

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

GEOSCOPE TECHNOLOGIES PTE. LTD.
Patent Owner

Case No. IPR2024-00032
U.S. Patent No. 8,786,494

PATENT OWNER'S PRELIMINARY RESPONSE

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Exhibit No.	Petitioner's Exhibits
APPLE-1001	U.S. Patent No. 8,786,494 to Alles et al. ("the '494 Patent")
APPLE-1002	Excerpts from the Prosecution History of the '494 Patent ("the Prosecution History")
APPLE-1003	Declaration and Curriculum Vitae of Dr. Karthikeyan Sundaresan
APPLE-1004	Complaint, <i>Geoscope Technologies PTE. LTD. v. Apple Inc.</i> , 1:22-cv-01373 (E.D. Va.), Dec. 1, 2022
APPLE-1005	U.S. Pat. App. Pub. No. 2006/0211376 ("Bhattacharya")
APPLE-1006	U.S. Pat. App. Pub. No. 2006/0240843 ("Spain")
APPLE-1007	U.S. Pat. App. Pub. No. 2005/0130677 ("Meunier")
APPLE-1008	U.S. Pat. No. 6,799,047 ("Bahl")
APPLE-1009	U.S. Patent No. 7,783,299 ("Anderson")
APPLE-1010	Special Mobile Group (SMG) Technical Committee (TC), European Telecommunications Standards Institute, <i>GSM Technical Specification - Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification (GSM 04.08)</i> (Dec. 1995)
APPLE-1011	U.S. Patent No. 6,560,442 ("Yost")
APPLE-1012	Nico Deblauwe, "GSM-based Positioning: Techniques and Applications, 2008, IBSN: 9789054874942 ("Deblauwe")
APPLE-1013 - APPLE-1049	RESERVED
APPLE-1050	Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (USPTO June 21, 2022) ("Interim Procedure")
APPLE-1051	Memorandum Opinion dated Sept. 18, 2023, <i>Geoscope Technologies PTE. LTD. v Apple Inc.</i> , 1:22-cv-01373, (E.D. Va.)

APPLE-1052	Stipulation Regarding Agreed Upon Claim Constructions, <i>Geoscope Technologies PTE. LTD. v Apple Inc.</i> , 1:22-cv-01373, (E.D. Va. May 23, 2023)
APPLE-1053	Notice of Appeal dated Sept. 25, 2023, <i>Geoscope Technologies PTE. LTD. v Apple Inc.</i> , 1:22-cv-01373, (E.D. Va.)
APPLE-1054	Memorandum Opinion & Order, <i>Geoscope Technologies PTE. LTD. v Apple Inc.</i> , 1:22-cv-01373, (E.D. Va. Jul. 19, 2023) [NB: Petitioner’s Ex. 1054 is the Memorandum Opinion & Order from <i>Geoscope Technologies Pte. Ltd. v. Google LLC</i> , 1:22-cv01331, (E.D. Va. Jul. 19, 2023). Patent Owner has submitted Memorandum Opinion & Order, <i>Geoscope Technologies Pte. Ltd. v. Apple Inc.</i> , 1:22-cv-01373, (E.D. Va. Jul. 19, 2023) as Ex. 2012.]

Exhibit No.	Patent Owner’s Exhibits
2001	Declaration of Saunak K. Desai in Support of Patent Owner’s Motion For Pro Hac Vice Admission of Saunak K. Desai Under 37 C.F.R. § 42.10(c)
2002	U.S. Patent No. 7,796,966 (“Bhattacharya ’966 Patent”)
2003	U.S. Patent No. 7,753,278 (“Spain ’278 Patent”)
2004	U.S. Patent No. 8,068,802
2005	U.S. Patent No. 7,257,414
2006	U.S. Patent No. 7,433,695
2007	U.S. Patent No. 7,734,298
2008	Memorandum Opinion on Google’s Motion for Judgment on the Pleadings on Patent Eligibility dated Sept. 18, 2023, <i>Geoscope Technologies Pte. Ltd. v Google LLC</i> , Civ. Action No.1:22-cv-01331, (EDVA)
2009	Final Judgment dated October 5, 2023, <i>Geoscope Technologies Pte. Ltd. v. Apple Inc.</i> , Civ. Action No. 1:22-cv-01373 (EDVA)

2010	Final Judgment dated October 6, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC</i> , Civ. Action No. 1:22-cv-01331 (EDVA)
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2012	Claim Construction Memorandum Opinion & Order, <i>Geoscope Technologies Pte. Ltd. v. Apple Inc.</i> , 1:22-cv-01373, (E.D. Va. Jul. 19, 2023)
2013	Order dated June 26, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC</i> , Civ. Action No. 1:22-cv-01331 (EDVA)
2014	Defendant Apple Inc.’s Final Invalidity Contentions dated July 3, 2023, <i>Geoscope Technologies Pte. Ltd. v. Apple Inc.</i> , Civ. Action No. 1:22-cv-01373 (EDVA)
2015	Geoscope’s Opening Appeal Brief dated November 17, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC, Apple Inc.</i> , Case Nos. 24-1003 (Lead) 24-1018 (member) (Fed. Cir.)
2016	U.S. Patent No. 8,406,753
2017	U.S. Patent No. 9,097,784
2018	U.S. Patent No. 7,561,104
2019	Manual of Patent Examining Procedure, Eighth ed., Rev. 9 (August 2012)
2020	U.S. Patent No. 8,400,358
2021	Prosecution History of U.S. Patent No. 8,400,358

I. INTRODUCTION

The Board should deny the Petition for *Inter Partes* Review of U.S. Patent No. 8,786,494 (“’494 Patent”) because Petitioner Apple Inc. (“Petitioner”) fails to demonstrate a reasonable likelihood that any challenged claim is not patentable.

As an initial matter, the Board should exercise its discretion to deny the Petition under § 325(d) and/or § 314(a). *First*, Petitioner relies on substantially the same art that was considered during prosecution of the ’494 Patent and does not identify any material error by the Office in evaluating that art. The Petition is primarily based on U.S. Patent App. Pub. No. 2006/0211376 (“Bhattacharya”) and U.S. Patent App. Pub. No. 2006/0240843 (“Spain”) which were considered during prosecution. The Examiner also considered several related references with the *same disclosures* from Bhattacharya and/or Spain that Petitioner relies on here but did not reject the challenged claims over any of them. Without identifying any specific error, Petitioner generically asserts that the Examiner must have overlooked the disclosures in every one of these references. But Petitioner provides no basis for this contention which is inconsistent with the Office’s patent examination principles and procedures. The Petition is a rehash of the ’494 Patent prosecution and should be denied.

Second, two district court litigations involving the ’494 Patent have already resulted in final judgments based on the district court’s ruling that the asserted claims

are unpatentable pursuant to 35 U.S.C. § 101. These litigations are *Geoscope Technologies Pte. Ltd. v. Apple Inc.*, Civ. Action No. 1:22-cv-01373-MSN (E.D. Va.) (“Apple Action”) and *Geoscope Technologies Pte. Ltd. v. Google LLC.*, Civ. Action No. 1:22-cv-01331-MSN (E.D. Va.) (“Google Action”). Moreover, by the time the district court issued its § 101 opinion—and months before the Petition was filed—the parties and the court had already invested substantial resources into the actions, completing *Markman*, fact discovery, and expert discovery. Under similar circumstances, the Board has recognized that institution would not be an efficient use of its time and resources. Institution would be particularly inefficient here because Patent Owner has only appealed the district court’s § 101 ruling as to one claim challenged in this proceeding but the Board is required to institute on all challenged claims or none. Further, the Petition falls far short of presenting a “compelling unpatentability challenge” that would warrant institution despite this inefficiency.

Because Patent Owner has only appealed the district court’s § 101 ruling as to dependent claims 4 and 26¹ which require a “database compris[ing] previously-gathered calibration data for one or more non-uniform grid points within said

¹ The Petition challenges claim 4 of the ’494 Patent but does not challenge claim 26. Pet. at 1; *see also id.* at v-xi.

region,” Patent Owner has focused this Preliminary Response on claim 4. Even if the merits are considered, the Petition still fails. At a minimum, Petitioner does not show that its cited art has any teaching or suggestion of “non-uniform grid points.” The Petitioner proposed the district court’s construction of “grid point,” which recognizes that the grid points of the ’494 Patent are not just any points on a grid. Rather, they have specific requirements including that they are generated based on the analysis of calibration data. Thus, what Petitioner relies on in the cited references is fundamentally different from the non-uniform grid points of the ’494 Patent. As a result, Petitioner is unable to point to any disclosure in its prior art references that meets aspects of the claim construction that it proposed for this proceeding. Instead, Petitioner simply ignores those aspects of the construction. This is a fatal flaw that warrants denial of institution.

II. THE BOARD SHOULD DENY INSTITUTION UNDER § 325(d)

The Board should exercise its discretion to deny institution under § 325(d) because “the same or substantially the same prior art or arguments previously were presented to the Office” during prosecution of the ’494 Patent. 35 U.S.C. § 325(d). In assessing whether to exercise its § 325(d) discretion, the Board applies a two-part framework: first determining whether the same or substantially the same prior art or arguments previously were presented to the Office; and if either of the foregoing conditions is satisfied, whether the petitioner has demonstrated that the Office erred

in a manner material to the patentability of the challenged claims. *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential); *Becton, Dickinson and Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17-18 (PTAB Dec. 15, 2017) (describing nonexclusive factors useful in applying the framework under § 325(d)).

Petitioner has not met its burden under the *Advanced Bionics* framework. Under the first prong of the framework (which relates to *Becton* factors a, b, and d), Petitioner presents substantially the same prior art that was previously presented to the Office and cannot show otherwise. Under the second prong of the framework (which relates to *Becton* factors c, e, and f), Petitioner fails to demonstrate that the Office erred in its evaluation of the previously-presented prior art. Accordingly, the Board should exercise its discretion to deny institution as part of its “commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Advanced Bionics*, IPR2019-01469, Paper 6 at 9.

