UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION

GEOSCOPE TECHNOLOGIES PTE. LTD., Plaintiff, v. GOOGLE LLC, Defendant,	Case No. 1:22-cv-01331-MSN-JFA

GOOGLE LLC'S OPENING CLAIM CONSTRUCTION BRIEF

GOOGLE EXHIBIT 1025
Google v. Geoscope

TABLE OF CONTENTS

I. LEGAL STANDARDS 1

II. '104, '358, AND '494 PATENTS 2

A. "calibration data" ('104 Patent, cl. 1-2; '358 Patent, cl. 1, 4, 15, 18, 41-42; '494 Patent, cl. 1, 4, 9-10, 25-26) 3

B. "observed network measurement data" ('104 Patent, cl. 1, 11; '358 Patent, cl. 1, 15, 41, 49; '494 Patent, cl. 1, 25, 32) 5

C. "positioning determining equipment" ('358 Patent, cl. 1, 41) 8

III. '753 PATENT 12

A. "network measurement report" ('753 patent, claims 1 and 32) 12

"grid point" ('104 patent, cl. 2; '358 patent, cls. 4, 18, and 42; '494 patent, cls. 4, 26; '753 patent, cls. 1, 32) 15

C. "evaluating said at least one network measurement report with each of said sets of grid points as a function of select ones of said characterizing parameters"; "evaluate said at least one network measurement report with each of said sets of grid points as a function of select ones of said characterizing parameters" ('753 Patent, cl. 1, 32) 18

IV. '784 PATENT 21

A. "in proximity" ('784 patent, claim 2, 10, 11, 21, 22) 21

B. "determining said most likely street as a first one of said plural geographic locations" (and "determining from said status a most likely one of said plural streets upon which said wireless device is located") ('784 patent, claims 2, 10, 11, 21, 22) 23

C. Order of "obtaining" and "determining" steps ('784 patent, claim 2, 10, 11, 21, 22) 25

V. '264 PATENT 27

A. "wireless device" ('264 Patent, cl. 1, 13) 27

B. "indication of transmission signal strength of said signal" ('264 patent, claims 1, 13) 29

TABLE OF AUTHORITIES

CASES

Abdou v. Alphatec Spine, Inc.,
2014 WL 6611422 (S.D. Cal. Nov. 19, 2014) 22

Altris, Inc. v. Symantec Corp.,
318 F.3d 1363 (Fed. Cir. 2003).....26

Ancora Techs., Inc. v. Apple, Inc.,
744 F.3d 732 (Fed. Cir. 2014).....13

Anderson Corp. v. Fiber Composites, LLC,
474 F.3d 1361 (Fed. Cir. 2007).....4, 16

Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Tech.,
521 F.3d 1328 (Fed. Cir. 2008).....8

Bancorp Services, L.L.C. v. Hartford Life Ins. Co.,
359 F.3d 1367 (Fed. Cir. 2004).....15

Blackboard, Inc. v. Desire2Learn, Inc.,
574 F.3d 1371 (Fed. Cir. 2009).....9

Canon, Inc. v. TCL Elecs. Holdings Ltd.,
2020 WL 2098197 (E.D. Tex. May 1, 2020).....10

Cap. Bridge Co. v. IVL Techs. Ltd.,
2006 WL 2585529 (S.D.N.Y. Aug. 30, 2006), *aff'd,* 232 F. App'x 987 (Fed. Cir. 2007).....28

Cap. Sec. Sys., Inc. v. NCR Corp.,
725 F. App'x 952 (Fed. Cir. 2018) 20, 21

Daedalus Blue, LLC v. MicroStrategy Inc.,
2022 WL 1611758 (E.D. Va. Jan. 21, 2022) 9, 12

Diebold Nixdorf, Inc. v. ITC,
899 F.3d 1291 (Fed. Cir. 2018).....10

Dow Chem. Co. v. NOVA Chemicals Corp. (Canada),
629 F. Supp. 2d 397 (D. Del. 2009).....25

Fenner Invs., Ltd. v. Cellco P'ship,
778 F.3d 1320 (Fed. Cir. 2015).....14

Fundamental Innovation Sys. Int'l LLC v. Samsung Elecs. Co.,
2018 WL 647734 (E.D. Tex. Jan. 31, 2018).....23

Halliburton Energy Services, Inc. v. M-I LLC,
514 F.3d 1244 (Fed. Cir. 2008).....19

Hardin v. Samsung Elecs. Co., Ltd.,
Case No. 2:21-CV-00290, Dkt. 86 (E.D. Tex. Aug. 25, 2022) 10

Helmsderfer v. Bobrick Washroom Equip., Inc.,
527 F.3d 1379 (Fed. Cir. 2008).....20

Inguran, LLC v. ABS Glob., Inc.,
No. 17-CV-446-WMC, 2019 WL 943515 (W.D. Wis. Feb. 26, 2019) 20, 21, 25

Int'l Test Sols., Inc. v. Mipox Int'l Corp.,
No. 16-CV-00791-RS, 2017 WL 1367975 (N.D. Cal. Apr. 10, 2017).....19, 20

Kaken Pharm. Co. v. Iancu,
952 F.3d 1346 (Fed. Cir. 2020).....6

Kinetic Concepts v. Blue Sky Med. Grp.,
554 F.3d 1010 (Fed. Cir. 2009).....7

Koki Holdings Co. v. Kyocera Senco Indus. Tools, Inc.,
2021 WL 1092579 (D. Del. Mar. 22, 2021) 23, 25

Lone Star Silicon Innovations LLC v. Iancu,
813 F. App'x 512 (Fed. Cir. 2020) 13

Mantech Envtl. Corp. v. Hudson Envtl. Servs., Inc.,
152 F.3d 1368 (Fed. Cir. 1998).....26

Media Rights Techs., Inc. v. Capital One Fin. Corp.,
800 F.3d 1366 (Fed. Cir. 2015).....10

Mformation Techs., Inc. v. Res. in Motion Ltd.,
764 F.3d 1392 (Fed. Cir. 2014).....26

Microsoft Corp. v. Multi-Tech Sys., Inc.,
357 F.3d 1340 (Fed. Cir. 2004).....4

Midwest Athletics & Sports All. LLC v. Xerox Corp.,
2020 WL 7692767 (W.D.N.Y. Dec. 28, 2020).....10

Mosaic Brands, Inc. v. Ridge Wallet LLC,
55 F.4th 1354 (Fed. Cir. 2022) 6

Nautilus, Inc. v. Biosig Instruments, Inc.,
572 U.S. 898 (2014).....2, 19

Netscape Communs. Corp. v. Valueclick, Inc.,
684 F. Supp. 2d 678 (E.D. Va. 2009) 28

In re Packard,
751 F.3d 1307 (Fed. Cir. 2014).....2

Phillips v. AWH Corp.,
415 F.3d 1303 (Fed. Cir. 2005) (*en banc*) 1, 2

In re Power Integrations, Inc.,
884 F.3d 1370 (Fed. Cir. 2018).....8

Power-One, Inc. v. Artesyn Techs., Inc.,
599 F.3d 1343 (Fed. Cir. 2010).....15

Quanergy Sys., Inc. v. Velodyne Lidar USA, Inc.,
24 F.4th 1406 (Fed. Cir. 2022) 6, 7, 8

