

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.

Petitioner,

v.

GEOSCOPE TECHNOLOGIES PTE. LTD,

Patent Owner.

Case IPR2024-00259

U.S. Patent No. 8,406,753

PATENT OWNER'S SUR-REPLY

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972 F.3d 1350 (Fed. Cir. 2020) 6

REGULATIONS

37 C.F.R. §42.104 12

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)
2002-2007	Reserved
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, 2003, <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)
2014-2015	Reserved
2016	U.S. Patent No. 7,561,104 ("104 Patent")
2017	U.S. Patent No. 9,097,784 ("784 Patent")
2018	Declaration of Mr. Mark Alan Sturza
2019	CV of Mr. Mark Alan Sturza
2020	Deposition Transcript of Dr. Karthikeyan Sundaresan for IPR2024-00259
2021	Reserved
2022	Business News Daily, "Location-Based Services: Definitions and Examples," Max Friedman, Oct. 27, 2023 (last accessed July 28, 2024) ("Business News Daily").
2023	Dictionary.com, "Geolocation Definition & Meaning," available at www.dictionary.com/browse/geolocation (last accessed July 16,

	2024) (“Dictionary.com”).
2024	“Geolocation: What it is, How it Works, Examples”, January 25, 2021, <i>available at</i> https://www.investopedia.com/terms/g/geolocation.asp ; <i>last accessed</i> July 16, 2024 (“Investopedia”).
2025	“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 , <i>last accessed</i> Aug. 7, 2024 (“Leverage”)
2026	U.S. Pat. Appl. Publ. No. 2003/0064735 (“Spain ’735”)
2027	U.S. Pat. No. 7,706,811 (“Shkedi”)
2028	Heikki Laitinen, Jaakko Lähteenmäki, Tero Nordström, “Database Correlation Method for GSM Location,” VTT Information Technology, IEEE, 2001. (“Laitinen”)
2029	U.S. Prov. Appl. No. 60/899,379 (“’379 Provisional”)
2030	U.S. Pat. No. 8,175,620 (“’620 Patent”)
2031	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 ; <i>last accessed</i> July 23, 2024 (“Applus”)
2032	Solomon Ndungu and Erica Mixon, “GSM (Global System for Mobile communication)”, <i>available at</i> https://www.techtarget.com/searchmobilecomputing/definition/GSM ; <i>last accessed</i> July 23, 2024 (“Techtarget”).
2033	<i>Excerpts from Telecom ABC, available at</i> https://www.telecomabc.com/i/is-41.html ; <i>last accessed</i> July 23, 2024 (“Telecom ABC”).
2034	<i>Reserved</i>
2035	Deposition Transcript of Dr. Karthikeyan Sundaresan for IPR2024-00031, IPR2024-00032, and IPR2024-00255

I. INTRODUCTION

Petitioner's Reply fails to address how the predetermined grids points disclosed in Bhattacharya and Yost disclose the claim limitation "generating one or more sets of grid points for said calibration data." As discussed below, both Bhattacharya and Yost use pre-determined grids that are generated without respect to calibration data. That is, both use a predetermined grid overlaid on a region and then estimate the calibration data assigned to each grid location. The grid exists regardless of whether there is any calibration data. The claims, on the other hand, require the grid points to be generated for existing calibration data.

The Reply also takes claim construction positions for "grid point" that are irreconcilable with the claim construction order Petitioner purports to adopt. Petitioner argues that "grid points" and "NUGs" are different, but the district court construction of "grid points" that the Petition adopted conflates "grid points" and "NUGs." Indeed, the Markman order's analysis of "grid points" relies entirely on its discussion of NUGs.

Moreover, Petitioner's merits arguments fail under either the district court construction or PO's alternate construction. Both prior art references Petitioner relies upon (Bhattacharya and Yost) simply assign estimated (or averaged) signal strengths to pre-determined points covering a geographic region. The challenged

claims require “generating [] grid points for said calibration data.” But “grid points” in Bhattacharya and Yost are not generated at all, let alone “for said calibration data”—they are pre-determined similar to the “calibration points” in the challenged claims.