A. Petitioner Relies on Substantially the Same Prior Art Evaluated by the Examiner

Petitioner’s grounds for seeking *inter partes* review of the ’494 Patent are based largely on prior art references already considered by the Office: Bhattacharya

and Spain.² The '494 Patent is a continuation of U.S. Patent No. 8,400,358 (“’358 Patent,” Ex. 2020) and claims priority to it. Ex. 1001 at 1 (“Related U.S. Application Data” identifying the '494 Patent as a “Continuation of application No. 12/424,320 ... now Patent No. 8,400,358”); *id.* at 1:6-10 (“The present application is a continuation application of and claims the priority benefit of co-pending U.S. application Ser. No. 12/424,320...”)).

Thus, the prosecution of the '358 Patent is relevant to the § 325(d) analysis for the '494 Patent because the Manual for Patent Examining Procedure requires an examiner to “consider information which has been considered by the Office in a parent application when examining ... a continuation application” and states that “the information need not be resubmitted in the continuing application.” Ex. 2019 at 600-144 (MPEP § 609.02 (August 2012)). Indeed, many Board decisions—including *Becton, Dickinson*—have involved § 325(d) analyses for a challenged patent based on references considered during prosecution of a priority patent or application. *E.g.*, *Becton, Dickinson*, IPR2017-01586, Paper 8 at 16, 22-23; *Google LLC v. Kewazinga Corp.*, IPR2021-00524, Paper 17 at 10-12 (PTAB Aug. 24, 2021);

² As explained below, the Petition also includes another reference—Meunier—but only for two of the grounds and only for a very narrow purpose that does not change the § 325(d) analysis.

Microsoft Corp. v. IPA Techs., Inc., IPR2019-00840, Paper 9 at 15-17 (PTAB Nov. 12, 2019) (citing MPEP § 609); *R.J. Reynolds Vapor Co. v. Fontem Holdings I B.V.*, IPR2018-00632, Paper 9 at 20-21 (PTAB Sept. 28, 2018) (citing MPEP § 609.02); *SharkNinja Operating LLC v. iRobot Corp.*, IPR2020-00733, Paper 11 at 40 (PTAB Oct. 6, 2020) (same).

The prosecution of the '358 Patent is particularly relevant to the § 325(d) analysis for the '494 Patent because: **(1)** both were examined by the same Examiner (*compare* Ex. 1001 at 1 *with* Ex. 2020 at 1 (identifying “Primary Examiner” as Dao Phan)) and **(2)** the Examiner rejected the '494 Patent claims for nonstatutory double patenting over the '358 Patent (Ex. 1002 at 42-43), and Applicant responded with a terminal disclaimer (*id.* at 22, 35). *See Beckton, Dickinson*, IPR2017-01586, Paper 8 at 23 (finding prosecution of priority patent relevant to § 325(d) analysis of challenged patent because the challenged patent was terminally disclaimed over the priority patent, indicating similarity of claim scope between the two patents). The terminal disclaimer shows not only that the claims of the '494 Patent are similar in scope to those of the '358 Patent but also that the Examiner had the '358 Patent in mind while examining the '494 Patent. *See Kewazinga*, IPR2021-00524, Paper 17 at 10-12 (finding that nonstatutory double patenting rejection and terminal disclaimer of challenged patent over priority patent “further evidences that the Examiner considered the prosecution of the [priority patents] during the prosecution of the

[challenged] patent”).

The prosecution history of the ’358 Patent demonstrates that, during prosecution of the ’494 Patent, the Examiner considered substantially the same prior art that Petitioner relies on here. As reflected in an “Information Disclosure Statement by Applicant,” the Examiner considered U.S. Patent No. 7,796,966 (“Bhattacharya ’966 Patent”) during prosecution of the ’358 Patent. Ex. 2021 at 20 (showing Bhattacharya ’966 Patent not lined through and stating, with Examiner’s initials, “all references considered except where lined through” (capitalization omitted)); *see also* Ex. 2020 at Page 2 (identifying Bhattacharya ’966 Patent as one of the “U.S. PATENT DOCUMENTS” under “References Cited”). The Bhattacharya ’966 Patent issued—without substantive changes—from the patent application that was published as what Petitioner refers to as “Bhattacharya.” Ex. 2002 at 1 (showing that the “Prior Publication Data” for the Bhattacharya ’966 Patent includes US 2006/0211376—*i.e.*, the publication identified as “Bhattacharya” in the Petition).

Moreover, the Examiner considered U.S. Patent App. Pub. No. 2006/0240843 (*i.e.*, what Petitioner refers to as “Spain”) during prosecution of the ’358 Patent. Ex. 2021 at 138 (showing U.S. Patent App. Pub. No. 2006/0240843 not lined through and stating, with Examiner’s initials, “all references considered except where lined through” (capitalization omitted)); *see also* Ex. 2020 at Page 2 (identifying Spain as

one of the “U.S. PATENT DOCUMENTS” under “References Cited”). Similarly, the Examiner considered U.S. Patent No. 7,753,278 (“Spain ’278 Patent”) which issued from the patent application that was published as what Petitioner refers to as “Spain.” Ex. 2021 at 20; Ex. 2020 at Page 2; Ex. 2003 at 1 (showing that the “Prior Publication Data” for the Spain ’278 Patent includes US 2006/0240843—*i.e.*, the publication identified as “Spain” in the Petition).

Furthermore, the Examiner considered numerous other patents and published applications assigned to Polaris Wireless, the assignee of Spain and Bhattacharya. *See* Ex. 2020 at Page 2 (listing as “References Cited” several Polaris Wireless patents and published applications identified by inventor names “Bhattacharya,” “Spain” or “Spain, Jr.,” “Dressler,” and “Gordon”); Ex. 2021 at 19-21. Many of these Polaris Wireless references are related to and have nearly identical specifications to Bhattacharya and/or Spain. As a result, many include the same disclosures from Bhattacharya and Spain that Petitioner relies on here. For example, the Examiner also considered U.S. Patent No. 8,068,802—a continuation of the application that was published as Bhattacharya and issued as the Bhattacharya ’966 Patent—which has a specification nearly identical to that of Bhattacharya. Ex. 2020 at Page 2; Ex. 2021 at 19; *compare generally* Ex. 1005 with Ex. 2004. As another example, the Examiner considered U.S. Patent Nos. 7,257,414, 7,433,695, and 7,734,298, all of which have the same figures and corresponding descriptions from

Spain that Petitioner relies upon to argue (mistakenly) that it teaches “non-uniform grid points.” Ex. 1001 at Page 2; Ex. 2021 at 20; *compare* Ex. 1006 at Figs. 6a and 6e, [0098]-[0099] *with* Ex. 2005 at Figs. 6a and 6e, 9:26-52 *and* Ex. 2006 at Figs. 6a and 6e, 9:17-41 *and* Ex. 2007 at Figs. 6a and 6e, 9:3-27; *see also* Pet. at 58-61, 63 (relying on Ex. 1006 at Figs. 6a and 6e, [0098]-[0099] to argue that the claim element “one or more non-uniform grid points within said region” is disclosed by Spain).

Although Petitioner does not contend otherwise—because it does not address the prosecution of the parent ’358 Patent at all (*see* Pet. at 84-85)—the inclusion of Bhattacharya and Spain on IDSs in the prosecution history of the ’358 Patent is sufficient to meet the first prong of the *Advanced Bionics* framework. The Board’s precedential ruling in *Advanced Bionics* makes clear that “[p]reviously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, *such as on an Information Disclosure Statement (IDS)*, in the prosecution history of the challenged patent.” *Advanced Bionics*, IPR2019-01469, Paper 6 at 7-8 (emphasis added); *see also Medtronic CoreValve LLC v. Speyside Med., LLC*, IPR2021-00241, Paper 9 at 23, 31 (PTAB Jul. 23, 2021) (denying institution where references were included on IDSs but not expressly included in a rejection by the Examiner).

Indeed, the Director has recently confirmed that “the first part of the *Advanced Bionics* framework does not require that an Examiner provide a ‘discussion,

analysis, or other findings on the applicability’ of the relevant material contained in an IDS.” *Keysight Techs., Inc. v. Centripetal Networks, Inc.*, IPR2022-01421, Paper 14 at 5 (PTAB Aug. 24, 2023); *see also Google LLC v. Valtrus Innovations Ltd.*, IPR2022-01197, Paper 18 at 15-16 (PTAB June 13, 2023) (stating, on remand after Director review, “[o]ur precedent holds that providing a document to the Office in an Information Disclosure Statement is sufficient to satisfy prong one of the *Advanced Bionics* analysis as long as that ‘previously presented’ art is ‘the same or substantially the same’ as that presented in the Petition”).

For these reasons, Petitioner cannot dispute that Bhattacharya and Spain, and the disclosures therein, were considered during prosecution of the ’358 Patent. Thus, as explained above, Petitioner cannot dispute that these references were considered during prosecution of the ’494 Patent. *Supra* (quoting MPEP § 609.02 and citing cases). Petitioner argues that “no IDS was filed by the application or considered by the Examiner” during prosecution of the ’494 Patent (Pet. at 84) but this improperly disregards the prosecution of the ’358 Patent, of which the ’494 Patent is a continuation. *Kewazinga*, IPR2021-00524, Paper 17 at 12 (rejecting petitioner’s argument that “fails to address [] MPEP § 609.02 and prior Board decisions ... where the Board looked to the prosecution of priority patents or applications for purposes of § 325(d)”).

Although Petitioner’s tertiary reference—Meunier—was not expressly considered by the Examiner, Petitioner relies on Meunier in only a subset of its grounds and only for a narrow purpose that does not change the § 325(d) analysis. Petitioner only relies on Meunier for grounds 1C and 1D, which challenge only six of the twenty-two challenged claims. Pet. at 1. And in those grounds, Meunier is only used for a limited purpose related to the “average value” element recited in those claims. *See* Pet. at 76-79. Even for those grounds, the bulk of Petitioner’s argument is based on Bhattacharya and Spain. For example, for most of the claims challenged in grounds 1C and 1D (and limitations of those claims), Petitioner refers back to its arguments made in connection with claims challenged in grounds 1A and 1B, ***which do not include Meunier***. *See* Pet. at 74 (referring back to claim 1 in analysis of claim 25), 82-83 (referring back to claims 12, 18, and 21 in analysis of claims 27, 29, and 31), 83 (citing only “APPLE-1005”—*i.e.*, Bhattacharya—as “Corresponding Evidence” for claims 27, 29, 31, and 32 in ground 1D).