Rain Computing, Inc. v. Samsung Elecs. Am., Inc.,
989 F.3d 1002 (Fed. Cir. 2021).....9, 11

Salazar v. AT&T Mobility LLC,
64 F.4th 1311 (Fed. Cir. 2023) 24

Skyhook Wireless, Inc. v. Google, Inc.,
No. CIV.A. 10-11571-RWZ, 2014 WL 898595 (D. Mass. Mar. 6, 2014) 20

Starhome GmbH v. AT & T Mobility LLC,
743 F.3d 849 (Fed. Cir. 2014).....13

Synchronoss Techs., Inc. v. Dropbox, Inc.,
987 F.3d 1358 (Fed. Cir. 2021).....23, 25

Toshiba Corp. v. Juniper Networks, Inc.,
248 F. App'x 170 (Fed. Cir. 2007) 14

TQ Delta, LLC v. 2Wire, Inc.,
2018 WL 626472 (D. Del. Jan. 30, 2018).....10

Trustees of Columbia Univ. in City of New York v. Symantec Corp.,
811 F.3d 1359 (Fed. Cir. 2016).....6

Voice Techs. Grp., Inc. v. VMC Sys., Inc.,
164 F.3d 605 (Fed. Cir. 1999).....8, 14

Wastow Enterprises, LLC v. Truckmovers.com, Inc.,
855 F. App'x 748 (Fed. Cir. 2021) 6

Wi-LAN, Inc. v. Apple, Inc.,
811 F.3d 455 (Fed. Cir. 2016).....26

Williamson v. Citrix Online, LLC,
792 F.3d 1339 (Fed. Cir. 2015) (en banc).....8, 9, 11

TABLE OF EXHIBITS

Ex.	Description
A	Expert Declaration of William R. Michalson
A1	UserPlane Location Protocol Candidate Version 1.0 –27 Jan 2006- Open Mobile Alliance UTMS Radio Resource Control Protocol Specification
A2	Buchanan et al., *Analysis and Migration of Location-Finding Methods for GSM and 3G Networks*, IEE International Conference on 3G Mobile Communication Technologies (2004)
A3	Horn et al., Nonlinear Set–Theoretic Position Estimation of Cellular Phones, 2003 European Control Conference (ECC)
A4	Hussain et al., Positioning a Mobile Subscriber in a Cellular Network System based on Signal Strength, IAENG International Journal of Computer Science (2007)
A5	Han et al., How to Mitigate Signal Dragging during Wardriving, 9 IEEE Pervasive Computing 20 (2010)
A6	*Wireless phone*, Microsoft Computer Dictionary (5th ed. 2002).
B	U.S. Patent No. 7,561,104
C	U.S. Patent No. 8,400,358
D	U.S. Patent No. 8,786,494
E	U.S. Patent No. 8,406,753
F	U.S. Patent No. 9,097,784
G	U.S. Patent No. 8,320,264
H	U.S. Provisional Application No. 60/899,379
I	’753 File History, Dec. 20, 2011 Remarks
K	’784 File History, June 19, 2015 Interview Summary
L	’784 File History, June 19, 2015 Notice of Allowance

M	’264 File History, Oct. 11, 2010 Remarks
N	’264 File History, Mar. 22, 2011 Remarks
O	’264 File History, Jan. 17, 2012 Remarks
P	Excerpted Deposition Testimony of Selcuk Mazlum
Q	Excerpt of Ex. 15 to Deposition of Selcuk Mazlum: A-GPS and U-TDOA Location Alternatives for GSM Mobile Location
R	Excerpted Deposition Testimony of John Carlson

Defendants propose claim constructions for Plaintiff's mobile location patents that are based entirely on the intrinsic evidence: the claim language itself, the patent specification and the prosecution history before the Patent Office. Plaintiff, in contrast, seeks to rewrite its claims to try to cover inventions it did not make. Over and over, Plaintiff tries to broaden the claim language well beyond the alleged inventions actually recited in the claims and disclosed in the patents. Claim construction is not an opportunity for a patent holder to expand its monopoly. The Court should reject Plaintiff's efforts and construe the Asserted Claims[1] consistent with the patents.

I. LEGAL STANDARDS

A claim term's "ordinary and customary meaning" is its meaning to a "person of ordinary skill in the art ("POSITA") in question at the time of the invention" "after reading the entire patent." *Phillips v. AWH Corp*., 415 F.3d 1303, 1312-17, 1321 (Fed. Cir. 2005) (*en banc*). While it is a "bedrock principle" of patent law that "the claims of a patent define the invention," the specification of a patent "is always highly relevant to the claim construction analysis" and "is the single best guide to the meaning of a disputed term." *Id.*, 1312, 1315. "[A] Court should also consider the patent's prosecution history." *Id.*, 1317. As with the specification, "the prosecution history provides evidence of how the PTO and the inventor understood the patent," and can reveal "whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id.* The claims, specification and file history are called "intrinsic evidence," and are of paramount importance. *Id.*, 1314-17.

The Court also may consult "extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Id.*, 1314. Extrinsic evidence includes

[1] As used herein, "Asserted Claims" refers to claims 1, 2, and 11 of the '104 patent, claims 1, 4, 15, 18, 24, 25, 41, 42, 49, and 52 of the '358 patent, claims 1, 4, 9, 10, 25, 26, 32, and 35 of the '494 patent, claims 1, 7, 9, 32, and 35 of the '753 patent, claims 2, 10, 11, 21, and 22 of the '784 patent, and claims 1, 3, 11, 13, 15, 16 17, and 20 of the '264 patent.

"expert and inventor testimony, dictionaries, and learned treatises." *Id.*, 1317.

Under 35 U.S.C. § 112, ¶ 2, the claims must "particularly point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). Claims define the scope of the invention with "reasonable certainty" and provide "clear notice" of what is claimed, "appris[ing] the public of what is still open to them." *Id.*, 901, 909-10. Indefiniteness renders a claim invalid, and the Court may not rewrite claims to preserve their validity. *See id.*, 902. Indefiniteness is considered as a matter of law as part of claim construction. *In re Packard*, 751 F.3d 1307, 1311 (Fed. Cir. 2014).

II. '104, '358, and '494 PATENTS

The '104, '358, and '494 patents (collectively, the "'104 Patent Family") share the same specification, and generally relate to determining the location of a "mobile station" (*e.g.*, a mobile device like a cell phone) by comparing previously collected "calibration data" in a cellular network for a ***known*** or defined location with network measurement data observed at an ***unknown*** location. Ex. B, Abstract; Ex. A, ¶ 25.[2] "Calibration data" can be collected in advance for a geographic region, *e.g.,* by driving around the known or defined locations. *Id.*, 1:65-2:6; 10:55-58. Thereafter, when a mobile device observes network measurement data from an ***unknown*** location, that observed data can be compared (or "matched") to the "calibration data" to estimate the device's location. *Id.*, 1:50-54, 7:1-6**;** *see also* Ex. R, 71:11-17.

