

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.

Petitioner,

v.

GEOSCOPE TECHNOLOGIES PTE. LTD,

Patent Owner

Case IPR2024-00031
U.S. Patent No. 8,400,358

PATENT OWNER'S SUR-REPLY

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. CLAIM CONSTRUCTION.....	2
A. The '379 Provisional Is Part Of The Specification.....	3
B. The Intrinsic Record Supports PO's Construction	9
C. Petitioner Mischaracterizes The '379 Provisional	12
D. PO Has Not Argued Disavowal.....	16
III. THE PRIOR ART DOES NOT DISCLOSE OR SUGGEST [NON-UNIFORM] GRID POINTS	17
A. Spain Does Not Teach NUGs Under PO's Alternate Construction.....	19
B. Spain Does Not Teach NUGs Under The District Court Construction.....	19
IV. LEVEL OF ORDINARY SKILL.....	20
A. The Reply Fails To Rebut the POR.....	20
B. Petitioner's POSITA Definition Is Deficient	22
C. Geoscope's POSITA Definition.....	24
D. The Sundaresan Declaration Is Entitled To No Weight.....	24
V. CONCLUSION	26

TABLE OF AUTHORITIES

	Page(s)
CASES	
<i>Finjan LLC v. ESET, LLC</i> , 51 F.4th 1377 (Fed. Cir. 2022)	8, 9
<i>Harari v. Lee</i> , 656 F.3d 1331 (Fed. Cir. 2011)	3
<i>Medrad, Inc. v. MRI Devices Corp.</i> , 401 F.3d 1313 (Fed.Cir.2005)	17
<i>Modine Mfg. Co. v. U.S. Int'l Trade Comm'n</i> , 75 F.3d 1545 (Fed. Cir. 1996)	8
<i>MPHJ Tech. Invs. v. Ricoh Ams. Corp.</i> , 847 F.3d 1363 (Fed. Cir. 2017)	5, 6, 7
<i>Netflix, Inc. v. Avago Techs. Int'l Sales Pte. Ltd.</i> , No. 2022-1936, 2024 WL 3507601 (Fed. Cir. July 23, 2024)	3
<i>Okajima v. Bourdeau</i> , 261 F.3d 1350 (Fed. Cir. 2001)	21
<i>Pace LLC v Ford Motor Company</i> , 881 F.3d 894 (Fed. Cir. 2018)	3
<i>Regeneron Pharmaceuticals, Inc. v. Mylan Pharmaceuticals Inc.</i> , 2023 WL 11891335 (N.D.W.V. Aug. 19, 2023)	6
<i>Samsung Elecs. Co., Ltd. v. Elm 3DS Innovations, LLC</i> , 925 F.3d 1373 (Fed. Cir. 2019)	6, 9
<i>Trustees of Columbia Univ. in City of New York v. Symantec Corp.</i> , 811 F.3d 1359 (Fed. Cir. 2016)	3, 4, 9
<i>X2Y Attenuators, LLC v. Int'l Trade Comm'n</i> , 757 F.3d 1358 (Fed. Cir. 2014)	3

AGENCY DECISIONS

Xerox Corp. et al. v. Bytemark, Inc.,
IPR2022-00624, Paper 12 (PTAB Director Review Decision, Feb. 10,
2023) 25

FEDERAL RULES

Fed. R. Evid. 702 25

REGULATIONS

37 C.F.R. §42.104 9
37 C.F.R. §42.65 25

PATENT PROCEDURES

MPEP 2163.07 3

Exhibit No.	Patent Owner's Exhibits
2001	Declaration of Saunak K. Desai in Support of Patent Owner's Motion For <i>Pro Hac Vice</i> 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)
2011	Order dated June 26, 2023, <i>Geoscope Technologies Pte. Ltd. v. Apple Inc.</i> , Civ. Action No. 1:22-cv-01373 (EDVA)
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) ("Markman Order")
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 ("753 Patent")
2017	U.S. Patent No. 9,097,784 ("784 Patent")