Thus, even if the inclusion of Meunier in the Petition for a limited purpose is credited, it does not change that—at a minimum—“***substantially the same*** prior art or arguments previously were presented to the office.” *Advanced Bionics*, IPR2019-01469, Paper 6 at 7-8 (quoting 35 U.S.C. § 325(d)) (emphasis added); *see also Palo Alto Networks, Inc. v. Centripetal Networks, Inc.*, IPR2021-01270, Paper 10 at 13-14 (PTAB Jan. 24, 2022) (finding substantially the same prior art previously

presented to the Office despite the Petition including, for limited purposes, prior art that was not considered during prosecution).

For these reasons, the first prong of the *Advanced Bionics* framework is met.

B. Petitioner Does Not Show that the Office Materially Erred in Evaluating the Prior Art

Under the second prong of the *Advanced Bionics* framework, Petitioner fails to meet its burden to demonstrate that the Office made a material error in its consideration of Bhattacharya and Spain. Indeed, Petitioner does not identify *any* specific error in the Examiner’s consideration of Bhattacharya, Spain, and other highly similar Polaris Wireless references. *See* Pet. at 84-85. Instead, Petitioner generically alleges that “the Examiner committed an error by not examining the application against pertinent prior art, such as the asserted references in this petition.” *Id.* at 84. This merely rehashes the first prong—*i.e.*, whether the same or substantially the same prior art or arguments were previously considered by the Office. As explained above, the Examiner indisputably considered substantially the same prior art—including Bhattacharya and Spain—during prosecution so this argument fails. *Supra* § II.A.

Even to the extent Petitioner’s argument is directed to the second prong of the *Advanced Bionics* framework—*i.e.*, whether the petitioner has demonstrated material error by the Office—it still fails. Petitioner cannot meet its burden to show

a material error by the Examiner with this boilerplate contention that does not explain specifically what the alleged material error is. The Board has recognized that such conclusory assertions of error are insufficient to satisfy the second prong of the *Advanced Bionics* framework. *Panduit Corp. v. Corning Optical Commc'ns LLC*, IPR2021-01562, Paper 20 at 16-18 (PTAB Apr. 6, 2022) (rejecting as “conclusory and non-persuasive” petitioner’s argument that the examiner erred because he purportedly “misapprehended or overlooked the prior art’s teachings” and would have rejected the claims if the prior art was “properly considered”); *Google LLC v. Kewazinga Corp.*, IPR2021-00524, Paper 17 at 17-18 (PTAB Aug. 24, 2021) (denying institution under § 325(d) because petitioner did “not identify any specific teaching in any reference that the Examiner misapprehended or overlooked”); *Ivantis, Inc. et al. v. Sight Scis., Inc.*, IPR2022-01540, Paper 14 at 13-14 (PTAB Mar. 22, 2023) (denying institution under § 325(d) and rejecting argument that pointing to “examiner’s silence in discussing relevant prior art” constitutes a showing of material error).

Similarly, Petitioner’s broad citation to the entirety of its invalidity argument cannot demonstrate material error in the Examiner’s consideration of Bhattacharya and Spain. Pet. at 84 (citing “§III”). As the Board has recently found, it need not assess the merits of a petition where the petitioner has not sufficiently explained the basis for its assertion of material error. *Valtrus*, IPR2022-01197, Paper 18 at 20-23

(rejecting petitioner’s argument that “Ground 6 shows ‘how the Examiner erred in its evaluation...’” and citing additional decisions with similar rulings). In other words, the Board need not “mine the Petition’s grounds” along with the prior art to determine how the Office allegedly erred “in the absence of any explanation from Petitioner” because this “places Petitioner’s [§ 325(d)] burden improperly on the shoulders of the Board” and “cuts against the express language of [the Board’s] § 325(d) precedent.” *Id.* at 22-23.

Thus, Petitioner has failed to meet its burden as to the second prong of the *Advanced Bionics* framework.³ The Board should exercise its discretion to deny institution under § 325(d).

³ Although Petitioner does not contend otherwise, its expert declaration also does not weigh against discretionary denial under § 325(d) because “providing a declaration alone is insufficient.” *Juniper Networks, Inc. et al. v. Mobile Telecomms. Techs., LLC*, IPR2017-00642, Paper 31 at 23 (PTAB Mar. 14, 2018). Petitioner’s expert declaration merely parrots the Petition and fails to present any evidence not already considered by the Examiner to warrant reconsideration of the prior art. *See NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 16-17 (PTAB Sept. 12, 2018) (precedential) (finding expert declaration did not warrant reconsideration “because the declaration is substantially similar to the Petition”).

**III. THE BOARD SHOULD EXERCISE ITS DISCRETION TO DENY
THIS PETITION UNDER § 314(a)**

The Board should exercise its discretion to deny institution under § 314(a) because institution would be an “inefficient use of Board resources.” *NHK Spring Co.*, IPR2018-00752, Paper 8 at 19-20. As explained in further detail below, two district court litigations involving the ’494 Patent are not just at advanced stages but, in fact, have *already resulted in final judgments* stemming from the district court’s ruling that the asserted claims are unpatentable pursuant to 35 U.S.C. § 101.

In *NHK Spring Co.*, the Board denied institution of an *inter partes* review under § 314(a) where a parallel district court proceeding was nearing its final stages, and a PTAB proceeding would not conclude until about six months after the district court trial was scheduled. *NHK Spring Co.*, IPR2018-00752, Paper 8 at 19-21. In so reasoning, the Board set the precedent that parallel court proceedings must be considered when determining whether the institution of an *inter partes* review is consistent with the objective of the America Invents Act (“AIA”) to “provide an effective and efficient alternative to district court litigation.” *Id.*

Building on *NHK Spring Co.*, in *Apple Inc. v. Fintiv, Inc.*, the Board identified specific factors relating 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.” IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential).

The *Fintiv* factors include:

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;
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.

Id.

The Director provided further guidance on the application of the *Fintiv* precedent in a June 21, 2022 Memorandum regarding an Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (“Guidance Memo”) and *CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 (PTAB Feb. 27, 2023) (precedential). The Director set forth a “compelling merits test” under which the Board—if it has found that *Fintiv* factors 1-5 favor discretionary denial—must assess whether a petition presents a “compelling unpatentability challenge” before discretionarily denying institution. *CommScope*, IPR2022-01242, Paper 23 at 3-5. As the Director explained, “the

compelling merits standard is a higher standard than the standard for institution set by statute.”⁴ *Id.* at 3. A reasonable likelihood that the petitioner would prevail with respect to at least one challenged claim does not suffice to demonstrate that a challenge is “compelling.” Rather, a “compelling” challenge is one “in which the evidence, if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence” such that “it is **highly likely** that the petitioner would prevail with respect to at least one challenged claim.” *Id.* at 3-4 (emphasis added). This is a “high standard” (*see AviaGames, Inc. v. Skillz Platform, Inc.*, IPR2022-00530, Paper 14 at 3, 5 (PTAB Mar. 2, 2023)) and the Board must explain its reasoning in determining whether the merits are compelling. *CommScope*, IPR2022-01242, Paper 23 at 4-6.

The *Fintiv* factors weigh strongly in favor of discretionary denial and Petitioner’s challenge does not meet even the statutory standard, let alone the higher “compelling merits” standard. On September 18, 2023, the district court issued its ruling that the asserted claims of the ’494 Patent are unpatentable under § 101 in

⁴ Institution of an IPR is authorized only when “the information presented in the petition ... and any response ... 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.” 35 U.S.C. § 314(a); *CommScope*, IPR2022-01242, Paper 23 at 3 n.3.

both the Apple Action and the Google Action. Exs. 1051, 2008. Shortly thereafter, on October 5, 2023 and October 6, 2023, the district court issued final judgments in both actions. Exs. 2009, 2010. Accordingly, both actions are closed pending Patent Owner’s appeal to the Federal Circuit. As explained further below, Patent Owner’s appeal involves just one claim of the ’494 Patent that Petitioner challenges here, making discretionary denial even more appropriate. *See infra* § III.F.

The Board has recognized that the *Fintiv* factors strongly favor denial of institution where the challenged patent has already been invalidated by the district court under § 101. In *AviaGames*—which is ***directly*** analogous to the present case—the Board denied institution after weighing the *Fintiv* factors “largely because the claims of the challenged patent have been determined to be invalid” explaining that “the interests of efficiency and integrity of the system would be best served by invoking 35 U.S.C. § 314(a) to deny institution” in view of the district court’s ruling under § 101. *AviaGames*, IPR2022-00530, Paper 12 at 11-15. Although the Board initially exercised its discretion to deny institution based on the *Fintiv* factors alone, the Director remanded the matter to the Board to assess “whether the record before the Board prior to institution presents a compelling, meritorious challenge,” stating that “[i]f the Board finds the record does not rise to this high standard, the Board will exercise discretion to deny institution.” *AviaGames*, IPR2022-00530, Paper 14 at 5-6. Importantly, the Director did not disagree with or take issue with the Board’s

analysis of the *Fintiv* factors in *AviaGames*. On remand, the Board determined that the Petition did not meet the “compelling merits” standard and discretionarily denied institution. *AviaGames*, IPR2022-00530, Paper 15 at 2-3, 27.

Similarly, in *Snap Inc. v. Blackberry Ltd.*, a district court had issued an order finding all claims of the challenged patent invalid under § 101; as a result, the Board denied institution, in large part because it did “not consider it an efficient use of Board resources to institute an *inter partes* review where all remaining Challenged Claims have already been adjudicated by an Article III court.” IPR2020-00391, Paper 8 at 17 (PTAB July 13, 2020).