The Asserted Claims of the '104 Patent Family generally recite providing a "database" of previously-gathered "calibration data" associated with known locations, collecting observed network measurement data at an unknown location, "modifying" that observed network

[2] Citations are to the '104 patent, but the '358 and '494 patents share the same disclosures.

measurement data, and comparing the two sets of data to determine the mobile device's location. The alleged advance is in modifying the observed data before comparing it, which the patent purports is useful because cellular signals are sometimes weaker indoors. Ex. B, 1:33-36

A. "calibration data" ('104 Patent, claims 1-2; '358 Patent, cl. 1, 4, 15, 18, 41-42; '494 Patent, claims 1, 4, 9-10, 25-26)

Plaintiff's Construction	Defendants' Construction
Plain and ordinary meaning (no construction necessary); in the alternative, information based on prior network measurements	"network measurement data associated with a defined geographic location"

Defendants' construction of "calibration data"—in every Asserted Claim—is mandated by the intrinsic record as well as its well-understood meaning in the art.

As discussed above, the claims recite determining a mobile device's location by comparing observed at an *unknown* location with pre-gathered "calibration data." The claims and specification make clear that "calibration data" ***must*** be associated with a known or defined geographic location. For example, the shared specification of the '104 Patent Family states that "[t]he [calibration] database may be a collection of data from . . . grids that contain network measurements with ***associated location estimates***." Ex. B, 10:55-58; *see also id*., 9:47-49.[3] The claims are fully consistent, since they recite determining the location of the mobile station by comparing modified data from an unknown location against the calibration data, which would only make sense if the calibration data is associated with particular locations. Ex. A, ¶ 30.

Provisional Application No. 60/899,379 (the "'379 Provisional") to which the '104 Patent Family claims priority and which is incorporated by reference as part of its shared specification, further explains calibration data. Ex. A, ¶ 31. "This [calibration] data [is] obtained at each discrete point (calibration point)" and contains the information such as "[s]ignal strengths observed for the

[3] All emphasis added throughout unless noted otherwise.

signal transmitted by a set of transmitters of ***known location***," and "[s]ignal strength[s] of a transmitter located at the calibration point as measured by a set of receivers of ***known location***[.]" Ex. H, 1.

The asserted '753 patent, which also is based on the same '379 Provisional, further explains that "***calibration data*** 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." Ex. E, 9:56-59; Ex. A, ¶ 32. *See Anderson Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1374-75 (Fed. Cir. 2007) (relying on sibling patent specification to construe term both patents). During prosecution of that patent, the patentee confirmed that network measurement data gathered for the calibration data must be associated with known or defined geographic locations. "The claimed subject matter [of the '753 patent] gathers ***calibration data for these locations*** and analyzes the calibration data so that particular points . . . within the ***geographic region can be generated and associated with a particular set or sets of calibration data***[.]" Ex. I, 2; Ex. A, ¶ 32. *See, e.g.*, *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) ("Any statement of the patentee in the prosecution of a related application as to the scope of the invention would be relevant to claim construction[.]").

Inventor testimony confirms Defendants construction is correct. One lead inventor testified that the "[calibration] database would assoc'iate network measurement information with a particular ***known location***." Ex. P, 76:3-10; *see also id.*, 75:18-22. Another testified that calibration data as used in the patent "is referring to data that a device can measure at a ***particular known point***." Ex. R, 64:12-20; *see also id.*, 101:11-17. Of course, that only makes sense: if "calibration data" were not associated with a defined location, the location-determination method claimed in the '104 Patent Family would not work because neither of the two sets of data compared

in the method would have any association with any known or defined location.

In contrast, Plaintiff seeks to broaden the term calibration data beyond recognition, whether the term is given its plain meaning or Plaintiff's "alternative construction." Indeed, Plaintiff's proposed alternative belies its intent to excise all meaning from the term. Plaintiff's view of the term—to mean ***any*** "information based on prior network measurements"—would permit information wholly untethered to a known or defined geographic region to be calibration data. Ex. A, ¶ 33. However, "information" that lacks any association to a geographic location would defeat the purpose of generating a database of calibration data, because without calibration data associated with a location, the method recites no way to determine the location of the mobile device. *Id.*

B. "observed network measurement data" ('104 Patent, cl. 1, 11; '358 Patent, claims 1, 15, 41, 49; '494 Patent, claims 1, 25, 32)

Plaintiff's Construction	Defendants' Construction
Plain and ordinary meaning (no construction necessary); in the alternative, measurement data representing at least one network characteristic observed by a mobile device	"measurement data from a network measurement report (i.e., a report used in cellular networks which provides the results of a measurement from a mobile device on one or more cells)."

The intrinsic record makes clear through consistent disclosures that the purported invention of the '104 Patent Family is the use of a known report called a "network measurement report" (NMR) obtained by a cellular device to determine the device's location. That idea is foundational to the claimed invention. Defendants' proposal captures that the claimed "observed network measurement data" refers to the measurement data from a network measurement report ("NMR").[4]

The specification consistently and exclusively makes clear that using data from NMRs *is*

[4] As discussed in Section III.A, the POSITA would understand that NMR is a term of art that refers to a report generated by the mobile device in a cellular network on the surrounding cell towers.

the purported invention. Beginning with the provisional application, which is incorporated by reference and is therefore "effectively part of the specification as though it was explicitly contained therein,"[5] the inventors chose the title "Mobile Location *using Network Measurement Reports*." Ex. H, 1; *see Wastow Enterprises, LLC v. Truckmovers.com, Inc.*, 855 F. App'x 748, 751 (Fed. Cir. 2021) (title "indicates that a relevant artisan would understand that the claims" require a specific feature). Under this title, the provisional exclusively describes the claimed invention as using NMRs. For example, it states that "[t]hese inventions are applicable to the problem of estimating the location of a mobile device ***when one or more Network Measurement Reports (NMRs) are generated by the network*** or the mobile in association with the unknown location of the mobile." Ex. H, 1. It further explains that "[t]his invention proposes several methods of adjusting the NMRs, the NUG characteristics, or both, in order to improve the accuracy of indoor location estimation of a wireless device[.]" *Id.*, 21. The POSITA would thus know that the claimed "observed network measurement data" is obtained from NMRs. *Mosaic Brands, Inc. v. Ridge Wallet LLC*, 55 F.4th 1354, 1362 (Fed. Cir. 2022) (limiting "lip" to "extrudable plastic materials" where patent stated "the device of the present invention is constructed of extrudable plastic materials"); *Kaken Pharm. Co. v. Iancu*, 952 F.3d 1346, 1352 (Fed. Cir. 2020) ("A patent's statement of the described invention's purpose informs the proper construction of claim terms"); *Quanergy Sys., Inc. v. Velodyne Lidar USA, Inc.*, 24 F.4th 1406, 1414 (Fed. Cir. 2022) (limiting term to "technique [that] is foundational to the written description's ensuing description" of claimed system).