2018	U.S. Patent No. 7,561,104 (“’104 Patent)
2019	Declaration of Mr. Mark Alan Sturza
2020	CV of Mr. Mark Alan Sturza
2021	Deposition Transcript of Dr. Karthikeyan Sundaresan for IPR2024-00031, IPR2024-00032, and IPR2024-00255
2022	U.S. Pat. No. 8,400,358 disclaimer
2023	Business News Daily, “Location-Based Services: Definitions and Examples,” Max Friedman, Oct. 27, 2023 (last accessed July 28, 2024) (“Business News Daily”).
2024	Dictionary.com, “Geolocation Definition & Meaning,” <i>available at</i> www.dictionary.com/browse/geolocation (last accessed July 16, 2024) (“Dictionary.com”).
2025	“Geolocation: What it is, How it Works, Examples”, January 25, 2021, <i>available at</i> https://www.investopedia.com/terms/g/geolocation.asp ; last accessed July 16, 2024 (“Investopedia”).
2026	“How Does GPS Work? 6 Things You Didn’t Know”, Calum McClelland, March 30, 2017, <i>available at</i> https://www.leverage.com/blogpost/how-does-gps-work-6-things-you-didnt-know , last accessed Aug. 7, 2024 (“Leverage”)
2027	U.S. Pat. Appl. Publ. No. 2003/0064735 (“Spain ’735”)
2028	U.S. Pat. No. 7,706,811 (“Shkedi”)
2029	Heikki Laitinen, Jaakko Lähteenmäki, Tero Nordström, “Database Correlation Method for GSM Location,” VTT Information Technology, IEEE, 2001. (“Laitinen”)
2030	U.S. Prov. Appl. No. 60/899,379 (“’379 Provisional”)
2031	U.S. Pat. No. 8,175,620 (“’620 Patent”)
2032	Applus, “Drive Test and Mobile Network Optimization,” <i>Available at</i> https://www.applus.com/global/en/what-we-do/service-sheet/drive-test-and-mobile-network-optimisation ; last accessed July 23, 2024 (“Applus”)
2033	Solomon Ndungu and Erica Mixon, “GSM (Global System for Mobile communication)”, <i>available at</i> https://www.techtarget.com/searchmobilecomputing/definition/GSM ; last accessed July 23, 2024 (“Techtarget”).

2034	<i>Excerpts from Telecom ABC, available at https://www.telecomabc.com/i/is-41.html; last accessed July 23, 2024 (“Telecom ABC”).</i>
2035	<i>Reserved</i>
2036	Deposition Transcript of Dr. Karthikeyan Sundaresan for IPR2024-00259

I. INTRODUCTION

The Reply never squarely addresses the meaning of “[non-uniform] grid points.” Because Petitioner and its expert simply adopt the conclusions of the district court and DI without meaningful analysis, its arguments are scattershot and conflict with one another. For example, Petitioner concedes PO is not arguing disavowal but then attempts to frame PO’s claim construction arguments as disavow. At the same time, Petitioner asks the Board to ignore most of the intrinsic record, including the ’379 Provisional, the related ’753 and ’784 Patents, and large parts of the ’358 Patent, and instead base a construction entirely on two statements from the ’358 Patent.

Petitioner appears to rely on the district court’s claim construction but it avoids addressing the Markman Order discussion that support PO’s position. Petitioner adopts the unbriefed preliminary construction of “non-uniform” used by the DI, but in so doing, contradicts the district court construction for “grid points” that requires calibration data to be “representative” of the NUG area. Similarly, Petitioner partially quotes opinions and expert testimony out of context in hopes of inviting an incorrect decision.

PO, on the other hand, advances an interpretation of “[non-uniform] grid point” that is consistent across the entire intrinsic record as well as consistent with

the Markman Order and supporting briefing. Together, the '358 Patent, '379 Provisional, and related Geoscope Patents clearly support PO's interpretation.

The Reply does not dispute that Spain does not teach NUGs under PO's interpretation. Instead, Petitioner appears to rely solely on the unbriefed preliminary construction used in the DI for "non-uniform" in support of its incorrect argument that Spain teaches NUGs. As discussed below, that construction is incorrect.

The Reply's arguments relating to its expert report suffer from similar issues. They never dispute that its expert's opinions related to level of ordinary skill and claim construction are not the expert's own, that the declaration does not comply with the Federal Rules of Evidence, or that such arguments were required to be present in the Petition and not incorporated by reference. Accordingly, Petitioner has failed to carry its burden and the Board should find all challenged claims not unpatentable.

II. CLAIM CONSTRUCTION

Petitioner purports to adopt the district court construction of "grid point" and the DI's unbriefed preliminary construction of "non-uniform." But the Reply does not analyze the complete intrinsic record, and instead argues the Board should ignore large portions of it.

A. The '379 Provisional Is Part Of The Specification

Petitioner asks the Board not to consider the '379 Provisional as part of the intrinsic record because it is not “present in the specification” of the '358 Patent. Reply, 1, 10-13. Petitioner’s position is incorrect. The first paragraph of the '358 patent expressly identifies the '379 Provisional (and the parent '104 Patent) and states “each of which are hereby incorporated by reference in their entirety.” POR, 10, n.1, 23; EX1001 ['358 Patent], 1:6-14. *See also* EX2016 ['753 Patent], 1:8-11; EX2017 ['784 Patent], 1:6-13; EX2018 ['104 Patent], 1:6-9; (494 patent). Such unambiguous incorporation by reference renders the document incorporated into the specification as if it were part of the specification. *Trustees of Columbia Univ. in City of New York v. Symantec Corp.*, 811 F.3d 1359, 1366 (Fed. Cir. 2016) (“provisional applications incorporated by reference are ‘effectively part of the’ specification as though it was ‘explicitly contained therein.’”). *See also Pace LLC v. Ford Motor Company*, 881 F.3d 894, 907 (Fed. Cir. 2018); *Harari v. Lee*, 656 F.3d 1331, 1335 (Fed. Cir. 2011); *Netflix, Inc. v. Avago Techs. Int'l Sales Pte. Ltd.*, No. 2022-1936, 2024 WL 3507601, at *7 (Fed. Cir. July 23, 2024); X2Y *Attenuators, LLC v. Int'l Trade Comm'n*, 757 F.3d 1358, 1362–63 (Fed. Cir. 2014); MPEP 2163.07(b). Petitioner’s attempts to distinguish *Columbia* and *Advanced*

Display ignore the critical language cited above that is fatal to Petitioner's position. Reply, 10-11. The '379 Provisional is "effectively part of the specification" here.