As discussed below, the *Fintiv* factors favor discretionary denial here even more than they did in *AviaGames* and *Snap*. And because Petitioner has failed to meet the high standard required by the “compelling merits test,” the Board should exercise its discretion to deny institution under § 314(a).

A. Factor 1: The district court case has concluded, and cannot be stayed

“A district court stay of the litigation pending resolution of the PTAB trial allays concerns about inefficiency and duplication of efforts,” and thus “weigh[s] against exercising the authority to deny institution under *NHK*.” *Fintiv*, IPR2020-00019, Paper 11 at 6.

Petitioner has not sought a pre-institution stay in view of the instant Petition. Nor could it because the district court proceedings are closed pending the § 101 appeal to the Federal Circuit. Accordingly, contrary to Petitioner’s assertion, there is no need to “predict” whether the district court will stay the related litigation—the district court **cannot** stay the litigation given the posture. Pet. at 86. Thus, as the Board found in *Snap*, this factor weighs in favor of exercising discretion to deny institution. *Snap*, IPR2020-00391, Paper 8 at 13; *see also AviaGames*, IPR2022-00530, Paper 12 at 12 (finding that *Fintiv* Factor 1, if weighed, favors denial because “the District Court’s invalidity determination has already been made”).

B. Factor 2: The Board’s final written decision deadline would be more than one year after the district court issued its § 101 decision

As demonstrated by *NHK Spring Co.* and its progeny, “[i]f the court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution under *NHK*.” *Fintiv*, IPR2020-00019, Paper 11 at 9.

The 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. There is no further scheduled or proposed trial date in the Apple Action. In *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].” *AviaGames*, IPR2022-00530, Paper 12 at 12-13 (emphasis added). The Board in *Snap* came to the same conclusion, finding that this factor weighed in favor of denying institution because the Board’s statutory deadline for the final written decision would be “one year after the district court issued final judgment.” *Snap*, IPR2020-00391, Paper 8 at 13. For the same reasons, the Board should find that this factor weighs in favor of denial of institution.

C. Factor 3: There has been substantial investment by the parties and district court in the litigation, culminating in a final decision by the court

“[I]f, at the time of the institution decision, the district court has issued substantive orders related to the patent at issue in the petition, this fact favors denial.” *Fintiv*, IPR2020-00019, Paper 11 at 9-10.

The Apple Action is concluded as a result of the district court’s § 101 ruling—*i.e.*, a substantive order related to the ’494 Patent. Ex. 1051. Based on the same facts, the Board in *AviaGames* and *Snap* found this factor to weigh in favor of denial of institution. *AviaGames*, IPR2022-00530, Paper 12 at 13 (“The District Court’s invalidity determination is a substantive order related to the [challenged] patent. We determine this factor weighs in favor of denying institution.”) (citations omitted); *Snap*, IPR2020-00391, Paper 8 at 13 (finding that *Fintiv* Factor 3 supports denial of

institution because “[t]he parties’ and district court’s investment in the district court case was sufficient to already reach a final adjudication”).

Even before the district court issued its § 101 ruling, the parties and district court had already made a substantial investment in the litigation. The district court issued a *Markman* order (Ex. 2012)⁵—another substantive order related to the ’494 Patent—before the Petition was filed and this weighs in favor of denial. Moreover, fact and expert discovery in the Apple Action were completed prior to the district court’s § 101 ruling and completed long before the Petition was filed on October 31, 2023. *See* Ex. 2011 (setting July 3, 2023 deadline for opening expert reports and August 18, 2023 deadline for close of expert discovery). This completed discovery included extensive written discovery, numerous depositions of fact and expert witnesses, and expert reports (including those addressing the validity of the ’494 Patent under 35 U.S.C. §§ 102 and 103).

Petitioner contends that it has “diligently worked on addressing the validity of the asserted patents” in this proceeding in various ways (Pet. at 86-87) but it did not file the Petition until *after* the parties and the district court invested significant

⁵ The *Markman* order submitted by Petitioner as Ex. 1054 is from the Google Action. Patent Owner has submitted the *Markman* order from the Apple Action as Ex. 2012. The *Markman* orders from each action are substantively identical.

resources in the related litigation. Indeed, by the time the Petition was filed, all discovery in the related litigation had been completed, claim construction had been completed, and the district court had already issued its § 101 ruling and final judgment. Petitioner’s purported investment in this proceeding does not outweigh the significant investment made by the district court, Patent Owner, and even Petitioner itself in the related litigation—all of which occurred months before the Petition was filed. Nor does Petitioner’s purported investment take away from the substantial resources that the Board and the parties will need to expend if this proceeding moves forward.

Moreover, the district court and Patent Owner also made a substantial investment in the Google Action, another litigation involving the ’494 Patent.⁶ The

⁶ Although Petitioner is not a party to the Google Action, the Board has recognized that discretionary denial under the *Fintiv* factors can be based on a district court litigation involving the same challenged patent even if Petitioner is not a party to that case. For example, in *Mylan Laboratories Ltd. v. Janssen Pharmaceutica NV*, IPR2020-00440, Paper 17 (PTAB Sept. 16, 2020), the Board denied institution after evaluating the *Fintiv* factors for two related litigations involving the challenged patent—one between the patent owner and the petitioner (referred to as the “Mylan

same substantive orders—a *Markman* order and § 101 ruling—were issued by the district court in the Google Action. Exs. 1054, 2008. And fact and expert discovery were also completed in the Google Action prior to the district court’s § 101 ruling in September 2023. Ex. 2013 (setting July 3, 2023 deadline for opening expert reports and August 18, 2023 deadline for close of expert discovery). Again, Petitioner chose to file the Petition *after* these parties and the district court invested substantial resources in the case.

Thus, even aside from the district court’s substantive § 101 ruling related to the ’494 Patent, there has been substantial investment by the parties and the district court in the Apple Action (and the Google Action). Accordingly, in this proceeding, this factor weighs even more heavily in favor of denying institution than it did in *AviaGames* and *Snap* where the Board found that the district court’s § 101 ruling alone was sufficient to conclude that this factor weighs in favor of denying institution.

D. Factor 4: The ’494 Patent was found to be invalid by another tribunal and, in any event, there is substantial overlap between issues raised in the petition and in the district court

litigation”) and one between the patent owner and a different defendant (referred to as the “Teva litigation”). *Id.* at 9-11, 25.

Fintiv states that “if the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial,” and if “other circumstances weigh against redoing the work of another tribunal, the Board may, nonetheless, exercise the authority to deny institution.” *Fintiv*, IPR2020-00019, Paper 11 at 12, 14.

In *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. *AviaGames*, IPR2022-00530, Paper 12 at 14. For at least the same reason, the Board should find the same here.

Even apart from the district court’s § 101 ruling, the three prior art references relied on by Petitioner for this proceeding—Bhattacharya, Spain, and Meunier—are also relied on by Petitioner in the Apple Action. Ex. 2014 at 21 (identifying U.S. Patent App. Pub. No. 2006/0211376—*i.e.*, Bhattacharya—and the Spain ’278 Patent which issued from the application published as U.S. Patent App. Pub. No. 2006/0240843—*i.e.*, Spain—and U.S. Patent App. Pub. No. 2005/0130677—*i.e.*, Meunier—as prior art asserted against the ’494 Patent in Petitioner’s Final Invalidity Contentions in the Apple Action); *see also* Ex. 2003 at 1 (showing that the “Prior Publication Data” for the Spain ’278 Patent includes US 2006/0240843). Thus, there is complete overlap between Petitioner’s invalidity arguments in this proceeding and its invalidity arguments in the district court. Further, the record pertaining to these

invalidity arguments has already been developed in the district court, including through hundreds of pages of expert reports. Subject to the pending appeal, the '494 Patent will remain invalid under § 101⁷ or its invalidity will be adjudicated in the district court based on this extensive, already-developed record.

Petitioner argues that there is no overlap of issues because the pending appeal is limited to § 101 issues (Pet. at 87-88) but this disregards that Petitioner has raised §§ 102 and 103 issues for the '494 Patent in the related litigation. And it ignores the substantial record developed in that litigation—including expert reports and deposition testimony that address these §§ 102 and 103 issues—that the parties expended significant resources to prepare.

It is an inefficient use of the Board's resources to adjudicate the validity of the '494 Patent where the district court has already done it. And even if considering

⁷ Consistent with the Director's guidance, if the district court's § 101 ruling is affirmed in a final, non-appealable judgment by the Federal Circuit, this proceeding—if instituted—would be terminated. *See AviaGames*, IPR2022-00530, Paper 14 at 5-6 (Director explaining that “[i]f the Board institutes an IPR after a compelling merits analysis, and if the invalidity judgment under 35 U.S.C. § 101 of the district court is affirmed in a final, non-appealable judgment by the Federal Circuit, this proceeding shall be terminated.”).

only the validity of the '494 Patent under §§ 102 and 103, it is an inefficient use of the Board's resources to develop a record that has already been developed in the Apple Action. Thus, this factor weighs in favor of denying institution.

E. Factor 5: Petitioner and the defendant in the district court litigation are the same party

The petitioner here and the defendant in the district court litigation are both Apple Inc.—in other words, identical. This was true in *Fintiv*, *Snap*, and *AviaGames*. Therefore, this factor weighs in favor of denying institution.

F. Factor 6: Other circumstances weigh in favor of exercising discretion to deny institution, including the merits

The “factors considered in the exercise of discretion” are part of a “balanced assessment of all the relevant circumstances in the case, including the merits.” *Fintiv*, IPR2020-00019, Paper 11 at 14. “[I]f the merits of the grounds raised in the petition are a closer call, then that fact has favored denying institution when other factors favoring denial are present.” *Id.* at 15.

