (*e.g.*, measured points).” *Id.* (citing Ex. 1010, 94; Ex. 1012 ¶¶ 174–175).

Patent Owner argues that Zhu does not teach or suggest a database comprising previously-gathered calibration data for one or more non-uniform grid points, as recited in claims 4 and 26. Prelim. Resp. 42–45. Specifically, Patent Owner argues that Zhu’s clustered measured points “are locations where calibration data is *collected*,” and “are distinct from the claimed “non-uniform grid points,” which are locations generated *based on an analysis of collected calibration data*.” *Id.* at 43 (Patent Owner’s emphasis). This argument is not persuasive because it relies on Patent Owner’s attempt to introduce into the construction of “grid point” the additional requirement that that “grid points” must be generated based on analysis of calibration data. For the reasons discussed above, we disagree that “grid points” must be generated based on analysis of calibration data. *See supra* § IV.F.1.b. Based on the record before us, we are persuaded by Petitioner’s contention that Zhu’s clustered measured points constitute the claimed “one or more non-uniform grid points.”

Patent Owner also disputes Petitioner’s alternative arguments based on Zhu’s disclosure of “interpolated” or “modeled” measured points. Prelim. Resp. 43–44 (citing Pet. 40–41; Ex. 1010, 93–94). In view of our determination that Petitioner’s first argument is persuasive, however, we decline to address the alternative arguments at this juncture of the proceeding.

Last, Patent Owner argues that Petitioner “fails to meaningfully address how Zhu satisfies the district court’s construction of ‘grid point’ requiring it to be associated with ‘representative calibration data for an area.’” Prelim. Resp. 45. Patent Owner contends that “Petitioner provides no explanation as to how a point being within a 10-meter area purportedly discloses ‘a point associated with representative calibration data.’” *Id.*

We do not find this argument persuasive. Each of Zhu’s grid points is associated with calibration data (i.e., measured signal strength). Ex. 1010, 93. The Petition points to Zhu’s disclosure that “[e]ach ‘grid spacing’ of Zhu’s RF map database is a 10-meter square area” as showing that a grid point with the 10-meter square area is associated with calibration data representative of the area. Pet. 41 (citing Ex. 1010, 93–94). At this juncture, we determine that Petitioner has sufficiently demonstrated that Zhu discloses grid points associated with representative calibration data for an area.

Based on our review and consideration of the current record, we determine Petitioner has met its burden to show a reasonable likelihood it would prevail in demonstrating that claims 4 and 26 are anticipated by Zhu.

d. *Dependent Claim 35*

Petitioner accounts for the limitation recited in claim 35 (which depends from claim 25). Pet. 47–49. Petitioner shows sufficiently for purposes of this Decision that each element of claim 35 is disclosed by Zhu. Thus, we determine that Petitioner has sufficiently established a reasonable likelihood of establishing claim 35 is anticipated by Zhu.

4. *Unpatentability over and Zhu and Spain (Ground 4)*

Petitioner asserts claim 4 (which depends from claim 1) and claim 26 (which depends from claim 25) are unpatentable under 35 U.S.C. § 103(a) as

obvious over Zhu in view of Spain. Pet. 6, 49–51 (citing Ex. 1012).
Petitioner accounts for the limitations recited in claims 4 and 26. *Id.*
Petitioner shows sufficiently for purposes of this Decision that each element of claims 4 and 26 is taught or suggested by the combined teachings of Zhu and Spain and shows reason to combine the references’ teachings with rational underpinning and reasonable expectation of success.

Patent Owner argues that “[l]ike Ground 2, Petitioner provides no explanation as to how Zhu would be modified in view of Spain to achieve the claimed invention apart from stating that a POSA ‘would have been motivated to modify Zhu’s system to include Spain’s learning/interpolating technique to improve location accuracy of Zhu’s fingerprint techniques by generating non-uniform grid points for ‘all locations in between the sampled locations.’” Prelim. Resp. 45–46.

For the reasons discussed above, we determine that Zhu discloses the non-uniform grid points of claim 4. *See supra* § IV.F.3.c. Furthermore, because Petitioner has demonstrated a reasonable likelihood of success in proving that at least one claim of the ’494 patent is unpatentable, we include this ground in the instituted *inter partes* review. *See SAS*, 138 S. Ct. at 1354, 1359–60; *PGS Geophysical*, 891 F.3d at 1360; 37 C.F.R. § 42.108(a).

5. *Unpatentability over and Zhu and Laitinen (Ground 5)*

Petitioner asserts claim 35 (which depends from claim 25) is unpatentable under 35 U.S.C. § 103(a) as obvious over Zhu in view of Laitinen. Pet. 6, 51–53 (citing Ex. 1012). Patent Owner does not dispute Petitioner’s assertions for this ground. *See generally* Prelim. Resp.

Petitioner accounts for the limitations recited in claim 35. Pet. 51–52
Petitioner shows sufficiently for purposes of this Decision that each element

of claim 35 is taught or suggested by the combined teachings of Zhu and Laitinen and shows reason to combine the references' teachings with rational underpinning and reasonable expectation of success. Thus, we determine that Petitioner has sufficiently established a reasonable likelihood of establishing claim 35 is obvious in view of Zhu and Laitinen.

6. *Unpatentability over Shkedi, Zhu, and Spain (Ground 6)*

Petitioner asserts claims 25, 26, and 35 are unpatentable under 35 U.S.C. § 103(a) as obvious over Shkedi, Zhu, and Spain. Pet. 6, 53–58 (citing Ex. 1012). Patent Owner disputes Petitioner's assertions for the same reasons as those set forth for grounds one through four. *See* Prelim. Resp. 46. Petitioner shows reason to combine the references' teachings with rational underpinning and reasonable expectation of success. *Id.* (citing, e.g., Ex. 1012 ¶¶ 243–277); *see also id.* at 32 (citing Ex. 1006, 5:12–13, 8:48–56; Ex. 1009 ¶ 34), 49–51 (citing Ex. 1010, 92–94; Ex. 1009 ¶¶ 3, 9, 35, 54, 55, 101). We determine that Petitioner has sufficiently established a reasonable likelihood of establishing unpatentability based on these grounds for substantially the same reasons as we explain for grounds one through four.

Thus, we determine that Petitioner has sufficiently established a reasonable likelihood of establishing claims 25, 26, and 35 are obvious in view of Shkedi, Zhu, and Spain.

IV. CONCLUSION

For the reasons above, we determine that the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail with respect to challenged claims 1, 4, 25, 26, and 35 of the '494 patent. At this juncture in the proceeding, we have not made a final

determination with respect to the patentability of the challenged claims, or with respect to claim construction.

V. ORDER

For the foregoing reasons, it is

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1, 4, 25, 26, and 35 of the '494 patent is hereby instituted with respect to all grounds of unpatentability set forth in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this Decision.

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