Nothing in *Columbia* supports Petitioner's statement that the relevance of the provisional application in *Columbia* is "premised on its presence in the specification." Reply, 11. Instead, *Columbia* accords the provisional the same weight as the rest of the specification because the provisional is "effectively part of" the specification. *Columbia*, 811 F.3d at 1365-66.

Petitioner argues that "the intrinsic record does not include any clear and unmistakable disclaimer, disavowal, or redefinition." Reply, 11. There are a number of problems with Petitioner's argument. First, the POR never argues disclaimer, disavowal, or definition. Reply, 11, n3.

Second, Petitioner's position is premised on the idea that the '379 Provisional contradicts other portions of the specification. Reply, 11-12. But, as discussed in §II.B below, Petitioner's alleged contradictions are easily reconciled with the rest of the intrinsic record.

Third, Petitioner's invitation to ignore portions of the '379 Provisional that do not appear verbatim in the '358 Patent is wrong. Reply, 11-12. Petitioner's circular logic would render incorporation by reference meaningless. There would

be no purpose to incorporation by reference if applicants must still copy the incorporated material verbatim into the incorporating patent.

Petitioner speculates that “had [descriptions in the ’379 Provisional] been ‘fundamental,’ the examiner would have asserted that the claims lack adequate written description.” Reply, 11-12. “Fundamental” is a term from the ’379 Provisional, not a characterization by PO. EX2030 [’379 Provisional], 6. The examiner, in allowing the claims, obviously disagreed that the claims lack written description. And the Markman Order independently made similar statements (“the defining characteristic of a NUG region...”) without reference to the ’379 Provisional. EX1054 [Markman Order], 19-20. These sources contradict Petitioner’s unsupported hindsight speculation.

Petitioner cites *MPHJ Tech. Invs. v. Ricoh Ams. Corp.*, 847 F.3d 1363 (Fed. Cir. 2017) in an attempt to evade the ’379 Provisional. Reply, 12-13. But Petitioner misrepresents *MPHJ*’s applicability here. First, the *MPHJ* court acknowledged that provisional applications contribute to claim construction and analyzed the provisional as part of the intrinsic record. *Id.*, 1369.

Second, in *MPHJ*, the patent on appeal incorporated *seven* different provisionals and *nine* different nonprovisional applications. *See* U.S. Pat. No. 8,488,173, 1:7-37. The court’s concern was that the resulting specification was no

longer consistent with the provisional application appellant relied upon. That is, as correctly explained by a subsequent court distinguishing *MPHJ*, “the provisional application [in *MPHJ*] discussed a one step operation; the later-filed application later converted it into a one step *option*.” *Regeneron Pharmaceuticals, Inc. v. Mylan Pharmaceuticals Inc.*, 2023 WL 11891335 (N.D.W.V. Aug. 19, 2023) (citing *MPHJ*, 847 F.3d at 1368-69) (emphasis in original).

Here, unlike *MPHJ*, the meaning of “[non-uniform] grid point” does not change between the ’379 Provisional and the ’358 Patent. The Geoscope patents rely on a single provisional (the ’379 Provisional) that serves as a foundational document for the various Geoscope patents. POR, 8-9.

Third, Petitioner’s argument that disclosure in parent provisional applications should be ignored if it is not present verbatim in the child would lead to the term “grid point” being construed differently across each Geoscope patent. Thus, under Petitioner’s theory, since the district court relied on the specifications of the ’753 and ’784 Patents (which are different than the ’358 Patent) (EX1054 [Markman Order], 19-20), the district court’s claim construction would need revisited independently for each Geoscope patent. This is not the law. *Samsung Elecs. Co., Ltd. v. Elm 3DS Innovations, LLC*, 925 F.3d 1373, 1378 (Fed. Cir. 2019) (“Where multiple patents derive from the same parent application and share

many common terms, we must interpret the claims consistently across all asserted patents.”).

Fourth, as Judge O’Malley’s partial dissent in *MPHJ* points out, the provisional was incorporated into the ’173 Patent and forms part of the specification. *MPHJ*, 847 F.3d at 1376. Thus, the real dispute in *MPHJ* was whether a statement in the provisional rose to the level of disavowal of claim scope over broader embodiments described later in the specification. *Id.* PO is not arguing any disavowal.