As discussed in the merits sections below, each ground is lacking as to the only challenged claim for which Patent Owner has appealed the district court's § 101 ruling—dependent claim 4⁸—at least because the asserted references fail to teach

⁸ Patent Owner has also appealed the district court's § 101 ruling as to dependent claim 26 but the Petition does not challenge claim 26. Pet. at 1; *see also id.* at v-xi.

the “wherein said database comprises previously-gathered calibration data for one or more non-uniform grid points within said region” limitation. *Infra* § VIII. Thus, at best, the merits in this case fall into the camp of a “closer call,” not in Petitioner’s favor. At a minimum, the merits fall far short of satisfying the “compelling merits test” which presents a “higher standard than the standard for institution set by statute,” requiring that it be “highly likely that the petitioner would prevail with respect to at least one challenged claim.” *CommScope*, IPR2022-01242, Paper 23 at 3-5.

Further, as explained above, the Board should deny institution under § 325(d) because the Petition relies on substantially the same prior art and arguments evaluated by the Examiner during prosecution of the ’494 Patent. *Supra* § II. Although Petitioner’s attempt to rehash the prosecution of the ’494 Patent warrants discretionary denial on its own under § 325(d), at the very least it tips the scales further in favor of denial under the *Fintiv* factors.

Additionally, in *AviaGames*, the Board explained in connection with this factor that “on balance, the District Court’s invalidity determination is the most important relevant circumstance and, as the challenged patent has already been found to be invalid, this factor favors denial of institution.” *AviaGames*, IPR2022-00530, Paper 12 at 14-15. The same is true here—the district court has already found

the challenged patent to be invalid and, for the same reason as in *AviaGames*, this weighs in favor of denying institution.

There is an even stronger case for denial of institution here because Patent Owner has appealed the district court's § 101 ruling for only *one* of the twenty two claims challenged by Petitioner. The only challenged claim of the '494 Patent for which Patent Owner has sought reversal of the district court's § 101 ruling is dependent claim 4. Ex. 2015 at 7-8. Patent Owner cannot seek reversal as to any additional claims of the '494 Patent as it has already filed the opening brief in its appeal (Ex. 2015) and the deadline for filing any other notice of appeal passed no later than November 5, 2023. Fed. R. App. P. 4(a)(1)(A) ("In a civil case ... the notice of appeal required by Rule 3 must be filed with the district clerk within 30 days after entry of the judgment or order appealed from."). Thus, the district court's ruling as to the other asserted claims of the '494 Patent is truly final—they can no longer be appealed to the Federal Circuit.

This is important because, in *AviaGames*, the Director explained that the Board should *terminate an already-instituted IPR* if, after institution, the Federal Circuit affirmed the district court's § 101 ruling:

That said, should the district court's invalidity judgment be upheld on appeal, *the parallel proceedings at the Board would impose additional burdens and costs on the parties, including the Patent Owner, and*

this tribunal. If the Board institutes an IPR after a compelling merits analysis, and if the invalidity judgment under 35 U.S.C. § 101 of the district court is affirmed in a final, non-appealable judgment by the Federal Circuit, this proceeding *shall be terminated*.

AviaGames, IPR2022-00530, Paper 14 at 5-6 (emphasis added).

The Director acknowledged that it is inefficient for the Board to proceed—even after institution—with an IPR on claims subject to a final, non-appealable judgment of invalidity. Although the Director’s instruction refers to a final, non-appealable judgment by the Federal Circuit, the same principle is applicable here because, other than dependent claims 4 and 26 (the latter of which is not challenged in the Petition), the asserted claims of the ’494 Patent are *already* subject to a final, non-appealable judgment of invalidity. Accordingly, institution is particularly inefficient here because only one of the twenty two challenged claims is at issue in Patent Owner’s appeal but the Board is required to institute on all claims or none. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1355-57 (2018); *see also* GUIDANCE ON THE IMPACT OF SAS ON AIA TRIAL PROCEEDINGS, *available at* <https://www.uspto.gov/patents/ptab/trials/guidance-impact-sas-aia-trial> (“As required by the decision, the PTAB will institute as to all claims or none.”).

Because institution of any ground raised in the Petition would be an inefficient use of the Board’s resources—as evidenced by all six *Fintiv* factors—and the

Petition does not satisfy the “compelling merits test,” the Board should exercise its discretion under § 314(a) to deny institution.

IV. OVERVIEW OF THE '494 PATENT

The '494 Patent is directed to an invention for determining the location (or “geolocating”) of a mobile device using signal information from wireless communications networks (*e.g.*, cellular signals). Ex. 1001 at 1:53-61. To accomplish this, the claimed inventions recite providing a database of “calibration data” and collecting “network measurement data” observed by the mobile device. *Id.* at cl. 1. The observed network measurement data is then modified to account for varying conditions and other variables that may be caused by, for example, environmental factors or signals propagating indoors. *Id.* at 3:52-58. Once modified, the observed network measurement data is compared with the database of calibration data to determine the location of the mobile device. *Id.*

The invention of the '494 Patent addresses a particular problem in geolocation involving disparities between calibration data and observed data caused by “varying conditions and other operational variables” affecting how signals propagate in different environments, resulting in “poor estimated location accuracy.” *Id.* at 1:40-47, 9:46-50. One common reason for this disparity is that calibration data is “typically collected in an outdoor environment” because it is “time-consuming to perform calibration procedures indoors” but geolocation within a building—using

observed data collected indoors—is often desirable. *Id.* at 1:32-39. Thus, the differences in signal propagation outdoors versus indoors can make it difficult to perform an appropriate comparison of calibration data to observed data for geolocation. *Id.* To solve this problem, the '494 Patent independent claims are directed to modifying the observed data measured by a mobile device to eliminate disparities with previously-gathered calibration data. *Id.* at 3:52-58. The specification describes at length what these modifications may entail and how they are performed. *Id.* at 5:15-55, 6:1-62, 6:63-7:31.

Dependent claim 4 of the '494 Patent further recites the use of what the patent refers to as non-uniform “grid points.” As used in the '494 Patent, these “grid points” are not merely points on a grid. Rather, as explained below, the grid points of the '494 Patent are data structures that are generated and associated with signal information based on analysis of the similarities between calibration data that has been previously collected in a region. Because they are generated based on the calibration data—rather than being predefined—the location, geographical boundaries, and associated signal information of the grid points are not defined until determined from particular aspects of the calibration data. The grid points serve as additional known locations associated with network signal information, creating a denser “map” for mobile devices to compare observed data to for the purpose of determining their location.

The grid points of the '494 Patent “usually will not be uniformly distributed throughout the geographic region,” and thus the '494 Patent (and related patents) often uses the term “non-uniform grid points” or “NUGs” when describing grid points. *See* Ex. 2016 at 2:43-50; *see also* Ex. 1001 at 3:59-4:2.⁹ Additionally, the grid points “represent an area of collected calibration data.” Ex. 1001 at 3:65-4:2. Accordingly, the district court construed “grid point” as “a point associated with representative calibration data for an area,” which is the same construction that Petitioner proposes for this proceeding. Pet. at 3 (citing Ex. 1054).

In its *Markman* order, the district court provided further detail about the meaning of “grid point” in the '494 Patent and its construction of the term. *First*, the 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

⁹ U.S. Patent No. 8,406,753 (Ex. 2016; “’753 Patent”) and U.S. Patent No. 9,097,784 (Ex. 2017; “’784 Patent”) claim priority to the same provisional application as the '494 Patent, and also describe “grid points” as the term is used in this patent family. Consequently, the district court relied on disclosures in the '753 Patent and '784 Patent in construing the term “grid point.” *See* Ex. 2012 at 19-20 (citing '753 Patent (as “Ex. E”) and '784 Patent (as “Ex. F”)).

of calibration data” demonstrates “what *must be done* to arrive at a grid point or set of grid points.” Ex. 2012 at 19 (quoting ’753 Patent at Abstract) (emphasis in original). Accordingly, 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. *Second*, the district court explained that “representative calibration data” in its adopted construction reflects that “the defining characteristic of a NUG region ... is that the data points within an area are all ‘statistically very similar’ such that each of the grid points within the NUG region can represent the overall NUG.” Ex. 2012 at 20 (citing U.S. Patent No. 7,561,104 (Ex. 2018; “’104 Patent”) at 3:56-60; Ex. 2016 at 10:29-11:6; Ex. 2017 at 6:22-28). In other words, the geographical boundaries of the claimed grid points are undefined until determined by the claimed invention based on similarities across the measured calibration data.

Thus, although termed grid *points*, they are not just “points”—they represent a broader area whose boundaries are defined by the commonality of the calibration data measured in the region. This is depicted in the related ’784 Patent, which shows “a geographical region (R) having NUGs represented by NUG1, NUG2, and NUG3,” and explains “[a] NUG may be generated to represent the signal characteristics and calibration data over a given region.” Ex. 2017 at 6:21-34.