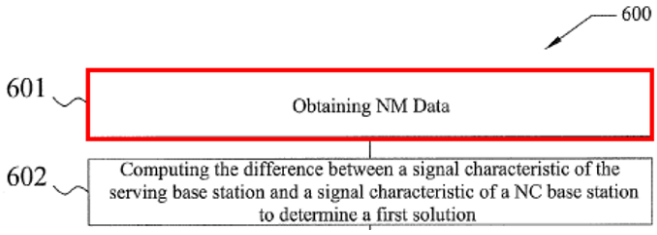
The rest of the specification confirms the invention is directed to obtaining and modifying

[5] *Trustees of Columbia Univ. in City of New York v. Symantec Corp.*, 811 F.3d 1359, 1366 (Fed. Cir. 2016). Geoscope has claimed the priority date of the provisional here.

measurement data from NMRs. For example, the specification says that "[t]he observed data would typically be the same or similar to the data in a network measurement report (NMR)." Ex. B, 9:42-44. This is also reflected in how the specification describes the exemplary "observed network measurement data," which contains the exact data the patent indicates is part of the NMR as reflected in the chart below. *Id.*, 4:13-18.

"Observed network measurement data"	"[O]bserved network measurement data includes a data set comprising: **[P1, P2 . . . , Pn, TA]**" Ex. B, '104 patent, claim 12.
"Network Measurement Report"	"An exemplary NMR may be represented by example_data_vector=**[P1, P2, P3, TA1]**." Ex. B, '104 patent, 4:13-14

Indeed, the specification discusses "obtaining NM data" and obtaining an "NMR" interchangeably. For example, in explaining Figure 6 (Annotated below), the specification equates step 601 ("[o]btaining NM data.") with obtaining an "NMR":



Id., Fig. 6; *id.*, 10:25-30 ("[an] NMR may be obtained (operation 601)"). And every embodiment of "observed network measurement data" in the specification involves measurement data from an NMR. There are no examples of how to obtain network measurement data other than by receiving NMRs, nor are there any examples of observed network measurement data that would not be part of the NMR. Ex. A, ¶ 46. The specification and provisional application thus confirm that the use of NMR is not merely a preferred embodiment; it is "foundational to the claimed invention" itself. *Quanergy Sys*, 24 F.4th at 1414. The POSITA would therefore have understood that "observed network measurement data" is obtained from NMRs. *Kinetic Concepts v. Blue Sky Med. Grp.*, 554

F.3d 1010, 1018-19 (Fed. Cir. 2009) (improper to "expand the scope of the claims far beyond anything described in the specification"); *Quanergy Sys*, 24 F.4th at 1414 (limiting "lidar" to "pulsed time-of-flight lidar" where written description focuses exclusively on this technique); *In re Power Integrations, Inc.*, 884 F.3d 1370, 1377 (Fed. Cir. 2018) (construing "coupled" narrowly where "every embodiment" in the patent shows a given feature).

Finally, one of the lead inventors confirmed that observed network measurement data refers specifically to "data from a network measurement report." Ex. R, 231:20-232:10. Mr. Carlson's understanding of the term further demonstrates that a POSITA would have understood that the observed network measurement data is obtained from an NMR, as Defendants propose. *See Voice Techs. Grp., Inc. v. VMC Sys., Inc.*, 164 F.3d 605, 615 (Fed. Cir. 1999) ("An inventor is a competent witness to explain the invention and what was intended to be conveyed by the specification and covered by the claims.").

C. "positioning determining equipment" ('358 Patent, claims 1, 41)

Plaintiff's Construction	Defendants' Construction
"equipment that processes received information to locate a position of a mobile device"	Subject to 35 U.S.C. § 112 ¶ 6. Function: "comparing said modified network measurement data with said database of calibration data" Structure: Indefinite

Means-plus-function claiming under 35 U.S.C. § 112 ¶ 6 allows a patentee to claim a "means or step for performing a specified function without . . . recit[ing] [the] . . . structure, material, or acts in support thereof." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347 (Fed. Cir. 2015) (en banc). The scope of such a claim is restricted to the "structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof," if any. *Id*. If no such structure is reasonably disclosed, the claim is invalid as indefinite. *Id.*, 1351-52. The purpose of this "structure" requirement is "to avoid pure functional claiming." *Aristocrat*

Techs. Australia Pty Ltd. v. Int'l Game Tech., 521 F.3d 1328, 1333 (Fed. Cir. 2008). Otherwise, a patentee could "claim all possible means of achieving a function" and thus turn a claiming technique intended for the patentee's convenience into a monopoly broader than the invention scope. *See Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009).

Although a phrase lacking the word "means" is presumptively not a means-plus-function term, it is nonetheless subject to § 112 ¶ 6 "if the challenger demonstrates that the claim term fails to 'recite sufficiently definite structure' or else recites function without reciting sufficient structure for performing that function." *Williamson*, 792 F.3d at 1348–49 (quotations omitted). The question is whether it is "understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure." *Id.*, 1349. The use of "nonce word[s]" such as "module" or "mechanism" is "tantamount to using the word 'means'" because such words do not denote sufficient structure. *Id.*, 1350.

Construing such a term is a two-step process. First, the court must identify the claimed function. *Id.*, 1351. Second, the court must determine what structure, if any, disclosed in the specification corresponds to that function. *Id.* When the identified function is performed by a general-purpose computer or processor, "the corresponding structure described in the patent specification must include an algorithm for performing the function, *i.e.*, the corresponding structure is a processor + algorithm." *Daedalus Blue, LLC v. MicroStrategy Inc.*, 2022 WL 1611758, at *4 (E.D. Va. Jan. 21, 2022), *report and recommendation adopted,* 2022 WL 710191 (E.D. Va. Mar. 9, 2022); *Rain Computing, Inc. v. Samsung Elecs. Am., Inc.*, 989 F.3d 1002, 1007 (Fed. Cir. 2021). If the specification fails to disclose an algorithm that is described in "understandable terms," the corresponding claims are invalid as indefinite. *Daedalus*, 2022 WL 1611758, at *4.

Under the governing authority, "positioning determining equipment' is a means-plus-function term. It is a function ("position determining") plus a nonce term ("equipment"). *See* Ex. A, ¶¶ 48-52. Courts analyzing analogous terms have reached the same conclusion. *See* Claim Construction Order, *Hardin v. Samsung Elecs. Co., Ltd.*, Case No. 2:21-CV-00290, Dkt. 86 at 5-8 (E.D. Tex. Aug. 25, 2022) ("location determination component"); *MTD Prods.*, 933 F.3d at 1343 ("mechanical control assembly"); *Midwest Athletics & Sports All. LLC v. Xerox Corp.*, 2020 WL 7692767, at *23–24 (W.D.N.Y. Dec. 28, 2020) ("comparison mechanism"); *Canon, Inc. v. TCL Elecs. Holdings Ltd.*, 2020 WL 2098197, at *46–47 (E.D. Tex. May 1, 2020) ("determining unit"); *TQ Delta, LLC v. 2Wire, Inc.*, 2018 WL 626472, at *10 (D. Del. Jan. 30, 2018) ("message determination module"). The same result should apply in this case.