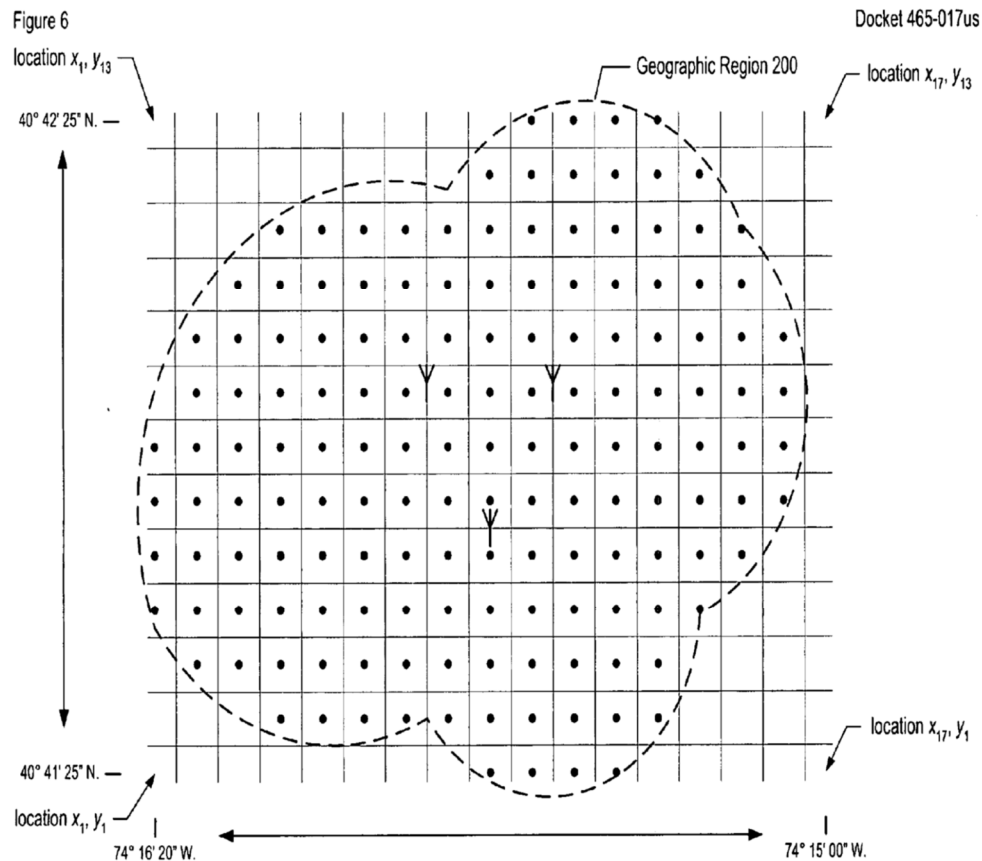
Nor are the estimated or averaged signal strengths in Bhattacharya or Yost “representative calibration data for an area” as required by the district court construction because they do not necessarily reflect the actual signal strengths in the pre-determined areas disclosed in Bhattacharya and Yost. And neither Bhattacharya nor Yost evaluates calibration data to determine the boundaries of the areas—the areas in Bhattacharya and Yost are predetermined, not determined based on evaluation of calibration data.

For at least these reasons, Petitioner fails to carry its burden to prove the challenged claims are unpatentable. The Board should therefore find the challenged claims not unpatentable.

II. BHATTACHARYA AND YOST DO NOT TEACH “GENERAT[ING] ONE OR MORE SETS OF GRID POINTS FOR SAID CALIBRATION DATA” UNDER ANY CONSTRUCTION

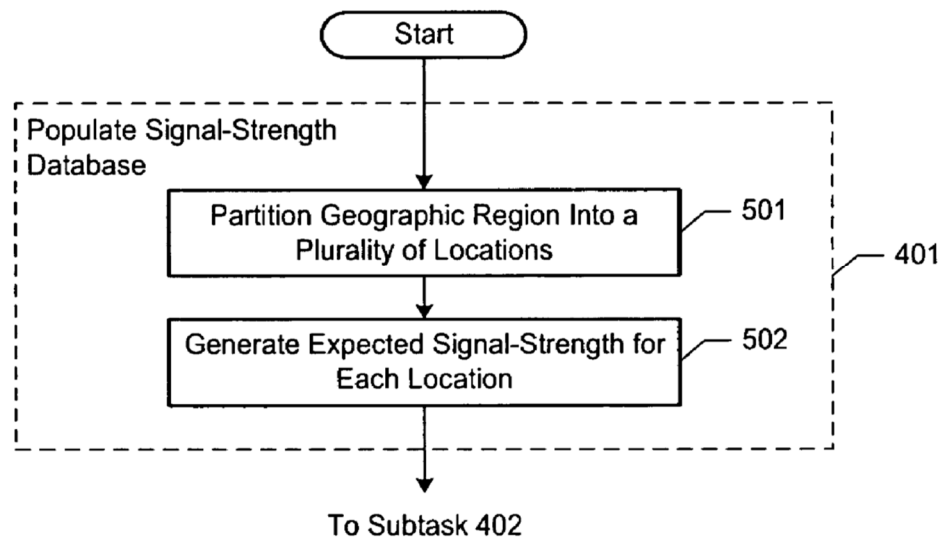
The Reply never rebuts the POR’s arguments that Bhattacharya and Yost do not teach the claimed “generat[ing] one or more sets of grid points for said calibration data” because the grids in Bhattacharya and Yost are pre-determined