Fifth, Petitioner’s reliance on *MPHJ* is based on the incorrect assumption that the term “non-uniform grid point” has an ordinary meaning outside of the context of the intrinsic record. This is incorrect. “Non-uniform grid point” is not a term of art but instead was coined for purposes of the ’379 Provisional and the patents claiming priority to the ’379 Provisional. The ’379 Provisional introduces the term “NUG,” clearly explains what NUGs are, and then discloses fifteen exemplary inventions relating to NUGs and location estimation. EX2030 [’379 Provisional], 5-35. The various Geoscope patents each incorporate the ’379 Provisional by reference and then claim various aspects of the inventions described in the ’379 Provisional (such as NUGs). Thus, the term “[non-uniform] grid point”

can only be understood through review of the entire intrinsic record. EX1054
[Markman Order], 19-20.

Petitioner cites *Finjan* and *Modine* as allegedly supporting its position that documents expressly incorporated by reference into a patent do not form part of the intrinsic record unless they are reprinted verbatim in the patent. Reply, 13. Neither is on point. In *Finjan LLC v. ESET, LLC*, 51 F.4th 1377, 1382-83 (Fed. Cir. 2022), the Federal Circuit held that “two [allegedly competing] definitions can exist in harmony within the patent family.” Thus, *Finjan* stands for the idea that the intrinsic record should be interpreted to create consistency across a patent family, not (as Petitioner urges) to create inconsistency. Here, the ’379 Provisional’s explanation for how NUGs are generated “exist[s] in harmony” with the ’358 Patent and the other Geoscope patents. *Infra*, §II.B.

Modine is discussing a situation where the patent-in-suit directly contradicts the unrelated patent incorporated by reference. *Modine Mfg. Co. v. U.S. Int’l Trade Comm’n*, 75 F.3d 1545, 1553 (Fed. Cir. 1996) (overruled on other grounds). Here, the ’358 Patent is consistent with the ’379 Provisional’s detailed explanation of how NUGs are formed. *Infra*, §II.C.

B. The Intrinsic Record Supports PO's Construction

The Reply argues that Geoscope's construction "is not justified by the specification." Reply, 7-8. But that section of the Reply does not address the '379 Provisional, which is "part of the specification." *Columbia*, 811 F.3d at 1366. *See supra*, §II.A. *See Finjan*, 51 F.4th at 1382 ("Claims must be read in light of the specification. [] That includes any patents incorporated by reference."). Nor does the Reply discuss the related '753 or '784 Patents. *Elm 3DS*, 925 F.3d at 1378. Indeed, the Petition does not cite the '379 Provisional, '753 Patent or '784 Patent for any substantive analysis, including claim construction. 37 C.F.R. §42.104(b)(3) ("the petition must set forth ... how the challenged claim is to be construed."). Petitioner simply fails to give any weight to the bulk of the intrinsic record.

Petitioner argues that the '358 Patent at 4:1-14 discloses "two examples of factors in 'deciding the boundaries of a NUG'" that do not "necessarily require [] evaluation of calibration data." Reply, 7. These two alleged examples are "geographical areas" and "varying concentration of MSs." *Id.* Petitioner's interpretation requires a narrow interpretation of "geographical areas" and "varying concentration of MSs" as forming NUGs by themselves to exclude evaluating calibration data. But nothing in this paragraph contradicts the intrinsic record's

teaching that NUGs are formed through evaluation of calibration data. POR, 12-15, 26-31.

Specifically, the '358 Patent at 4:8-14 says “geographical areas” and “varying concentrations of MSs” can be “a factor” in forming NUGs. It does not say that they can be the only factors, or that the evaluation of calibration data vectors—which is “fundamental to the method” of NUG generation—is not still needed. EX2030 ['379 Provisional], 6; *see also* EX1054 [Markman Order], 20 (“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.”); EX2016 ['753 Patent], 10:55-59, 10:66-11:6. Nothing in the paragraph indicates these examples exclude the fundamental evaluation of calibration data.

The surrounding text also does not support Petitioner’s limiting interpretation. The '358 Patent at 3:57-67 explains that “[t]he NUGs represent an area of collected calibration data” (*id.*, 3:63-64) and that NUGs can “represent the signal characteristics and/or calibration data over a given region.” *Id.*, 3:57-59; *see also* EX1054 [Markman Order], 19 (citing the same quotes from the '104 Patent). If NUGs were formed solely based on geographical regions or concentration of MSs, they would not represent an area of calibration data over a given region

because the calibration data within a predefined geographic region has many different values, rendering the NUG useless for determining the location of the mobile.

The '379 Provisional explains this: “if within a few feet of the original measurement if a particular parameter was blocked (say by a large structure such as a building) that would fall out of the original cluster.” EX2030 ['379 Provisional], 7. Thus, the '379 Provisional explains that physical geography (like mountains, buildings, or roads) is a factor that impacts the values of the calibration data such that adjacent calibration points may have different values and form different NUGs.