The term "positioning determining equipment" is precisely the type of "black-box" courts regularly conclude invokes § 112 ¶ 6. It did not refer to a specific structure or class of structures, and would not have been understood by the POSITA as a known term of art as of February 5, 2007. Ex. A, ¶¶ 48-52. Plaintiff's proposed construction only underscores this fact by making clear that the term merely acts as a stand-in for any "equipment" that "processes received information to locate a position of a mobile device"—in any way. *Id.*, ¶¶ 55-56. But claim terms that encompass "*any* structure capable of performing the claimed function" are subject to § 112 ¶ 6. *Diebold Nixdorf, Inc. v. ITC*, 899 F.3d 1291, 1300-01 (Fed. Cir. 2018).

Neither the '358 patent's claims nor specification impart the needed structure to avoid § 112 ¶ 6. The "positioning determining equipment" is described in purely functional terms: it "determine[s] the location of the mobile station" by "comparing said modified network measurement data with said database of calibration data." Ex. A, ¶ 52. The claims provide none of the *structural* detail needed to render this term sufficiently definite. *Media Rights Techs., Inc.*

v. Capital One Fin. Corp., 800 F.3d 1366, 1373 (Fed. Cir. 2015) (description of a "term's function and interaction with other parts in the system" insufficient to "provide sufficient structure").

The vague disclosures in the specification are similarly insufficient. Although the phrase "position determining equipment" (or "PDE") appears several times in the specification, none of these disclosures relate to the structure of the PDE. For example, the only depiction of the "PDE 50" is a blank cylinder in Figure 1. The text of the specification fares no better, disclosing only that "NMR(s) may be transmitted from the MS or from other wireless communication components to position determining equipment (PDE) 50, which processes the received NMR information and may attempt to locate the position of the MS." Ex. C, 4:41-45; *see also id.*, 5:4-7; *id.*, 9:11-14. Although the specification discloses that the PDE may sometimes be associated with a "database," this "database" is used "during a calibration process," rather than the performance of the claimed function, *i.e.*, determining the location of the mobile station. Ex. C, 5:50-51, 6:46-47, 6:52, 7:26-30, 8:39-40. These descriptions of the PDE are untethered to the claimed functionality and impart no structure whatsoever to the claim term. Ex. A, ¶¶ 53-54.

Since "positioning determining equipment" is a means-plus-function term, it is indefinite unless the specification identifies sufficient structure reasonably associated with the claimed function. *Williamson*, 792 F.3d at 1350–51. "Structure disclosed in the specification qualifies as 'corresponding structure' if the intrinsic evidence clearly links or associates that structure to the function recited in the claim." *Id.*, 1352 (quoting *Noah Sys.*, 675 F.3d at 1311). And where "the function is performed by a general-purpose computer or microprocessor," the specification must "disclose the algorithm that the computer performs to accomplish that function." *Rain Computing*, 989 F.3d at 1007. The '358 patent has no disclosure of structures or algorithms for "comparing [a] modified network measurement data with [a] database of calibration data." Ex. A, ¶¶ 57-61.

First, as noted above, the specification does not explain what a PDE actually is. Second, the specification is silent as to what algorithms are used to "compar[e] said modified network measurement data with said database of calibration data." Although the words "compare" and "comparison" are littered through the specification, nowhere does it explain *how* to compare "modified network measurement data" with a "calibration database," aside from noting that such comparisons may be performed by a generic "processor," a "microprocessor," or "ASICS." Ex. A, ¶¶ 58-61. *Daedalus,* 2022 WL 1611758, at *4. The term is therefore indefinite.

III. '753 PATENT

The '753 patent, like the '104 Patent Family, describes estimating the location of a mobile device by comparing a "network measurement report" ("NMR") from an unknown location, against calibration data for known locations. Ex. E, claim 1; Ex. A, ¶ 62; *See* Ex. E, 2:36-50. The '753 patent describes first providing a set of "calibration data" at specific "calibration points" in a given region. Ex. E, 2:21-50. The system then generates one or more "grid points" from the calibration data. *Id.*; *see also id.*, Abstract. To locate a mobile device using these grid points, the claimed system receives NMRs from the mobile device, and identifies a subset of grid points to compare against the NMR received from the mobile device. Ex. A, ¶ 62. Once the system selects a subset of the grid points, it "determin[es] the location of a mobile device in said geographic region as a function of said selected set of grid points. Ex. E, claim 1.

A. "network measurement report" ('753 patent, claims 1 and 32)

Plaintiff's Construction	Defendants' Construction
collection of data associated with a wireless communication network or mobile device	"a report used in cellular networks which provides the results of a measurement from a mobile device on one or more cells"

As of the priority date of the '753 patent, "network measurement reports" were known in the art to be a specific type of report generated in cellular networks. A POSITA would understand

that the '753 patent's use of the term is consistent with the term of art. Ex. E, 9:53-56 (stating that NMR as used in the patent "is known in the art"). Plaintiff is now attempting to rewrite and expand the claims such that NRM refers to *any* "collection of data associated with a wireless communication network or mobile device." Plaintiff's rewrite should be rejected.

Where, as here, a term has a "well-understood meaning in the art at the time the patentees filed the application," that meaning should be adopted. *Starhome GmbH v. AT & T Mobility LLC*, 743 F.3d 849, 856 (Fed. Cir. 2014); *see also Ancora Techs., Inc. v. Apple, Inc.,* 744 F.3d 732, 737 (Fed. Cir. 2014). As of the patent filing, NMR was a specific term that referred to a report used in cellular networks that contain measurements made by a mobile device on the surrounding cell towers. Ex. A, ¶¶ 64-70; Ex. R, 231:6-11 (explaining that NMR is a term of art and "a well-known term in the -- sort of the normal language used for control plane functions in a cellular system"). Contemporaneous technical documents corroborate this meaning. For example, the Open Mobile Alliance, which establishes common standards for cell phone networks, identifies the NMR as a specific report that contains measurements from the mobile device on the surrounding cell towers. Ex. A. ¶ 68; Ex. A1 at 21. Likewise, Andrew LLC, the original assignee of the patents, defined NMR as "provid[ing] the results of the measurements made by a [mobile station] on the serving cell and neighbor cells." Ex. Q, 4; *see also* Ex. P, 293:13-294:14 (confirming definition). Nothing in the '753 patent suggest the inventors intended to depart from the commonly accepted meaning of "NMR." *See Lone Star Silicon Innovations LLC v. Iancu*, 813 F. App'x 512, 519 (Fed. Cir. 2020) (claim term given "well-understood meaning" in the art unless the specification shows a "clear intent, either expressly or implicitly, to redefine" the term).

Defendants' proposal is also supported by the specification, which refers to "NMR" "as is known in the art," Ex. E, 9:53-56, and describes it as including observed signal strength, round

trip time for the signal, timing parameters for the signal between the mobile device and cell towers, and the identity of the serving cells. *Id.,* 9:59-10:8. Each of these parameters reflect measurements by the mobile device on surrounding cell towers, and would be understood by the POSITA to be part of the well-understood NMR. Ex. A, ¶ 73.