irrespective of any calibration data. POR, 38-46. That is, in Bhattacharya, “a rectangular grid of X by Y tessellated squares is overlaid onto geographic region 200 (see FIG. 6) and the center of each square represents a location.” EX1004 [Bhattacharya], [0106], POR, 40. *See, e.g.*, EX1004 [Bhattacharya], Fig. 6 (below).



As shown in Figure 6, Bhattacharya’s “locations” are a pre-determined grid overlaid on geographic region 200. The areas and locations in these grids are not generated for calibration data—instead, they are predefined and exist regardless of whether calibration data even exists. This is confirmed at Bhattacharya Fig. 5,

below, which shows that first, at step 501, the geographic region is partitioned into a plurality of locations (i.e., the grid in Fig. 6). and only afterwards at step 502 are expected signal strengths (e.g., calibration data) generated:



Thus, the alleged “grid points” in Bhattacharya exist before any signal strengths are generated.

Petitioner argues that the “center of each square” in Bhattacharya is a grid point. Pet., 35-36. Even if Petitioner were correct, Bhattacharya’s grid points are not “generated [] for said calibration data” because they are predefined and exist independently of any calibration data. POR, 41-45. Indeed, Bhattacharya generates signal strengths for its locations, not the other way around (generating grid points for calibration data) as required by the claims.

Petitioner identifies nothing in Yost that would teach this limitation. POR, 45-46. Yost suffers from the same problem as Bhattacharya because its “small areas” are “pre-determined.” EX1008 [Yost], 7:50-51. That is, Yost, like Bhattacharya, teaches pre-determined areas that are overlaid on a geographic region (“coverage area”) regardless of any calibration data. The small areas are not generated for calibration data, but instead are predetermined across a coverage area of interest. *Id.*, 7:50-56. Accordingly, Bhattacharya and Yost do not render obvious claims 1, 7, 9, 32, 38, and 40 of the ’753 Patent.

III. PETITIONER REARGUES CLAIM CONSTRUCTION

Petitioner’s primary argument is that PO excludes uniform grid points from its construction for “grid point.” Reply, 4-13. But PO’s analysis—in both the preliminary response and POR—starts from the same district court claim construction order adopted by Petitioner, its expert, and the Board in the DI. POR, 26-27; POPR, 26-27; Pet., 8-9; EX1003 [Sundaresan Decl.], ¶28; EX2020 [Sundaresan Dep. Tr.], 8:18-21 (“Q [] you are applying the district court’s constructions in your analysis in this IPR, right? A Correct.”); 9:11-13 (“Q Do you agree with the district court’s constructions of these terms? A I do.”); DI, 26-27. The positions of PO that Petitioner criticizes are for the most part drawn directly

from the claim construction order. Thus, Petitioner's arguments contradict the district court claim construction it purports to adopt.

A. The Claim Construction Order Was Deciding A Different Issue

The district court construction for “grid point,” underlying analysis, and Markman briefing of the parties is all consistent with PO's arguments in both the POPR and POR. POPR, 26; POR, 32-36. Importantly, the constructions before the district court were not directed to the issue in this IPR. In the district court, PO proposed “grid point” to mean “locations or areas that are determined and associated with a particular set or sets of calibration data.” EX1020 [Markman Order], 19. Defendant Google proposed a construction of “a point associated with representative calibration data for an area” that the district court ultimately adopted *Id.* Thus, the crux of the dispute before the district court was whether a grid point is a “location or area” or a “point.”

The issue here is different. The issue is how the claimed “grid points” are different than the claimed “calibration points.” *See, e.g.*, EX1001 [’753 Patent], cls. 1, 32 (claiming both “calibration points” and “grid points.”). *See Neville v. Found. Constructors, Inc.*, 972 F.3d 1350, 1357 (Fed. Cir. 2020) (“the use of [] ‘two [different] terms in a claim requires that they connote different meanings.’”)

(quoting *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006)).

The parties agree that “calibration points” are “geographic points with which calibration data is associated.” Pet., 7; EX1025 [Stipulated Claim Constructions],

1. And the Markman order construed “calibration data” as “modified or unmodified network measurement data associated with a geographic location.”