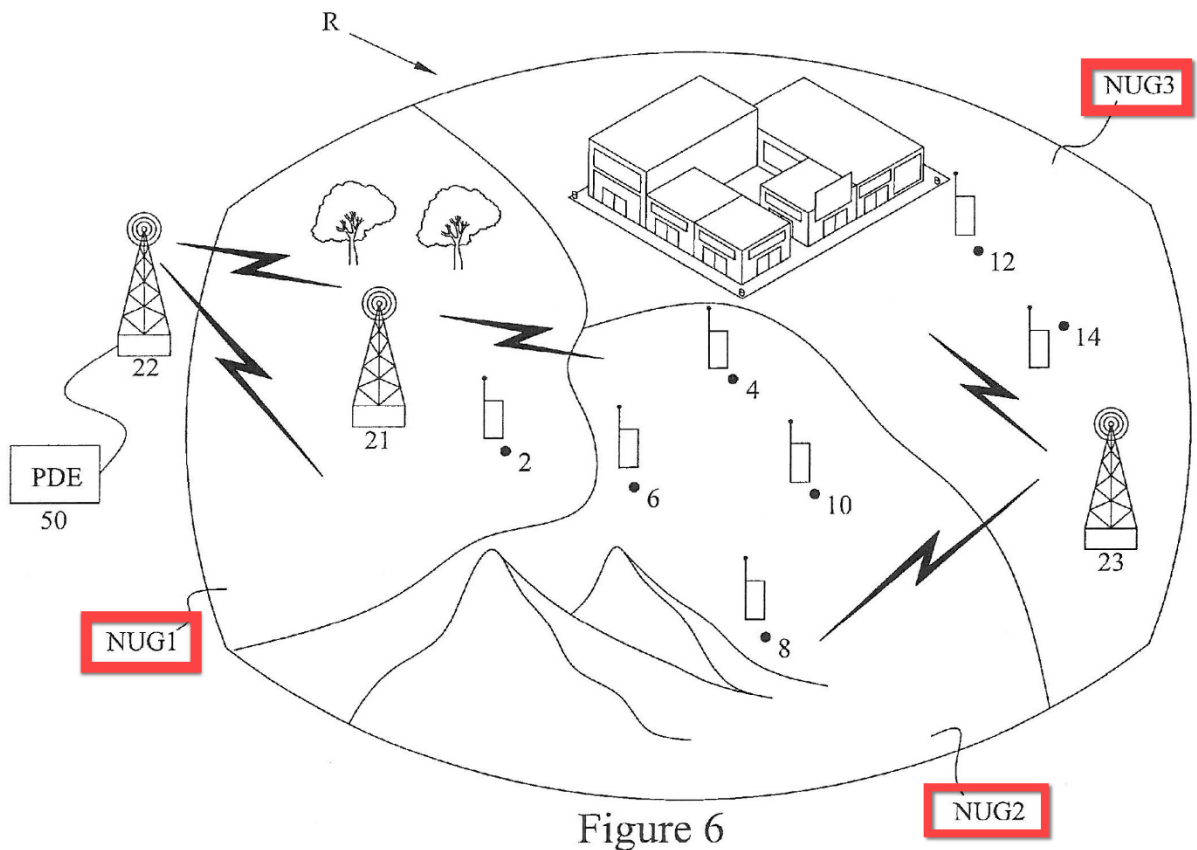


Figure 6

Id. at Fig. 6.

To generate grid points, calibration data for 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.” Ex. 2016 at Abstract, 9:34-39. The calibration data used to generate grid points “may be obtained at each of several calibration points, which may be discrete points within region R each having geographical coordinates (e.g., latitude and longitude) associated therewith” and can include information regarding, for example, signal

strength. *Id.* at 9:56-10:7; *see also* Ex. 1001 at 4:3-5. A single point—the “grid point” or “non-uniform grid point”—is then generated and includes specific coordinates but is also defined by the geographical area comprising similar calibration data. *See* Ex. 2016 at 9:34-48. For this reason, the set of grid points is well-defined and ordered from a network signal perspective, but appears irregular and non-uniform from a geographical perspective, as shown in the figure above.

Generating the claimed grid points includes determining their location (or “geographical coordinates”) and boundaries based on evaluation of the calibration data. *Id.* at 9:34-40, 12:9-14; *see also id.* at 2:51-60. Because the claimed grid points are generated from calibration data gathered in a region, they are tailored in location and shape to that region based on the available calibration data. *Id.* at 12:9-14. Additionally, generating grid points includes associating them with “characteristics” that describe the grid point—*e.g.*, information about signal strengths derived from the measured calibration data. *Id.* at 12:26-50. Thus, each grid point is a data structure that captures the necessary components to define parameters of the network signals in a region and their propagation:

For each so obtained NUG [non-uniform grid point], a variety of parameters and functions may be generated and stored to describe that NUG. These are termed the NUG characteristics. The NUG characteristics are a representation in that attempt to capture the nature and variability of the data associated with that NUG in a compact and

representative form. These characteristics may include, but are not limited to, the following: (a) an ordered list of neighboring cells; (b) functions defined on the absolute neighboring cell power levels (e.g., mean, median, k^{th} moment, cluster-mean, etc.); (c) functions defined on the relative neighboring cell power differences (e.g., mean, median, k^{th} moment, cluster-mean, etc.); (d) serving cell/sector; (e) timing advance parameter (or equivalent); (f) individual pdf (probability density function or probability distribution function) of each neighboring cell power level; (g) joint pdf of neighboring cell power levels; (h) mean and variance of neighboring cell power levels; (i) mobile device orientation (e.g., indoors, outdoors, direction mobile device is facing (e.g., North, South, etc.), tilted upwards, azimuth, elevation, etc.); (j) a compact and/or efficient representation that enables retrieval of the calibration data NMR vectors assigned to this NUG; (k) the network state as indicated in the calibration data; (l) a confidence measure indicative of the reliability of the calibration data feeding this NUG ...

Id.

The claimed grid points are new creations that define a geographical area based on the propagation of signals of opportunity in the area, and capture parameters of that propagation to enable later geolocation using observed signals. *See* Ex. 1001 at 3:59-4:2. Consequently, the “grid” of the ’494 Patent does not exist—and is not defined—until the calibration data is gathered and analyzed to generate the claimed “grid points,” each with a unique shape and geographical area

dictated by the propagation of the network signals in a region, as determined from the measured calibration data.

The '753 Patent describes how the non-uniform grid points of the '494 Patent are generated based on the evaluation of calibration data. For example, the statistical similarity of the calibration data can be evaluated to determine where a grid point should be generated, if one should be generated at all. Ex. 2016 at 10:66-11:6. The statistical similarity in the calibration data can be assessed based on clustering tests, a probability density function, the mean and variance of the data, or other functions of the calibration data. *Id.* at 10:66-11:6, 12:4-14. Once the grid points are generated, they can be used in connection with geolocating a mobile device using network signals. Ex. 1001 at 4:49-5:3.

V. SUMMARY OF THE REFERENCES ASSERTED IN THE PETITION

A. Bhattacharya

Bhattacharya describes a “process and machine for estimating the location of a wireless terminal” by “comparing the signal strength [the wireless terminal] currently observes against a map or database that correlates locations to signal strengths.” Ex. 1005 at Abstract. In the process described in Bhattacharya, an “Expected Signal-Strength Database” is first populated by overlaying “a rectangular grid of X by Y tessellated squares [] onto geographic region” with the “center of each square represent[ing] a location.” *Id.* at [0105]-[0106]. Expected signal-

strength functions are “generated based on a combination of: (i) a plurality of theoretical radio-frequency propagation models, and (ii) a plurality of empirical signal-strength measurements” for locations in the geographic region. *Id.* at [0115]-[0117].

To estimate the location of a wireless terminal, Bhattacharya describes a process of comparing signal-strength measurements against the database of expected signal strengths through a series of “computationally intense” subtasks (*i.e.*, Bhattacharya’s subtasks 1702-1705) relating to generating a “current probability distribution” and “cumulative probability distribution.” *Id.* at [0172]-[0173], [0179], [0189], [0195]. In the final step, the location of the wireless terminal is estimated “based on the normalized cumulative probability distribution.” *Id.* at [0207].

B. Spain

Spain describes a “technique for estimating the location of a wireless terminal at an unknown location in a geographic region” that is “based on the recognition that there are traits of electromagnetic signals that are dependent on topography, the receiver, the location of the transmitter, and other factors.” Ex. 1006 at Abstract. Spain describes a process of creating a “Trait-Correction Database” comprising information needed by the location server “to be aware of systemic measurement errors and to correct them,” such as the make and model of the wireless terminal. *Id.* at [0148]. Spain explains that “[f]or example, one make and model of wireless

terminal is known to erroneously measure and report the signal strength of signals by -2 dB” and therefore, if the location server “adds 2 dB to the measurements from that make and model of wireless terminal, the likelihood that location server [] would erroneously estimate the location of the wireless terminal would be reduced.” *Id.* at [0147]. Spain then describes generating probability distributions for the location of a given wireless terminal based on “comparing the measurements of traits associated with [a] wireless terminal.” *Id.* at [0181], [0208]-[0214].

As shown below, Spain also describes partitioning a “geographic region 220” into different locations based on a number of factors such as “natural and man-made physical attributes” of the region, “legal laws governing” the region, and “patterns of the location and movement of people and vehicles” within the region:

[0086] In accordance with the illustrative embodiment, the boundaries of each location are based, at least in part, on:

[0087] i. natural and man-made physical attributes of geographic region **220** (e.g., buildings, sidewalks, roads, tunnels, bridges, hills, walls, water, cliffs, rivers, etc.),

[0088] ii. legal laws governing geographic region **220** (e.g., laws that pertain to the location and movement of people and vehicles, etc.),

[0089] iii. theoretical predictions and empirical data regarding the location and movement of individuals and groups of people and vehicles in geographic region **220**,

[0090] iv. the desired accuracy of the estimates made by location server **214**, and

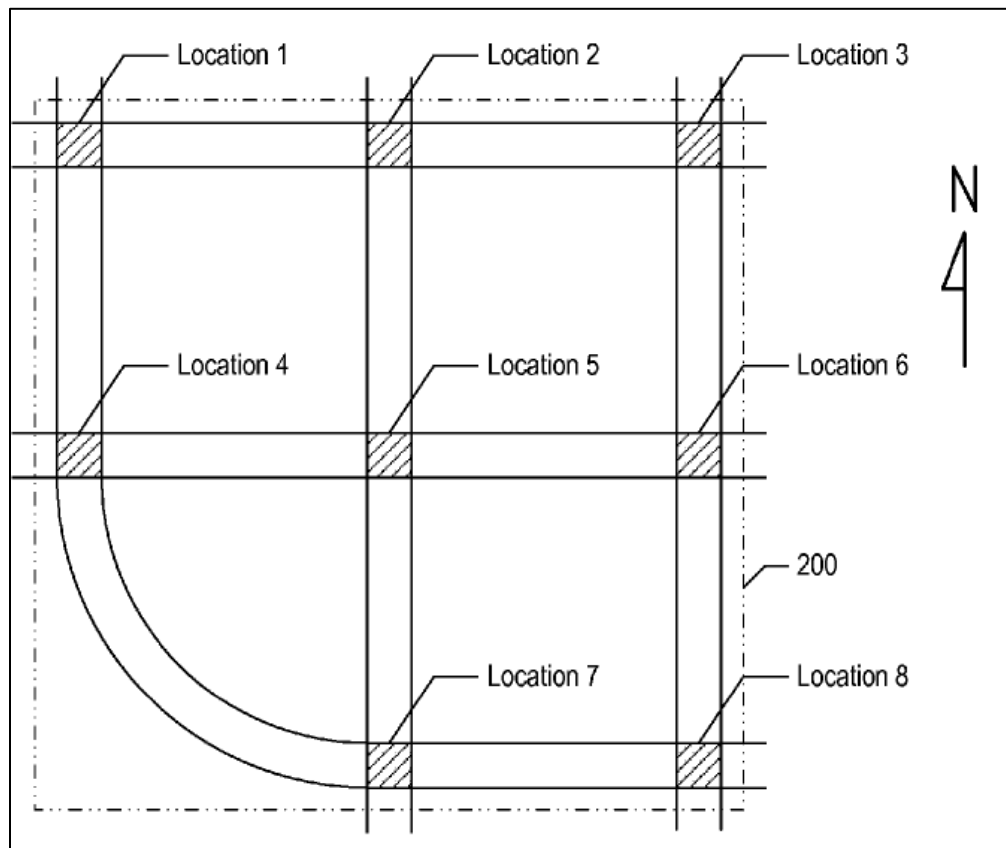
[0091] v. patterns of the location and movement of people and vehicles within geographic region **220**,

[0092] vi. the calendrical time T, and

[0093] vii. the environmental conditions N,

Id. at [0072], [0086]-[0093]; *see also id.* at [0094]-[0099].