Similarly, the concentration of MSs (mobile stations) is just one factor that may impact the formation of NUGs. Where there are more mobile stations, there is more calibration data to record and less likelihood of inaccurate or missing measurements. The '379 Provisional explains how concentration of MSs can impact NUGs. In cases where there are “very few measurements” available, the calibration points are “greatly influenced by any outlier measurements,” leading to inaccuracy. EX2030 ['379 Provisional], 7. *See, e.g.*, EX2016 ['753 Patent], 11:7-21. Again, nothing in the '358 Patent indicates NUGs may be formed based on concentration of MSs without evaluation of calibration data.

Petitioner's argument is also not consistent with the district court construction for "grid point." The Petition and Dr. Sundaresan adopted the district court's construction of "a point associated with representative calibration data for an area." Pet., 2-3, POR, 22-23; EX2021 [Sundaresan Dep. Tr.], 36:1-10. As the district court explained, calibration data is "representative" because it is "intended to reflect 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." EX1054 [Markman Order], 20. If NUGs were formed solely by reference to "geographical areas" or "concentrations of MSs" as Petitioner argues, the calibration data within the area would not be "representative" of the area.

Petitioner cites its supplemental expert declaration in support (Reply, 7-8), but the cited paragraphs simply speculate about how NUGs could be formed. EX1055, ¶¶42, 43. The intrinsic record is clear that evaluation of calibration data is fundamental to forming NUGs, and nothing at the '358 Patent at 4:8-14 contradicts this.

C. Petitioner Mischaracterizes The '379 Provisional

Petitioner argues that "Page 8 [of the '379 Provisional] confirms the inventors clearly did not limit the scope of techniques of NUG boundary

determination to only those involving the use of ‘statistical similarity.’” Reply, 9.

This is incorrect. First, PO’s proposed construction does not use the term “statistical similarity” and thereby accounts for generating NUGs based on methods of evaluating calibration data that do not involve the statistical analyses discussed in the ’379 Provisional.

Moreover, Petitioner misleadingly groups pages 5-7 of the ’379 Provisional together as describing evaluation based on “statistical similarity.” Reply, 8-9. The concept of evaluating calibration data to create NUGs is introduced at the second paragraph of page 6 (“A NUG generator could begin...”). EX2030 [’379 Provisional], 6. The next paragraph (“In any of these cases...”) introduces evaluation of calibration data and explains that “the evaluation of [calibration] data vectors is of great importance since it is fundamental to the method.” *Id.* At this point, the ’379 Provisional has not mentioned statistical similarity. Instead, it is explaining that evaluation of calibration data—alone—is fundamental to NUG generation. Only after explaining the fundamental importance of evaluating calibration data does the ’379 Provisional introduce the additional concept of statistical similarity, which it identifies as “the primary” test for evaluating calibration data. *Id.* See also EX2016 [’753 Patent], 10:66-11:6.

Petitioner's arguments regarding the '379 Provisional at 8 are also inconsistent with the surrounding text. The statement from the '379 Provisional that "we also consider the method of generating NUGs based not on statistical consistency but on other conditions ..." (EX2030 ['379 Provisional], 8 (quoted at Reply, 9)) goes on to list several examples of other types of calibration data that can be evaluated to form NUGs. These include "minimum number of unique neighbors," "minimum number of data vectors (NMRs)," "maximum and minimum NUG radius," "specific set of NCs," and "specific set of NCs with power ordering." *Id. See, e.g.,* EX2030 ['379 Provisional], 5 (providing similar examples of "calibration data."); EX2016 ['753 Patent], 9:59-10:8.

The '379 Provisional at 8 is pointing out that NUGs do not need to be generated through statistical analysis such as the "clustering tests" described at page 7. But the system still evaluates whether adjacent calibration points share similar calibration data in order to generate the NUG.

For example, when the '379 Provisional refers to a "specific set of NCs" it means that the NUG is evaluating calibration data at adjacent calibration points and if the two pieces of calibration data record the same set of NCs (neighbor cells), the points are aggregated together into a NUG. If the set of NCs is different, the two points form the root of their own NUG. There is still an evaluation to

determine whether the two sets are the same, but there is not necessarily any statistical analysis.

The '379 Provisional at 8 also states that NUGs may be generated using “the method of using statistical consistency or similarity or data clustering combined with any of these other conditions.” *Id.* The Reply argues that this statement “unambiguously confirms that techniques described in pages 5-7 of EX-2030 ... are distinct from ‘additional[]’ techniques described at page 8.” Reply, 9. But PO’s construction does not mention “statistical similarity” and the techniques described at page 8 *are* techniques for evaluating calibration data to determine the boundaries of NUGs. Further, the language of the statement once again contradicts Petitioner’s point because it indicates the statistical clustering tests can be “combined with” the evaluation techniques described at page 8. That is, the cited sentence still *requires* use of statistical clustering tests, only in combination with other forms of evaluation.