EX1020 [Markman Order], 8; Pet., 8; POR, 25-26. Examples of “calibration data” include signal strengths received by the mobile. EX1001 [’753 Patent], 9:60-63.¹

Thus, when the district court stated that the language from the ’753 Patent “is directed more toward what *must be done* to arrive at a grid point or set of grid points than what a grid point *is*” (EX1020 [Markman Order], 19 (emphasis in original), the court was pointing out that the proposed constructions ask the court to decide whether a grid point *is* an area or location (as proposed by PO) or point

¹ As discussed below, the prior art relied on by Petitioner discloses modified (i.e., interpolated or averaged) or unmodified signal strengths—that is, “calibration data” under the agreed construction—associated with a particular predetermined calibration point. *Infra*, §III.A. It does not then discuss “generating one or more sets of grid points for said calibration data.”

(as proposed by Petitioner), not *what must be done* to form a grid point. And indeed, the district court acknowledges that when the abstract of the '753 Patent states “[t]he calibration data for these 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 from, for example, one or more NMRs”, it is describing “what must be done” to arrive at a grid point.

EX1001 [’753 Patent], Abstract.

In the POPR, PO proceeded under the district court claim construction for “grid point.” POPR, 26. The DI, without the benefit of the context of the Markman proceedings and full intrinsic record, interpreted this as attempting to reargue claim construction. This is not the case. The district court’s use of “representative calibration data” and accompanying analysis was meant to reflect that each NUG corresponds to an area where the calibration data within the area is all similar. EX1020 [Markman Order], 19-20. That is, the areas corresponding to the NUGs are defined based on similarities in the calibration data. Thus, the calibration data must be evaluated to determine the resulting area. POR, 32-36.

In order to clarify any ambiguity in the district court construction, the POR provided an alternate construction of “a point associated with representative calibration data for an area whose boundaries are determined from evaluation of

the calibration data”, which modifies the district court construction to specifically account for the issue present here—that is, by explaining how “grid points” and “calibration points” are different. POR, 26-32.

B. The Reply Reargues Claim Construction

The Reply largely criticizes claim construction positions that PO adopted directly from the claim construction order. For example, Petitioner devotes an entire section to arguing that “Geoscope relies exclusively on descriptions of non-uniform grid points for its construction of ‘grid point.’” Reply, 5-8. But the district court claim construction Petitioner purports to adopt relied exclusively on descriptions of NUGs for its construction of ‘grid point.’ EX1020 [Markman Order], 19-20. Indeed, the Markman order unambiguously rejected Petitioner’s position that grid points and NUGs are different by defining “grid point” as “a Non-uniform grid point (‘NUG’)”:

rather than what a grid point *is*. The specification of the '104 Patent, sibling to the '753 Patent, *does* provide a clear indication of the meaning of “grid point”—or a Non-uniform grid point (“NUG”): “NUGs represent an area of collected calibration data.” Ex. B at 3:56–60; *see Andersen*

EX1020 [Markman Order], 19. Further, the district court’s ultimate construction for “grid point” is based on a passage expressly discussing NUGs:

rather than what a grid point *is*. The specification of the '104 Patent, sibling to the '753 Patent, *does* provide a clear indication of the meaning of “grid point”—or a Non-uniform grid point (“NUG”): “NUGs represent an area of collected calibration data.” Ex. B at 3:56–60; *see Andersen*

Id. (quoting EX2016 ['104 Patent]).

Similarly, Petitioner criticizes PO for relying on passages from the '753 Patent discussing the “statistical similarity” of grid points. Reply, 6. Again, PO is simply reiterating the district court’s analysis in construing “grid point” that “Defendant [Google’s] use of ‘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.” EX1020 [Markman Order], 20 (citing EX2016 ['104 Patent] at 3:56-60, EX1001 ['753 Patent] at 10:29-11:7 and EX2017 ['784 Patent] at 6:22-28.). In each case, the district court is citing paragraphs expressly discussing NUGs.

Nor is the district court’s rationale inconsistent with the '753 Patent. The '753 Patent expressly states that it refers to “grid points” as “NUGs”: “The grid points may be non-uniformly spaced throughout the geographic region and hence may be referred to as non-uniform grid points (‘NUGs’).” EX1001 ['753 Patent], 9:40-43. *See also id.*, 2:43-50.

To the extent Petitioner’s Reply is correct that the district court construction Petitioner adopted is wrong and NUGs and grid points are different, the district court construction is effectively construing “NUG,” consistent with the ’753 Patent, ’379 Provisional and related Geoscope patents. POR, 32-36.