Thus, the partitioning in Spain is not based on calibration data such as measured strengths of network signals. Rather, as is apparent from this disclosure, the partitioning is based on environmental conditions that are independent of any calibration data. This is consistent with the partitioning merely being an overlay on a geographic region independent of any calibration data, as shown in Spain's figures:



Id. at Fig. 6c; *see also id.* at Figs. 6a, 6b, 6d-6k.

Spain also emphasizes that the partitioning is a function of the desired accuracy and “computational burden,” further demonstrating that the partitioning is also based on factors determined by the operator of the system, but not based on measured calibration data. *Id.* at [0094]-[0097].

C. Meunier

Meunier is directed to a specific mobile device that includes a motion detector, a memory, a location detection module, and a location correction module. Ex. 1007 at [0006]. The location correction module applies a statistical correction to the

measured wireless signal strength determined by the location detection module when the motion detector detects that the mobile device is moving less than a threshold amount. *Id.* The mobile device, according to another aspect of the invention, includes an orientation detector for determining orientation of the mobile device, which can aid in determining the location of the mobile device. *Id.* at [0009]. Motion and orientation detectors that are part of a mobile device are used to avoid a time consuming calibration process and to help predict future locations based on current movement and direction. *Id.* at [0019]-[0020].

VI. LEVEL OF ORDINARY SKILL IN THE ART

Patent Owner adopts Petitioner's definition of a person of ordinary skill in the art ("POSITA") for the purposes of this Preliminary Response. *See* Pet. at 6 n.2 (citing Ex. 1003 ¶ 8). Patent Owner reserves the right to present arguments on the definition should the Petition be instituted.

VII. CLAIM CONSTRUCTION

Patent Owner does not dispute Petitioner's statement on claim construction for the purposes of this Preliminary Response. Patent Owner reserves the right to present arguments on the constructions should the Petition be instituted.

**VIII. PETITIONER FAILS TO SHOW A REASONABLE LIKELIHOOD
OF PREVAILING IN ITS CHALLENGE TO CLAIM 4**

To the extent the Board considers the merits of the Petition, the Petition does not demonstrate that the combination of Bhattacharya and Spain renders obvious claim 4 of the '494 Patent.¹⁰

A. Petitioner Fails to Show that Claim 4 is Rendered Obvious by the Combination of Bhattacharya and Spain

Claim 4 of the '494 Patent, which depends from claim 1, further recites “wherein said database comprises previously-gathered calibration data for one or more *non-uniform grid points* within said region.” Ex. 1001 at cl. 4 (emphasis added). Because, as explained below, neither Bhattacharya nor Spain has any

¹⁰ Of the challenged claims, only the district court’s § 101 ruling as to claim 4 of the '494 Patent is on appeal to the Federal Circuit. *See supra* § III.F. Thus, for the purposes of this Preliminary Response, Patent Owner discusses the merits only as to claim 4, which Petitioner challenges in Ground 1B based on the combination of Bhattacharya and Spain. Additionally, Petitioner’s argument for claim 4 references the argument for claim 3 which also recites “non-uniform grid points.” Pet. at 63 (citing “§IV.B.4”—*i.e.*, Pet. at 57-63). Thus, in responding to Petitioner’s arguments for claim 4, Patent Owner also cites to Petitioner’s statements regarding “non-uniform grid points” made in connection with claim 3.

teaching or suggestion of this limitation, Petitioner fails to show that this combination renders obvious claim 4 of the '494 Patent.¹¹

As further explained above in Section IV, the district court concluded that “grid point,” as used in the '494 Patent, specifically refers to “a point associated with representative calibration data for an area” that is *generated based on analysis of calibration data*. Ex. 2012 at 20; *see also id.* at 19 (district court explaining that gathering and analyzing calibration data is “what *must be done* to arrive at a grid point or set of grid points” (emphasis in original)). The district court recognized in its *Markman* order that the term “grid point” in the '494 Patent has the same meaning as it does in the related '753 Patent (*id.* at 18-20), which 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.” Ex. 2016 at 2:43-50. With respect to these “non-uniform grid points,” the '494 Patent further explains that “a non-uniform grid point (NUG) may represent the signal characteristics and/or calibration data over a given region.” Ex. 1001 at 3:59-61.

¹¹ Petitioner does not contend that Bhattacharya or Meunier discloses this limitation. Instead, Petitioner relies solely on Spain as purportedly disclosing this limitation as part of the “Bhattacharya-Spain” combination. Pet. at 58-61, 63.

Petitioner points to Spain's disclosure of "partitioning a region 220" as purportedly teaching this limitation, corresponding the partitioned locations to "one or more non-uniform grid points within said region." Pet. at 58-61 (citing Ex. 1006 at [0076]-[0082], [0099]). Petitioner effectively contends that any locations with different shapes and sizes are non-uniform grid points but this is contrary to the teachings in the '494 Patent (and its family members) and the district court's construction of "grid point" which Petitioner proposed for this proceeding. The partitioned locations of Spain are fundamentally different from the non-uniform grid points of the '494 Patent because they are not based on analysis of calibration data. Instead, the partitioned locations of Spain are determined independently of any measured calibration data. Spain makes this clear in several ways.

First, Spain explains that "the boundaries of each location are based, at least in part, on" several factors that are *not* calibration data.¹² For example, Spain states the partitioning is based on "natural and man-made physical attributes of geographic

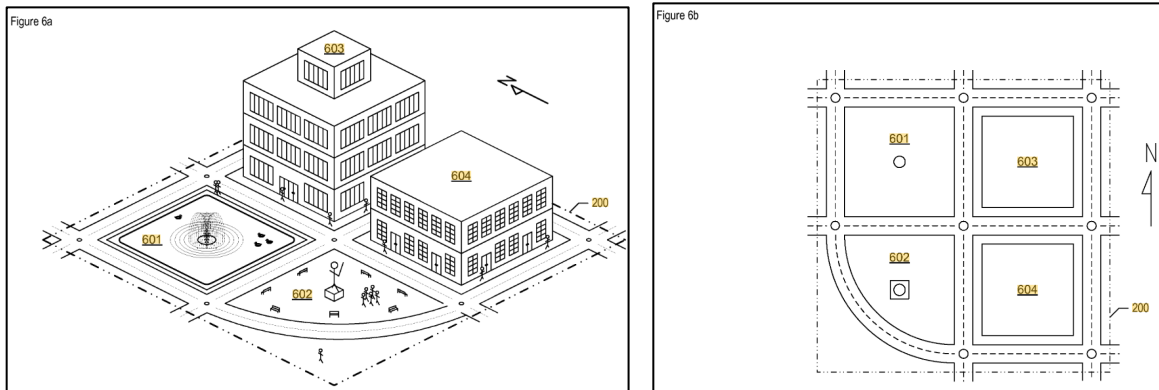
¹² The district court construed "calibration data" as "modified or unmodified network measurement data associated with a geographic location" and Petitioner proposes that same construction for this proceeding. Pet. at 2-3. Thus, as Petitioner recognizes, "calibration data" as used in the '494 Patent must comprise "network measurement data," such as the strengths (or other measured properties) of network signals.

region 220,” “legal laws governing geographic region 220,” “data regarding the location and movement of individuals ... and vehicles in geographic region 220,” and other similar factors. Ex. 1006 at [0086]-[0093]. None of these factors used to partition a region into locations are network measurement data, and thus they are not calibration data.

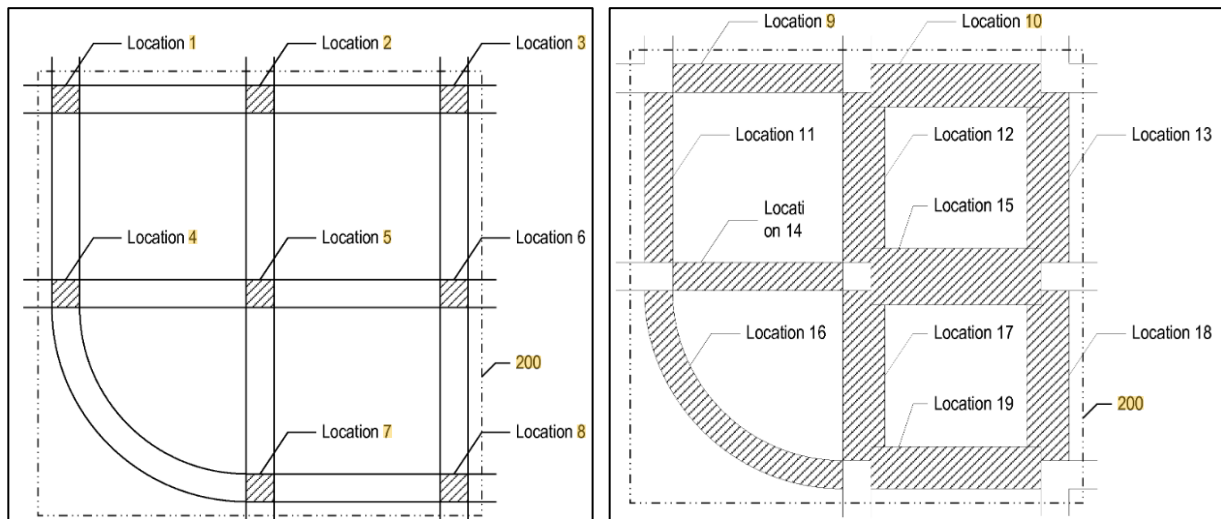
Beyond these types of factors, Spain also teaches that the partitioning is based on considerations of how the location system operates. Considerations of accuracy and complexity help determine how the region is partitioned into locations because “smaller location sizes” result in higher accuracy and a greater number of locations results in a greater “computational burden.” *Id.* at [0094]-[0097]. Thus, Spain teaches that the operator’s desired accuracy level and tolerance level for computational complexity are also used to partition a region into locations. These considerations of how the system operates are also not calibration data. Petitioner identifies nothing in Spain that teaches partitioning a region into locations based on any form of calibration data, or analysis of such data.