Petitioner argues that the Sturza Declaration should have addressed the '379 Provisional at 8 (Reply, 9-10), but as discussed above, doing so would have strengthened his opinions because Page 8 clearly supports PO’s position that NUG boundaries are determined from evaluation of calibration data.

Petitioner's implication that Mr. Sturza did not review the entire '379 Provisional is false. Reply, 10. Mr. Sturza's Declaration stated that he reviewed the exhibits to this IPR, including the '379 Provisional. EX2019 [Sturza Decl.], ¶22.

Further, Petitioner takes Mr. Sturza's testimony out of context. Petitioner's question was whether the '379 Provisional at 8 is cited in Mr. Sturza's declaration, to which Mr. Sturza replied "I either have to take a look at [the '379 Provisional] or I would have to go through my declaration." EX1056 [Sturza Dep. Tr.], 56:16-18. Mr. Sturza even stated "I don't know what we are referring to without looking at the [EX2030, the '379 Provisional]." *Id.*, 56:19-20. Petitioner's counsel did not provide Mr. Sturza with the '379 Provisional. Thus, when Mr. Sturza states "I didn't review the entire provisional," he is referring back to his statement that needs to review the '379 Provisional to fully answer the question. 57:14-58:15.

Accordingly, the '379 Provisional supports PO's construction.

D. PO Has Not Argued Disavowal

Petitioner repeatedly mischaracterizes PO's argument as disavowal. Reply, 1, 4, 8, 9, 11. The POR does not use the term "disavow" or any variations of the term.

The term "[non-uniform] grid point" is not a term of art that might be understood without reference to the intrinsic record. Instead it is unique to the

Geoscope Patents. Thus, it must be understood through reference to the entire intrinsic record. *Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005) (“we must look at the ordinary meaning in the context of the written description and the prosecution history.”). The POR analyzes the entire intrinsic record, as well as the district court’s claim construction order. POR, 25-38. The citations therein are consistent with one another in explaining what a NUG is. *Id.*

Petitioner’s position, on the other hand, is essentially arguing disavowal. Petitioner provides no consistent explanation of what a NUG is. Instead, Petitioner relies on the ’358 Patent’s brief statements about “geographic areas” and “varying concentrations of MSs,” presented out of context, and argues that they take precedence over the rest of the intrinsic record and the Markman Order. Reply, 7-8 (discussing ’358 Patent at 4:9-14). When read in context, however, the sentences are consistent with the rest of the intrinsic record. *Supra*, §II.B.

III. THE PRIOR ART DOES NOT DISCLOSE OR SUGGEST [NON-UNIFORM] GRID POINTS

The POR explains, with evidentiary support, why Spain does not teach NUGs under both the district court construction and PO’s alternate construction. POR, 25-38, 58-65. In particular, the boundaries of Spain’s locations are predetermined based on criteria (such as geographic features) that are not calibration data. POR, 58-65. Spain doesn’t base its locations on network

measurement data like signal strength. Instead, it relies on “natural and man-made physical attributes.” POR, 54 (*quoting* EX1006 [Spain], [0087]).

Petitioner fails to rebut the arguments made in the POR. Reply, 13-14, 22-23. Instead, the Reply relies on statements from the DI to argue PO’s position is incorrect. *Id.* But the DI was decided under a different standard and without the benefit of a full record. Statements from the DI are not a substitute for Petitioner supporting its arguments with reasoned analysis and evidentiary support.

The only other argument advanced by Petitioner is that “[t]he Petition’s application of Spain is even consistent with examples of techniques for determining NUG boundaries described within the specification.” Reply, 14. NUGs are formed by evaluating calibration data. POR, 25-38. As discussed above, the sentence of the ’358 Patent relied upon by Petitioner does not mean NUGs can be formed without evaluation calibration data. *Supra*, §II.B. Instead, it is disclosing that geographic areas can be one factor that may influence the calibration data in forming NUGs. *Id.*

Thus, Petitioner cannot meet its burden and the Board should find claim 18 not unpatentable.

A. Spain Does Not Teach NUGs Under PO's Alternate Construction

The Reply does not dispute that Spain does not teach [non-uniform] grid points under PO's alternate construction. Reply, 13-14, 22-23. To the extent that the Board agrees with PO that NUGs require evaluation of calibration data, Petitioner has presented no evidence or argument to carry its burden and the Board must find claim 18 not unpatentable.

B. Spain Does Not Teach NUGs Under The District Court Construction

The POR presented argument and evidence that the district court construction of “grid point”—consistent with PO's alternate construction—requires evaluation of calibration data to determine the boundaries of the area represented by a “grid point.” POR, 25-31. This is because under the district court's construction—“a point associated with representative calibration data for an area,”—the calibration data aggregated in the area must be “representative” of the area. *Id.* In order to determine whether calibration data is “representative” of the area, the system must evaluate adjacent calibration data to form the NUG. POR, 27-29.