Further, the ’753 Patent provides a clear alternative construction for “grid point” that does not rely on NUGs:

locations within a geographic region. The calibration data for these locations must be gathered and analyzed so that particular points (e.g., “grid points”) within the geographic region can be determined and associated with a particular set or sets of calibration data from, for example, one or more NMRs.

EX1001 [’753 Patent], 2:31-35. Thus, in order to form “grid points,” “calibration data [] ***must be gathered and analyzed.***” (i.e., evaluated). *Id.* (Emphasis added).

Notably, this is very similar to the construction the district court rejected in adopting Petitioner’s construction for “grid points”—i.e., areas or locations within a geographic region that are determined and associated with a particular set or sets of calibration data.

Petitioner cannot have it both ways. Either the district court construction of “grid point” the Petition purportedly adopted is correct that NUGs and grid points are the same, or the district court construction is incorrect and “NUGs” and “grid points” needs reconstrued separately across each patent. But Petitioner has not

provided an alternate construction of grid point, and at this point in the proceeding, Petitioner cannot change course by advancing arguments in the Reply that appear to disavow the claim constructions applied in the Petition. 37 C.F.R. §42.104(b)(3). Accordingly, Petitioner's new construction arguments should be rejected.

C. The '753 Patent Refers To Grid Points As NUGs

Petitioner's argument that grid points are different than NUGs not only ignores the claim construction order, it ignores or misstates the '753 Patent claims and specification. The '753 Patent specification rejects Petitioner's position by stating that it refers to "grid points" as "NUGs": "The grid points may be non-uniformly spaced throughout the geographic region and hence may be referred to as non-uniform grid points ('NUGs')." EX1001 ['753 Patent], 9:40-43. Thus, the '753 Patent says it refers to grid points as NUGs.

The claims also contradict Petitioner's position. Independent claims 1 and 32 claim both "calibration points" and "grid points." The terms were construed differently in the district court and are presumed to have different meanings. "[C]alibration points" was construed as "geographic points with which calibration data is associated." Pet., 7; EX1025 [Stipulated Claim Constructions], 1. In other words, calibration points may be preexisting positions that are later associated with calibration data—a coordinate associated with a signal strength, for example.

In the claims, calibration data is provided “for each of one or more calibration points.” EX1001 [’753 Patent], cl. 1. For example, the calibration points may be pre-existing points that are later associated with calibration data such as signal strengths. Next, the claims require “generating one or more sets of grid points for said calibration data.” *Id.* Thus, the claimed grid points are not preexisting coordinates as Petitioner’s arguments assume. Instead, the claimed “grid points” are generated based on existing calibration data. The claimed “grid points” are therefore a second set of points organized not by a uniform, pre-existing grid of coordinates, but instead organized by evaluation of calibration data.

Accordingly, at least as used in the claims, grid points and NUGs are the same.

D. Petitioner’s Arguments Regarding “UGs” Attempts To Confuse The Record

Petitioner’s arguments that both UGs and NUGs can be grid points is misplaced. Reply, 8-13. First, as previously discussed, the ’753 Patent states that it uses “grid points” and “NUGs” interchangeably. EX1001 [’753 Patent], 9:40-43. Thus, the district court’s assumption that “NUGs” and “grid points” are the same finds support in the specification.

Second, the '753 Patent defines "UG" as "a fixed uniform grid", not a "uniform grid *point*":

A NUG generator or a method to produce NUGs may begin the NUG generation operation using, for example, one of more of the following: (a) a fixed uniform grid ("UG") defined over the region R with the calibration point data being assigned to the fixed grid points by some rule (e.g., allocated by closest fixed grid point, a centroid of a set of fixed grid points, etc.); (b) random grid points to define the start of each NUG; (c) combinations of (a) and (b) depending on the characteristics of the calibration data; or (d) some other useful method.