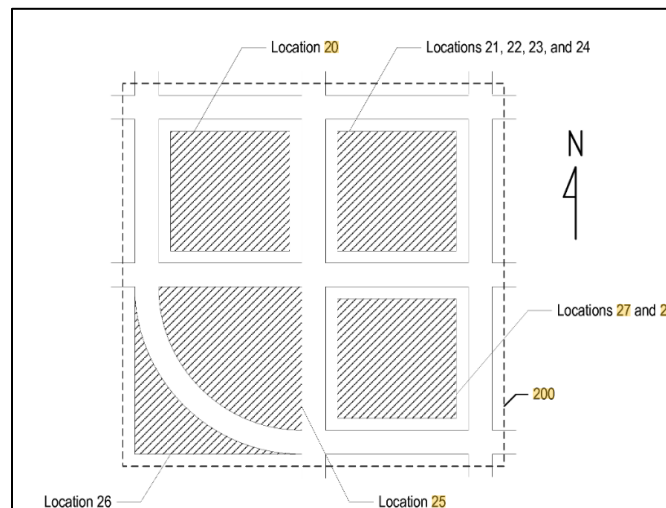
Second, the figures in Spain show that the partitioning is merely an overlay on a geographic region that is independent of any calibration data. Figures 6a-6k “depict geographic regions and their deconstruction into a plurality of locations.” Ex. 1006 at [0020]. Petitioner relies on these figures as purportedly depicting non-uniform grid points. *See* Pet. at 59-60 (citing. Ex. 1006 at Figs. 6a, 6e). These figures,

however, further demonstrate that the partitioning is not based on an analysis of calibration data. For example, Figures 6c-6e show how the same region depicted in Figures 6a and 6b can be partitioned into a number of different locations.



(region depicted in Figs. 6a and 6b)



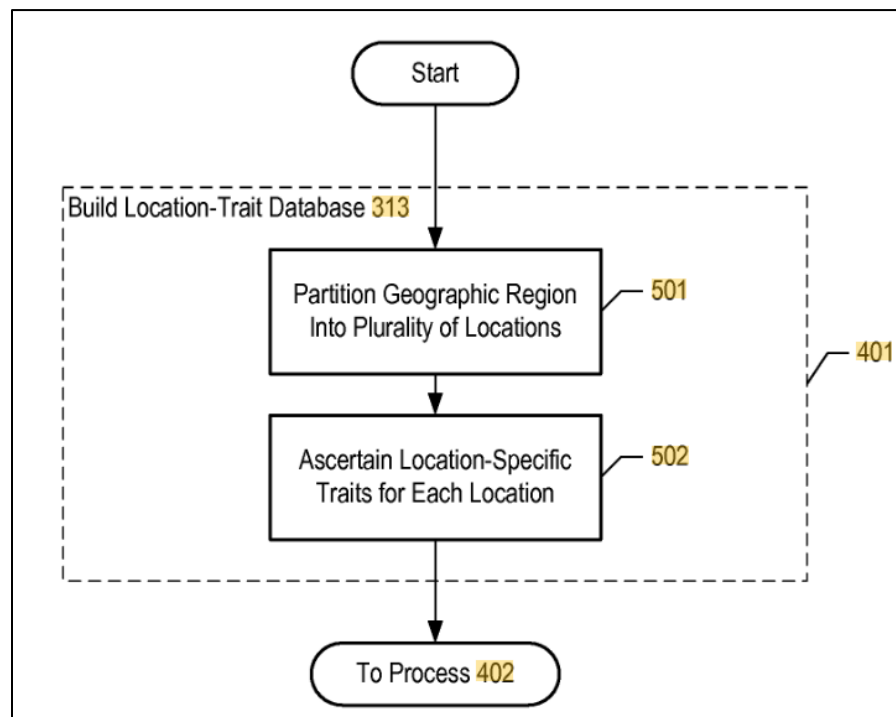


(partitioning depicted in Figs. 6c-6e)

Spain explains that these figures show that “eight road intersections are partitioned into Locations 1 through 8” (Fig. 6c), “the street sections and their adjacent sidewalks up to the edge of [the] buildings ... are partitioned into Locations 9 through 19” (Fig. 6d), and various other parts of the region such as the “water fountain,” “park,” “and each floor of [a] building” are partitioned into additional locations (Fig. 6d). Ex. 1006 at [0098]-[0099]. Thus, Spain’s partitioning is shown and described as merely assigning location identifiers to different physical attributes or characteristics of a region (*e.g.*, streets), amounting to no more than an overlay of identifiers onto a region. There is no analysis of calibration data that occurs to assign these identifiers. This is consistent with Spain’s teaching, discussed above, of partitioning a region into locations based on, *e.g.*, “natural and man-made physical attributes” rather than based on measured network signal data. *Id.* at [0086]-[0093].

Third, the flowchart in Figure 5 of Spain confirms that the partitioning is not based on analysis of calibration data, and thus the partitioned locations are not non-uniform grid points. Figure 5, reproduced below, “depicts a flowchart of the salient processes performed in accordance with ... building Location-Trait Database 313.”

Ex. 1006 at [0019], Fig. 5.



As seen in the figure, the partitioning of a geographic region into different locations occurs *before* location-specific “traits” are ascertained for each location. These location-specific traits may include “traits of the radio frequency spectrum and of individual signals” such as “expected pathloss of all of the signals receivable by wireless terminal 201 when wireless terminal 201 is at [a] location” and “the expected received signal strength of all of the signals transmitted by wireless

terminal 201 when wireless terminal 201 is in [a] location.” Ex. 1006 at [0073], [0102]-[0119]. Even if these traits constitute calibration data, Spain teaches that the traits are ascertained *after* the partitioning has already occurred. *Id.* at Fig. 5. This confirms that the partitioning taught by Spain is not based on any analysis of these traits (or anything else that could constitute calibration data).

For these reasons, Spain amply demonstrates a key distinction between its partitioned locations and the non-uniform grid points of the ’494 Patent, which are generated based on analysis of calibration data. Therefore, Petitioner’s assertion that Spain’s partitioned locations are a disclosure of “one or more non-uniform grid points within said region” is incorrect and should be rejected.

Moreover, Petitioner fails to show how Spain satisfies the district court’s construction of “grid point” requiring it to be associated with “representative calibration data for an area.” Indeed, Petitioner does not even attempt to address the “representative calibration data” part of the “grid point” construction. For example, Petitioner does not explain how Spain teaches anything about “representative calibration data,” what it means for calibration data to be “representative,” how to evaluate whether calibration data is “representative,” or anything else that could plausibly satisfy this part of the construction. *See generally* Pet. at 58-61, 63.

Notably, the district court—which adopted the construction that Petitioner proposed here—explained that “representative calibration data” in the construction

reflects that “the defining characteristic of a NUG region ... is that the data points within an area are all ‘statistically very similar’ such that each of the grid points within the NUG region can represent the overall NUG.” Ex. 2012 at 20. Yet, Petitioner does not point to anything in Spain teaching evaluating the statistical similarity, or any other commonality, in the calibration data. Petitioner improperly disregards the “representative calibration data” portion of the construction, which is a fatal flaw in its argument. Accordingly, Petitioner fails to show that the Bhattacharya-Spain combination renders obvious claim 4 of the ’494 Patent.

IX. CONCLUSION

Petitioner fails to show that institution is warranted. As explained above, institution would require an inefficient use of the Board’s resources. Petitioner asks the Board to redo work already done by the Office based on references that were considered during prosecution of the ’494 Patent. Moreover, a district court has already ruled that the ’494 Patent claims are unpatentable under § 101, and the Petition falls far short of presenting a “compelling unpatentability challenge” that would warrant proceeding despite that ruling. And Patent Owner has only appealed the district court’s ruling as to one of the twenty two claims challenged here.

Even if the Board reaches the merits under the lower “reasonable likelihood” standard, denial is still warranted. Petitioner fails to demonstrate that the asserted prior art teaches every limitation of the challenged claims. Petitioner relies on

superficial arguments that fail to satisfy the claim constructions that Petitioner itself proposed. For the foregoing reasons, Patent Owner respectfully requests that the Board deny institution.

Dated: February 14, 2024

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

The undersigned certifies that this brief complies with the type-volume limitations of 37 CFR § 42.24(a)(1)(i). This brief contains 11,336 words as calculated by the “Word Count” feature of Microsoft Word, the word processing program used to create it. The undersigned further certifies that this brief complies with the typeface requirements of 37 CFR § 42.6(a)(2)(ii) and typestyle requirements of 37 CFR § 42.6(a)(2)(iii). This brief has been prepared in a proportionally spaced typeface using Microsoft Word in Times New Roman 14 point font.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Patent Owner's Preliminary Response, was served on February 14, 2024 *via* email directed to counsel of record for the Petitioner at the following address of record as listed on P-TACTS:

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