The prosecution history confirms that NMR is a term of art that refers to a specific report, not simply any "collection of data." During prosecution, the examiner rejected the pending claims over prior art that disclosed receiving signal strength measurements from a mobile device. Ex. I, 4. To distinguish that art, the applicant stated that "[a]s the Office is aware, a network measurement report (NMR) is a report that includes calibration data for a number of locations in an area." Therefore, "a reception of [received signal strength] values does not necessarily mean that an NMR is received." *Id.* In other words, the applicant asserted that "NMR" cannot simply be ***any*** data or information, but instead refers to a ***specific*** type of report generated by the mobile device. As the Federal Circuit has made clear, "[a]ny explanation, elaboration, or qualification presented by the inventor during patent examination is relevant, for the role of claim construction is to 'capture the scope of the actual invention' that is disclosed, described, and patented." *Fenner Invs., Ltd. v. Cellco P'ship*, 778 F.3d 1320, 1323 (Fed. Cir. 2015).

The testimony of both inventors who have testified to date reinforces Defendants' proposal. Although such testimony is extrinsic evidence, "the inventor is a competent witness to explain the invention." *Voice Techs. Grp., Inc. v. VMC Sys., Inc.*, 164 F.3d 605, 615 (Fed. Cir. 1999); *see also Toshiba Corp. v. Juniper Networks, Inc.*, 248 F. App'x 170, 173 (Fed. Cir. 2007) (relying on inventor testimony to construe claim). Here, the inventors unequivocally testified that NMR is a term of art that refers to measurements made by a mobile device on surrounding cell towers. Ex. R, 231:6-232:10 (confirming that NMR is a term of art and "a well-known term" in the field); Ex.

P, 294:2-7 (confirming that "NMR is a term that's used to provide the measurement made by mobile station on the serving cell and neighbor cells").

Plaintiff's litigation-driven proposal is untethered to the patent. On its face, Plaintiff's construction means that NMR can include ***any*** "collection of data"—regardless of whether it represents a "network measurement" of any kind. But even as a matter of plain English, "network measurement report" implies a *report* that contains network measurements. The term, therefore, plainly means something narrower than a "collection of data associated with a wireless communication network or mobile device." That alone should foreclose Plaintiff's proposed construction. *Bancorp Services, L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1372 (Fed. Cir. 2004) (proper construction should account for the meaning of individual "components of the term."). By broadening "NMR" to encompass any type of data on a mobile phone, Plaintiff seeks to identify nearly anything as potentially infringing to suit its case. Its rewrite should be rejected.

B. "grid point" ('104 patent, claim 2; '358 patent, claims 4, 18, and 42; '494 patent, claims 4, 26; '753 patent, claims 1, 32)[6]

Plaintiff's Construction	Defendants' Construction
"locations or areas that are determined and associated with a particular set or sets of calibration data"	Grid point: "a point associated with representative calibration data for an area"

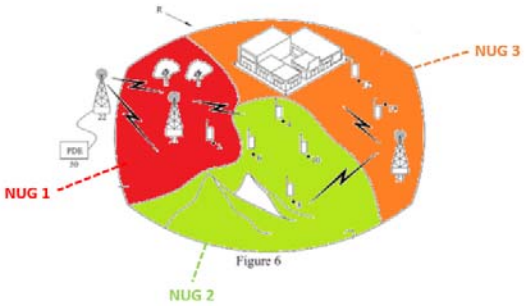
The parties agree that "grid point" requires construction. It is a technical term with extensive descriptions in the specifications for the '753 and '104 Patent Family, and construing the term will assist the jury in understanding what it means. *Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010). The claimed grid points represent an ***area*** for which calibration data is sufficiently similar that they can be represented by a single ***point*** for the entire

[6] "Grid point" is also used in certain claims of the '104 Patent Family and should be construed consistently there. Because it is more of a focus of the '753 patent, we address the term here.

area. Defendants' proposal captures that essence of a "grid point"; Plaintiff's does not.

The '753 patent and '104 Patent Family include extensive discussions of grid points in the specifications and figures. *See Anderson Corp.*, 474 F.3d at 1374-75 (relying on sibling patent specification to construe term in asserted patents where it was clear that the term to be construed as used in both patents were the same). For example, the '104 Patent Family discusses how "NUGs" (*i.e.*, non-uniform grid points) "represent[s] the signal characteristics and/or calibration data ***over a given region***." Ex. B, 3:50–52. The '104 Patent Family also teaches using a single point to represent an area to simplify data storage and retrieval: "NUGs ***represent an area*** of collected calibration data, which may be stored in a database for easy retrieval during a calibration data comparison operation between the NUG and a received network measurement report." Ex. B, 3:56–60. That is, for efficiency, the described system stores only one point for a given NUG, because the NUG represents an area for which all of the points within it would be similar if measured, so each point is representative of the area. *Id.*; *see also* Ex. E, 10:29-11:7; Ex. A, ¶ 79. The '104 patent further teaches that natural obstacles, like mountains or buildings, which can impact how a signal is received, can form the boundaries of the NUGs. Ex. B, 4:1-4. That natural obstacles can form a grid point boundary further confirms that the grid point represents an ***area*** with defined boundaries.

Figure 6 of the '784 patent, based on the same provisional application, further confirms that each grid point (i.e., NUG) represents an ***area***, not a specific location:



Ex. F, Fig. 6 (annotated); *id.*, 3:12-13. The '784 patent states that Figure 6 "illustrates a geographical ***region*** (R) having NUGs represented by NUG1, NUG2, and NUG3. The NUGS ***represent an area*** of collected calibration data based on data collected via data collection devices . . . identified within the geographical region of the NUG[.]" Ex. F, 6:22-28. Indeed, the nomenclature of "uniform grid points" and "non-uniform grid points" itself confirms that the points represent ***areas***. Specific locations do not have shapes, so they cannot be non-uniform. Ex. A, ¶¶ 80-81.

The specification of the '753 patent discusses in detail how grid points are generated. The system starts with a single point, which forms the "root" of a given NUG representing an area. Ex. E, 10:42-43. Nearby points are evaluated for "statistical sufficiency" to determine whether they are "statistically [] similar" such that they should be part of the same NUG, or instead part of a different NUG. *Id.*, 10:44-65.[7] Once the NUG is defined, the system can store a single point within the NUG because that point is, by definition, representative of (*i.e.*, statistically similar to) the other points within the NUG. *Id.*, 10:29-11:7. Indeed, the specification describes dividing the entire region "into a collection of NUGs," *id.*, 12:4-7, and that "[t]he geometrical shape (i.e., shape defined by the ***union of locations of calibration points*** assigned to the NUG) and the amount of data accumulated into such NUGs is seen to be variable since these are determined by the statistical similarity of the data allocated to a NUG," *id.*, 12:9-14.