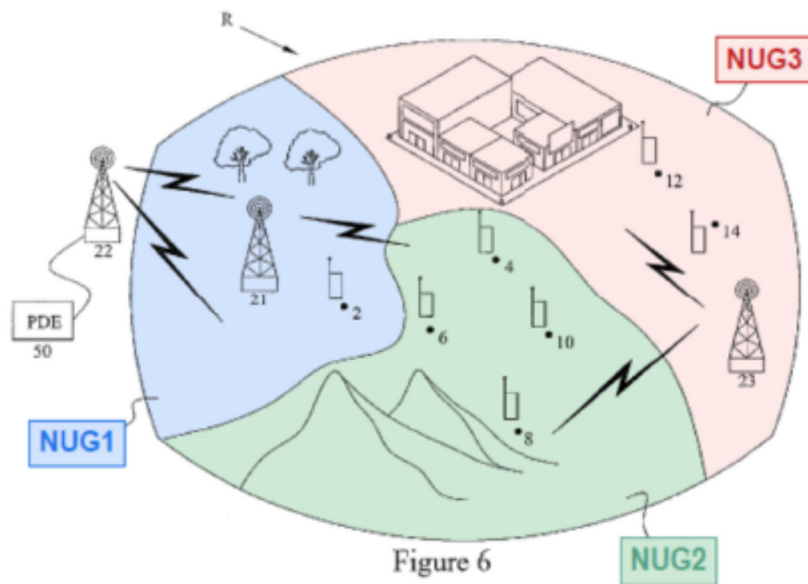
EX1001 ['753 Patent], 10:29-39. As the passage makes clear, the UGs are fixed uniform grids that are used to generate NUGs.

Third, the claims require grid points are generated for preexisting ("said") calibration data. The '753 Patent explains that "[i]n any of these cases, the NUG generator may evaluate the data vectors at a particular (candidate) calibration point, or at a fixed grid point to which the data vector(s) is/are assigned." EX1001 ['753 Patent], 10:39-41. Claims 1 and 32 are clearly claiming the same NUG generation discussed in the preceding quotes. EX1001 ['753 Patent], cls. 1 and 32 ("generat[ing] one or more sets of grid points for said calibration data").

1. Uniform Grid Points

Petitioner misunderstands the POR's arguments regarding uniform grid points. Petitioner argues "[t]here is simply nothing in the claims or the specification to teach or even suggest to a POSITA that the claimed 'one or more sets of grid points' must include only one uniform grid point or must include at least one non-uniform grid point." Reply, 12. Petitioner does not cite which portion of the POR it is disputing and the POR does not appear to make this argument.

The POR, however, does explain that NUGs are formed by evaluating calibration data assigned to calibration points and grouping similar calibration data together. POR, 16. The underlying calibration points can be on a fixed grid. *Id.* However, the grid points that are generated by evaluation of calibration data form a different grid. The grid points that form after evaluating the calibration data are usually not uniform because calibration data is usually not distributed uniformly. EX1001 ['753 Patent], 2:43-46 ("These grid points do not necessarily have to be part of a uniform grid and usually will not be uniformly distributed throughout the geographic region."); POR, 15. This non-uniform nature is illustrated, for example, by Fig. 6 of the related '784 Patent:



EX2017 [’784 Patent], Fig. 6; *see also* POR, 12.

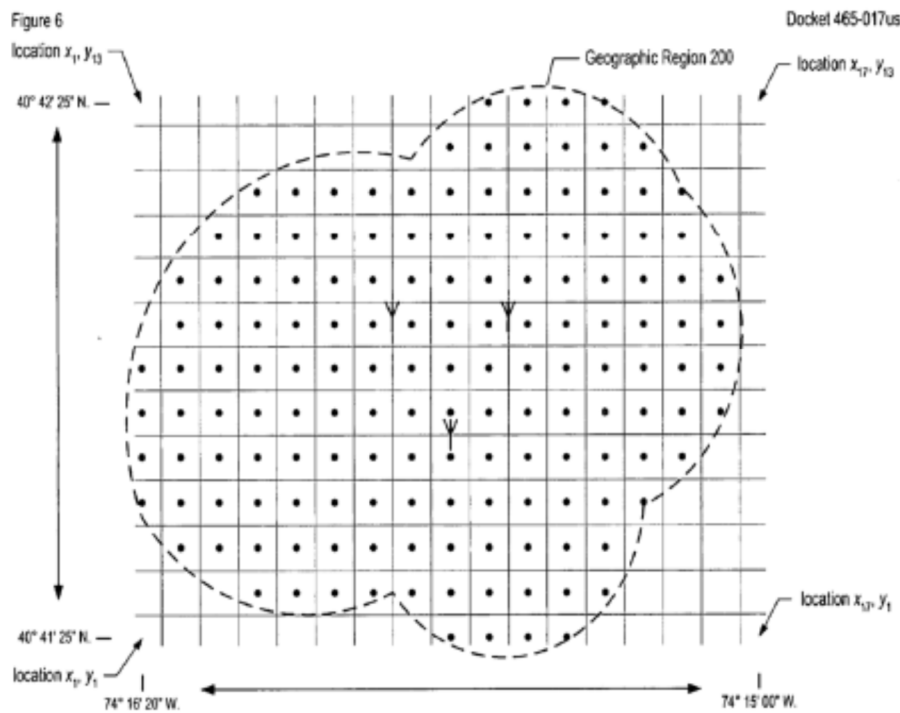
It is possible (though generally unlikely) that the calibration data (e.g., signal strengths) across a geographic region could be distributed uniformly, in which case NUGs with something similar to a uniform grid could result after evaluating the calibration data. POR, 14-15. It is also possible that one or more pieces of calibration data is significantly different than all of its neighbors, in which case those pieces of calibration data would form their own NUGs. But this still requires evaluation of the underlying calibration data to generate the grid points. *Id.*, 15-16.