The Reply does not address whether Spain teaches NUGs under PO's argument. Reply, 13-14, 22-23. Thus, to the extent that the Board agrees with the Markman order that “‘representative calibration data’ is intended to reflect 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” (EX1054 [Markman Order], 20), Petitioner has not carried its burden and the Board should find claim 18 not unpatentable.

IV. LEVEL OF ORDINARY SKILL

A. The Reply Fails To Rebut the POR

The Reply argues that the Petition’s failure to identify a level of ordinary skill is “without merit.” Reply, 15. But Petitioner does not dispute the fact that the Petition does not identify a level of ordinary skill, or that Petitioner’s counsel provided its expert with the level of ordinary skill he relied upon. Nor does the Reply dispute that the Petition improperly incorporates arguments by reference. POR, 41-42. Instead, the Reply introduces a thirty-two page supplemental declaration to inject new arguments that should have been included in the Petition. PO is prejudiced because it has no opportunity to introduce evidence in this Sur-Reply to counter Petitioner’s new positions.

Petitioner argues that “Geoscope’s identification of an alternative POSITA definitions demonstrates awareness of a level of ordinary skill sufficient to permit a comparison of the asserted prior art and the features claimed in the ’358 Patent.” Reply, 15. The Petition did not employ Geoscope’s level of ordinary skill. Instead,

it employed the lower level of ordinary skill provided by Petitioner's counsel.

EX1003 [Sundaresan Decl.], ¶8. That level of skill required no knowledge of the cellular technologies that are fundamental to understanding the patents and the prior art. POR, 44-51. Nor is it surprising the Board preliminarily adopted the level of ordinary skill proffered by Petitioner's counsel, since the issue was not disputed in the POPR.

Petitioner cites the *Okajima* case to argue that “mere disagreement with a POSITA definition does not rise to the level of ‘defects’” that is fatal to the Petition. But neither *Okajima* nor the Reply discusses the statutory and regulatory requirements for an IPR Petition. See POR, 38-39. Nor is *Okajima* discussing an instance where an expert uses a level of ordinary skill provided by attorneys. Instead, *Okajima* is discussing whether the failure of a factfinder to expressly include a finding on level of ordinary skill is reversible error on appeal. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Indeed, the parties in *Okajima* appear to have agreed on the level of skill. *Id.*, And, while the prior art may help inform the level of ordinary skill (*id.*), here the Petition did not account for the fact that the prior art are telecommunications references that require a relatively detailed knowledge of cellular technologies that someone with two years of

experience in navigation and/or geolocation systems would not necessarily have.

POR, 21-22, 44-51 EX2019 [Sturza Decl.], ¶¶46-50, 105-114.

B. Petitioner's POSITA Definition Is Deficient

Petitioner argues “Geoscope’s allegations of procedural defects lack merit.”

Reply, 15. But Petitioner never explains how Geoscope’s arguments lack merit.

Indeed, Petitioner has no response to the fact that the Petition does not identify a level of ordinary skill (POR, 40-42), or that Dr. Sundaresan did not provide an opinion on level of ordinary skill. POR, 42-44.

Petitioner rationalizes that experience working with “‘navigation and/or geolocation systems’ would have encompassed knowledge of ‘radio frequency and cellular technologies.’” Reply, 17. Petitioner’s explanation is circular. First, Petitioner argues that “disclosure of well-known cellular protocols [in the Geoscope patents] demonstrates knowledge of ‘radio frequency and cellular technologies’ was within the skill level of a POSITA definition applied in the Petition.” Reply, 17. But it does not follow that just because the patents discuss cellular protocols that someone with a background in geolocation (as defined by Petitioner’s attorneys) would necessarily understand those protocols. POR, 21-22, 44-51; EX2019 [Sturza Decl.], ¶¶46-50, 105-114. Moreover, even though the *use* of wireless communication devices was prevalent circa 2007 (Reply, 17), the vast

majority of cell phone users likely did not understand cellular technologies.

Petitioner simply assumes that because the Geoscope patents use cellular technology to assist in geolocation, anyone with experience in geolocation must understand cellular technology. Reply, 17-18. This is incorrect. There were numerous forms of geolocation available that had nothing to do with cellular technology. EX2019 [Sturza Decl.], ¶¶52, 108.

Further, Petitioner misrepresents Mr. Sturza's deposition testimony. Reply, 18. When Mr. Sturza was discussing "geolocation using the cellular infrastructure", he was referring to the use of "cellphone tower locations." EX1056 [Sturza Dep. Tr.], 1:6-8. *See id.*, 16:20-22 ("Well, they use cellular infrastructure. They don't use, you know, per se, cellular telephone calls."); 17:4-8 ("Yes, there was, you know, as I mentioned, using the base station location and tower location. There was the time difference of arrival and variations of that that were in use.").