Thus, the intrinsic record repeatedly confirms that a grid point is a point that represents calibration data across an area (*i.e.*, an area over which calibration data is sufficiently similar). While not necessary to resolve the dispute, the inventor Mr. Carlson confirmed that grid points

[7] If each point is statistically dissimilar, each "may become the root of a separate NUG." *Id.*

represent an area with similar calibration data. Ex. A, ¶ 84; Ex. R, 92:16-93:20, 93:21-94:7.

Plaintiff's construction attempts to improperly broaden the meaning of the term "grid point" in two key respects. First, Plaintiff argues that the grid point can be a specific "location," rather than an area. As shown above, that is plainly inconsistent with the intrinsic record. Second, Plaintiff ignores the "representativeness" requirement of the grid point, which is the entire purpose of the grid point in the first instance, and is expressly part of the patents' description of grid points. Plaintiff's unsupported attempt to broaden the claims should be rejected. Ex. A, ¶ 85.

C. "evaluating said at least one network measurement report with each of said sets of grid points as a function of select ones of said characterizing parameters"; "evaluate said at least one network measurement report with each of said sets of grid points as a function of select ones of said characterizing parameters" ('753 Patent, claims 1, 32)

Plaintiff's Construction	Defendants' Construction
Plain and ordinary meaning (no construction necessary); in the alternative, analyzing the collection of data associated with a wireless communication network or mobile device based on information	Indefinite

These terms are indefinite. At a high level, the '753 patent describes using some criteria to identify a subset of grid points to compare against the NMR received from the mobile device. Ex. A, ¶ 94. This concept is vaguely invoked in two separate, ill-defined steps in claim 1: "(d) evaluating said at least one network measurement report with each of said sets of grid points as a function of select ones of said characterizing parameters;" (the "evaluating" step) and then "(e) selecting a set of grid points as a function of a predetermined criteria" (the "selecting" step). A POSITA would not understand the scope of the "evaluating" limitation with reasonable certainty. There is no guidance in the intrinsic record about what it means to "*evaluat[e]*" an NMR "as a function of select ones of said *characterizing parameters*." Nor would the POSITA understand what the "characterizing parameters" are or how they differ from the "predetermined criteria" used

in the "selecting" limitation. Because the "scope of the claim[] [is not] sufficiently definite to inform the public of the bounds of the protected invention," it is indefinite. *Halliburton Energy Services, Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008).

The test for determining whether a claim is sufficiently definite is whether a POSITA would understand the bounds of the claims with "reasonable certainty." *Nautilus*, 572 U.S. at 910. The limitation at issue fails that test. It requires "evaluating [a] network measurement report with each of said sets of grid points as a function of select ones of said characterizing parameters," but the specification provides no objective bounds on what such an "evaluation" is, or what the recited "characterizing parameters" are and are not. As to the first issue, the POSITA would not know whether the required "evaluation" requires comparison, a review, a mathematical operation, or something else entirely. *See* Ex. A, ¶¶ 88-89. However, "a patent must be precise enough to afford clear notice of what is claimed, thereby 'appris[ing] the public of what is still open to them.'" *Nautilus*, 572 U.S. at 909.

Even if the claimed "evaluat[ion]" somehow were sufficiently clear, the POSITA still would not reasonably understand the bounds of the claimed "characterizing parameters" that must be used in the evaluation. Although the specification provides "exemplary characterizing parameter[s]"—"signal strength . . . , round trip time . . . , timing advance of a signal received by the mobile device at the grid point, time difference of arrival . . . , the identification of a serving cell or serving sector . . . , a state of a wireless network serving the mobile device"—it makes clear that the scope of the term "is not limited to" these examples. Ex. I, 51:42-58. Such non-exhaustive lists do not establish the bounds for a claim term. *See Int'l Test Sols.*, 2017 WL 1367975, at *5 (N.D. Cal. Apr. 10, 2017). The specification, moreover, neither defines the "characterizing parameters" nor discloses any features that are common to such parameters, so as to allow a

POSITA to ascertain what type of information would fall within the scope of the term. *Id.;* Ex. A, ¶ 93. "A skilled artisan, having developed a superior set" of characterizing parameters, therefore, would have "no objective boundary … to determine" whether their invention infringed the asserted patent. *Int'l Test Sols., Inc. v. Mipox Int'l Corp.*, No. 16-CV-00791-RS, 2017 WL 1367975, at *6 (N.D. Cal. Apr. 10, 2017).

This uncertainty is amplified by the claims as a whole. The following limitation of the claims at issue requires "selecting a set of grid points as a function of a ***predetermined criteria***." Although "characterizing parameters" and "predetermined criteria" are different and thus "presumed to have different meanings," *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008), the specification does not define either term or specify how they relate to—or differ from—one another. Indeed, when asked to explain how these claim limitations mapped onto the work that led to the '753 patent, one of the inventors was completely unable to do so—or to understand what these limitations in the claim mean. Ex. P, 309:9-312:15 ("I don't understand claim [limitations] (d) and (e)."). Where, as here, an inventor "was unable to testify to the meaning of that term," that supports a finding of indefiniteness. *See Inguran, LLC v. ABS Glob., Inc.,* No. 17-CV-446-WMC, 2019 WL 943515, at *6 (W.D. Wis. Feb. 26, 2019).[8]

Plaintiff's "alternative" construction only underscores the term's indefiniteness. Plaintiff proposes rewriting "evaluating" as "analyzing," which does nothing to explain what the claim covers and what it does not. Plaintiff also redrafts "characterizing parameter" into "information associated with a signal or network." This construction essentially reduces the pair of limitations

[8] Courts have found similar terms and phrases indefinite. *Cap. Sec. Sys., Inc. v. NCR Corp.*, 725 F. App'x 952, 959 (Fed. Cir. 2018) ("transactional operator"); *Int'l Test Sols.*, 2017 WL 1367975, at *5 ("predetermined characteristics"); *Skyhook Wireless, Inc. v. Google, Inc.*, No. CIV.A. 10-11571-RWZ, 2014 WL 898595, at *3 (D. Mass. Mar. 6, 2014) ("estimated characteristics").

to analyzing one set of network information against another set of network information, even though the patent does not provide *any* guidance on what qualifies as the requisite "analyzing" or "information." Plaintiff's inability to clarify the limitation is another reason the Court should find the limitation indefinite. *See NCR Corp.,* 725 F. App'x at 959 (claim term indefinite in part because patentee's construction does not clarify term).

IV. '784 PATENT

U.S. Patent No. 9,097,784 ("the '784 patent") concerns collecting data for a "calibration database." Ex. F, Abstract. The patent states that this database comprises types of collected data that relate to a wireless device and can be used to detect its location. *Id.*, 1:25–28. The patent states that because this data may not always be accurate for various reasons, such as "poor satellite visibility," the data can be modified or replaced with data believed to be more accurate. *Id.*, 1:30–67, 2:2–8, 4:60–67, 5:2–13. The claims themselves do not expressly recite any such modification or replacement of inaccurate data, however. Instead, the claims generally involve (1) determining the most likely street on which a mobile device is located, (2) determining a "point" that is "in proximity" to that street, and (3) entering into a "calibration database" that the street location and the point are associated. *See, e.g.*, *id.*, 9:16–43.