Nowhere does the POR argue that grid points are limited to a single uniform grid point or must include at least one non-uniform grid point. Instead, the resulting NUGs will be determined based on similarities or differences in the

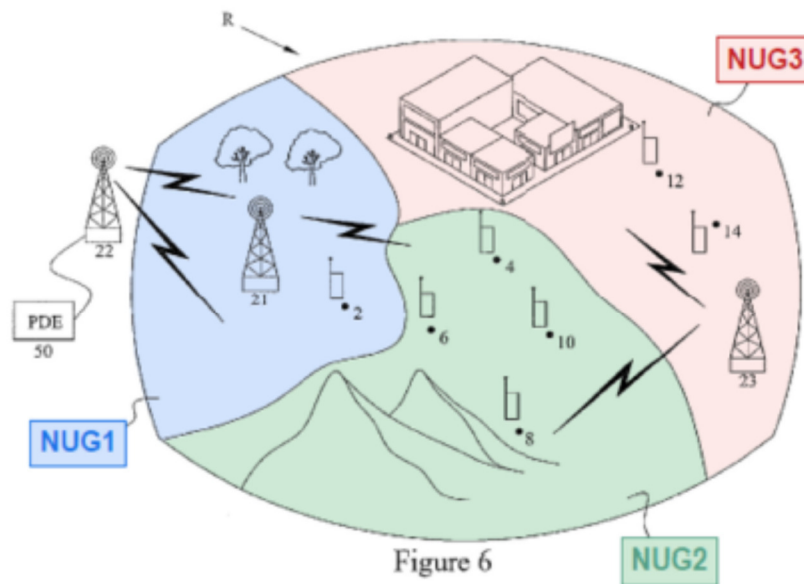
underlying calibration data. EX1001 ['753 Patent], 10:39-65. Calibration data that is similar to neighboring calibration data is aggregated together and associated with one NUG. *Id.*, 10:55-59. Different calibration data forms the root of a new NUG. *Id.*, 10:50-55. Petitioner's arguments otherwise confuse the issue.

E. Grid Points Are Generated By Evaluation of Calibration Data

Petitioner's arguments that grid points are not formed by evaluation of calibration data likewise confuse the teachings in the specification. Reply, 13-14. First, Petitioner conflates calibration points with grid points. Reply, 13. As discussed, calibration points may be points on a fixed grid. EX1001 ['753 Patent], 10:29-38 ("the calibration point data be assigned to the fixed grid points.") *See supra*, §II.C. This is similar to the grid in Bhattacharya Fig. 6, where a predefined grid is assigned signal strengths at fixed locations:



EX1004 [Bhattacharya], [0106]. Fixed grids like Bhattacharya can be a starting point for generating the claimed grid points, but they are not the claimed grid points. The claimed “grid points” are a level of abstraction above fixed grids like Bhattacharya. That is, the claimed “grid points” are generated “for [the] calibration data” that is already assigned to predefined grids like those in Bhattacharya and Yost. Thus, the claimed grid points are generated by evaluating existing calibration data and aggregating calibration points with similar calibration data into larger areas. EX1001 [’753 Patent], 10:39-65. The resulting NUGs are illustrated in Fig. 6 of the ’784 Patent below:



Accordingly, grid points are determined from evaluation of calibration data.

F. Petitioner's Arguments Ignore Most of The Intrinsic Record

The POR cited not only the '753 Patent, but the '379 Provisional and related '104 and '784 Patents in support of its claim interpretation. POR, 26-36. The Reply fails to address these other portions of the intrinsic record. Petitioner argues the '379 Provisional is irrelevant because the claims here use “grid point” and claims in other Geoscope patents use “non-uniform grid point.” Reply, 7-8. But the '753 Patent uses the two terms interchangeably, stating that “grid points [] may be referred to as non-uniform grid points ('NUGs')”. EX1001 ['753 Patent], 9:34-39. Consistent with the '753 Patent, the first four pages of the '379 Provisional explains what NUGs are and how they are formed. EX2029 ['379 Provisional], 5-

8. The Reply's claim construction arguments, in failing to address relevant portions of the intrinsic record, are fundamentally flawed.