Mr. Sturza was saying, for example, when a mobile at the time dialed 911, the system might know which cell tower received the call. Based on that information, the system would know the mobile was likely somewhere around the serving tower and the system might even be able to use the time difference of arrival to try to narrow down the location. That rudimentary functionality does not

indicate someone with a background in geolocation understood how complex cellular protocols operated. EX2019 [Sturza Decl.], ¶108.

Petitioner alleges that the “asserted prior art also demonstrates that the use of cellular technology in geolocation systems was within the skill level of a POSITA.” Reply, 18-19. Just because a telecommunications reference like Bhattacharya discusses geolocation applications (EX1005 [Bhattacharya], [0001]) does not mean that a person with a background in geolocation understands cellular technology. The two fields are distinct. The Reply never explains why experience in geolocation would necessarily require experience with cellular technology.

C. Geoscope’s POSITA Definition

Petitioner argues that “The Petition demonstrates obviousness even under Geoscope’s alternative POSITA definition.” Reply, 19. But the Petition applies the level of ordinary skill provided by Petitioner’s attorneys, not the level of ordinary skill provided in the POR. Pet., 7 n. 2. Neither the Petition nor the Reply address the proposed prior art combination of Bhattacharya and Spain under Geoscope’s definition.

D. The Sundaesan Declaration Is Entitled To No Weight

The Reply does not dispute that Dr. Sundaesan simply adopted the level of ordinary skill provided by Petitioner’s attorney. Reply, 20-22. Nor does the Reply

dispute that Dr. Sundaresan simply adopted the Markman Order without further analysis. *Id.* As Dr. Sundaresan's positions on the level of ordinary skill and claim construction are not his own opinions or based on his own analysis, they are entitled to no weight. POR, 51-58; Fed. R. Evid. 702(b)-(d); 37 C.F.R. §42.65(a).

Petitioner's attempts to distinguish the decisions cited in the POR fail. Reply, 20-21. First, Petitioner's failure to address the POR's citations to the Federal Rules of Evidence alone is dispositive. POR, 51-52. These are not Dr. Sundaresan's opinions, therefore they are entitled to no weight.

Second, level of ordinary skill and claim construction are foundational elements of any obviousness or invalidity analysis. POR, 40. Since Dr. Sundaresan's opinions on level of ordinary skill and claim construction are flawed, so too are his opinions on validity.

Contrary to Petitioner's attempts to distinguish *Xerox* and *TQ Delta* (Reply, 20-21), the flaws in Dr. Sundaresan's opinions directly impact his analysis on patentability and obviousness. Dr. Sundaresan's motivation to combine section very nearly "repeat[s], verbatim, Petitioner's conclusory arguments" regarding obviousness. Reply, 21 (quoting *Xerox Corp. et al. v. Bytemark, Inc.*, IPR2022-00624, Paper 12 at 5 (PTAB Director Review Decision, Feb. 10, 2023)). *Compare* Pet., 45-51 *with* EX1003 [Sundaresan Decl.], 60-66 (at ¶¶93-99). Moreover, Dr.

Sundaresan’s motivation to combine section relies on Petitioner’s attorneys’ definition of POSITA to underpin his rationale for combination. EX1003 [Sundaresan Decl.], ¶¶93-96, 99-100, POR, 50-51. His application of the prior art to the challenged claims relies on Petitioner’s attorneys’ definition of POSITA approximately 40 times. *See generally id.*, 36-86. And for at least claim 18, Dr. Sundaresan relies on the district court’s construction of “grid point” in lieu of his own analysis to form his opinions regarding “[non-uniform] grid point.” *Id.*, ¶¶127-128. Thus, Dr. Sundaresan’s unsupported testimony provides exactly the sort of conclusory expert testimony as discussed in *Xerox* and *TQ Delta*. Accordingly, the Board should provide no weight to Dr. Sundaresan’s testimony.

V. CONCLUSION

Petitioner has not met its burden of proving unpatentability by a preponderance of the evidence. The Board should therefore issue a final written decision finding claims 16-20, 24, 26, and 27 not unpatentable.

Date: December 20, 2024

Respectfully submitted,

By: / Stephen McBride /
Stephen McBride
Reg. No. 78,396
CARMICHAEL IP, PLLC
8607 Westwood Center Drive
Suite 270
Tysons, VA 22182
Email: stevemcbride@carmichaelip.com
Tel.: 703-646-9247

*Counsel for Patent Owner
Geoscope Technologies Pte. Ltd.*

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner's Sur-Reply (the "Sur-Reply") consists of 5,346, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The Sur-Reply complies with the type-volume limitation of 5600 words as mandated in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Respectfully submitted,

/ Stephen McBride /

Date: December 20, 2024

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the following document was served by electronic service, by agreement between the parties, on the date below:

PATENT OWNER'S SUR-REPLY

W. Karl Renner
Roberto Devoto
Ryan Chowdhury
Usman A. Khan
FISH & RICHARDSON P.C.

Email: IPR50095-0138IP1@fr.com

Date: December 20, 2024

By: / Stephen McBride /
Stephen McBride
Reg. No. 78,396