IV. BHATTACHARYA AND YOST DO NOT TEACH “GRID POINTS” UNDER ANY CONSTRUCTION

As discussed above, regardless of claim construction, Bhattacharya and Yost do not teach the claim limitation “generating one or more sets of grid points for said calibration data.” *Supra*, §II. Moreover, Bhattacharya and Yost do not teach “grid points” alone under any proposed construction of “grid points.”

Petitioner's Reply does not rebut the POR's arguments that Bhattacharya and Yost do not disclose or suggest the challenged claims under PO's alternate construction for “grid point.” Reply, 14-17. Thus, if the Board adopts PO's alternate construction, Petitioner has not met its burden to show that the claims are unpatentable.

The Reply also misapplies the district court construction it purports to adopt. Petitioner argues “under the district court's construction, the combination of Bhattacharya and Yost render limitations [1b] and [32d] obvious.” Reply, 14. But Petitioner's arguments do not apply the district court construction to Bhattacharya and Yost.

The district court construction of “grid point” is “a point associated with representative calibration data for an area.” EX1020 [Markman Order], 20.

Petitioner's Reply fails to address how Bhattacharya's interpolation results in calibration data that is "representative" for an area as required under the district court construction. Reply, 15-16. Bhattacharya's interpolation is just an estimated signal strength assigned to a pre-defined grid of squares. EX1004 [Bhattacharya], [0106], [0107], [0119]. It does not necessarily represent the actual signal strength in the square. That is, the interpolated value may be entirely different than the actual (i.e., measured) signal strength at the pre-assigned square. The actual signal strengths in the pre-assigned square region may also vary significantly depending on which location in the region is measured. Indeed, Bhattacharya concedes that its interpolation "is less accurate than taking measurements" and "causes ... uncertainty in the modeling error ... to rise." *Id.*, [0119]. Thus, Bhattacharya alone does not teach limitations [1b] or [32d].

Petitioner's Reply argues that Yost discloses "expected signal strength data [that] is 'representative of an area'" (Reply, 16), but Yost is just providing average values of multiple empirical measurements over areas of pre-determined, uniform size. Reply, 16; EX1008 [Yost], 7:28-30 ("the calibration data containing the measured and recorded signal strength measurements are averaged within each of a plurality of small areas..."); 7:50-51("The calibration signal strengths measure an

average over small areas of a pre-determined size.”); POR, 45-47. Averages are not necessarily representative of the individual calibration data.

To explain, in a given area with several signal strength measurements, those signal strength measurements may vary considerably depending on a number of factors such as geography, obstructions, antenna beam shape, time of day, time of year, weather conditions, etc. On one side of the area, the mobile may record a very high signal strength from a nearby cell. On the other side of the area, the mobile may not even register a signal from the nearby cell. The average of those two signal strength measurements (e.g., a moderate signal strength) is not representative of either of the original measurements. Thus, Yost’s averaging is not representative of the calibration data in Yost’s “pre-determined” small areas.

EX1008 [Yost], 7:50-51. Under the district court construction, “a point associated with representative calibration data for an area,” the point is associated with calibration data representative of the entire area (that is, all the calibration data in the area is similar), not just an average of the calibration data in the area. Thus, Bhattacharya and Yost do not teach “grid points.”

V. PETITIONER DOES NOT ADDRESS ITS UNSUPPORTED EXPERT DECLARATION

The POR identifies that Petitioner’s expert, Dr. Sundaresan, did not provide his own opinion on level of ordinary skill or claim construction in his opening

declaration. POR, 47-54 (discussing EX1003 [Sundaresan Decl.]. Thus, the POR explains that Dr. Sundaresan's testimony is entitled to no weight and should be excluded under the Federal Rules of Evidence. POR, 47-54.

The Reply does not rebut or otherwise address PO's arguments regarding Dr. Sundaresan's declaration and therefore waives any opposition. Thus, the Board should not credit the unsupported testimony of Dr. Sundaresan.

VI. CONCLUSION

For the reasons set forth above, Petitioner has not met its burden of proving claims 1, 7, 9, 32, 38, and 40 of the '753 Patent are unpatentable by a preponderance of the evidence. The Board should therefore issue a final written decision finding claims 1, 7, 9, 32, 38, and 40 patentable.

Date: December 20, 2024

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner's Sur-Reply (the "Sur-Reply") consists of 3,996 words, 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 5,600 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

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