A. "in proximity" ('784 patent, claims 2, 10, 11, 21, 22)

Plaintiff's Construction	Defendants' Construction
Plain and ordinary meaning (no construction necessary)	Indefinite

The '784 patent does not provide any guidance as to the bounds of the term "in proximity," and thus it is indefinite. Indeed, any question of infringement—which requires "determining a first point of said plural points that is *in proximity* to said first geographic location"—would be wholly subjective. A POSITA would have no way to determine from the claims or elsewhere in the intrinsic record whether they are within or outside the scope of this element. Ex. A, ¶¶ 102,

99-100.

In *Interval Licensing LLC v. AOL, Inc.*, the Federal Circuit explained that a term of degree, like this one, is indefinite unless the intrinsic record provides "objective boundaries for those of skill in the art." 766 F.3d 1364, 1370–71 (Fed. Cir. 2014). The Federal Circuit held that the term "unobtrusive manner" was indefinite because it was "highly subjective and, on its face, provide[d] little guidance to one of skill in the art." *Id.*, 1371. The Court further found that "the specification [was] at best muddled, leaving one unsure of whether the 'unobtrusive manner' phrase has temporal dimensions as well as spatial dimensions." *Id.*, 1372. So too here. The '784 patent offers no objective boundaries for the term "in proximity." Nor does it provide any guidance as to the degree of "proximity" required to meet the claim. Ex. A, ¶¶ 99-102. The term "in proximity" appears just four times in the specification, but in no instance does the specification articulate any objective boundary or guidance. *See* Ex. F, 2:16–20; 2:33–35; 2:44–48; 8:66–9:2.

In that regard, the claim term at issue is no different from the term "proximity," which was found to be indefinite in *Abdou v. Alphatec Spine, Inc.*, 2014 WL 6611422, at *8-9 (S.D. Cal. Nov. 19, 2014). As with the '784 patent, the patent there offered "nothing in the claims or specification [that would] tell[] a person of ordinary skill in the art what the . . . spa[t]ial relationship, or proximity should be." *Id.*, *9. Other courts have similarly held other spatial terms (*e.g.*, "near") to be indefinite when left unbounded and undefined. *E.g.*, *Neurografix Patent Litig.*, 201 F. Supp. 3d 206, 222–23 (D. Mass. 2016) (term "near said exciting and output arrangement . . ." indefinite).

Inventor testimony yet again confirms that the term is indefinite. As Mr. Carlson testified:

> **Q.** How close does it have to be to be in proximity?
> **A.** I don't know.
> **Q.** Does it -- does it have to be within a mile?
> **A.** I mean ***the way this claim is written, I don't think there is any kind of absolute metric I could associate with that***.
> **Q.** So there is ***no line*** that you can discern from this claim for ***when something is***

> ***in proximity versus when it's not***? . . .
> **A.** I would agree with that.

Ex. R, 242:17-243:8.

The Asserted Claims—each of which incorporates this term—are thus indefinite.

B. "determining said most likely street as a first one of said plural geographic locations" (and "determining from said status a most likely one of said plural streets upon which said wireless device is located") ('784 patent, claims 2, 10, 11, 21, 22)

Plaintiff's Construction	Defendants' Construction
Plain and ordinary meaning (no construction necessary)	Indefinite

This term is nonsensical, inoperable, and renders the claims indefinite as a matter of law. *See Synchronoss Techs., Inc. v. Dropbox, Inc.*, 987 F.3d 1358, 1366-67 (Fed. Cir. 2021) (claims that "are nonsensical and require an impossibility . . . are indefinite as a matter of law under § 112, paragraph 2."); *Koki Holdings Co. v. Kyocera Senco Indus. Tools, Inc.*, 2021 WL 1092579, at *1 (D. Del. Mar. 22, 2021) ("A claim that is nonsensical or requires an impossibility is indefinite as a matter of law"); *Fundamental Innovation Sys. Int'l LLC v. Samsung Elecs. Co.*, 2018 WL 647734, at *40 (E.D. Tex. Jan. 31, 2018) ("internally inconsistent" claim indefinite). In relevant part, the claims recite:

> obtaining location data of a plurality of geographic locations situated within said region, wherein said location data is determined using said wireless device, and wherein said region contains plural streets and intersections of said plural streets; . . .
>
> [1] determining a status of said wireless device;
>
> [2] determining from said status a most likely one of said plural streets upon which said wireless device is located;
>
> **[3] determining said most likely street as a first one of said plural geographic locations;**
>
> [4] determining a first point of said plural points that is in proximity to said first geographic location; and . . .

Ex. F, cls. 1, 9. The third "determining" limitation (in **red**) was not in the original claims that the patentee proposed—in fact, it was not even the patentee's idea. Instead, the patent examiner proposed adding that limitation during an interview, the patentee "agreed to the proposed amendments" shortly thereafter to get the claims allowed. Ex L, 3; Ex. K; Ex. A, ¶ 105.

The examiner's addition of this third "determining" step broke the claims, rendering them inoperable and nonsensical. Ex. A, ¶¶ 103, 106-108. In the earlier "obtaining" step, location data for a plurality of geographic locations is determined. Subsequently, the first "determining" step requires determining a status of the wireless device. Ex. F, cls.1, 9. Then, the second "determining step" requires determining, based on the status, "a most likely one of said plural streets upon which said wireless device is located" is determined. *Id.* At that point, the geographic locations have already been "obtained" and the most likely street has been determined. Ex. A, ¶¶ 106-107.

Nonetheless, the examiner's additional, **third "determining" step** backtracks and determines "said most likely street as a first one of said plural geographic locations"—as if the geographical locations had not already been obtained and as if the most likely street had not already been determined. In other words, this third "determining" step requires determining the already-determined *street* is the already-determined *location*. This makes no sense because, as discussed above, the location (whether a street, an intersection, or some other point on a map) was *already determined* in the earlier, second "determining" step. Ex. A., ¶¶ 106-108.

Critically, this third determining step is not just repetitive, it is impossible. That is because the two conflicting "determining" steps require that the same "most likely street" be determined two different ways—once "from said status [of said wireless device]" and next "as a first one of said plural geographic locations." Because the **third "determining" step** refers to the "most likely street" as "*said* most likely street," it must be the same street in both steps. *Salazar v. AT&T*

Mobility LLC, 64 F.4th 1311, 1315-17 (Fed. Cir. 2023) ("said fabric roll" in a claim limitation "was the same 'one or more' pre-soaked fabric rolls that were referred to earlier in the claim"). But that is impossible. In essence the claim requires determining the most likely street as Main Street in one step, and then determining Main Street as something else entirely in the following step. Ex. A, ¶ 106-11. There is simply no sensible way to interpret this element so that the claim works and makes sense, and thus the term is indefinite. *Synchronoss Techs.*, 987 F.3d at 1366–67; *Koki Holdings Co.*, 2021 WL 1092579, at *1.

Even the two inventors who have been deposed to date could not make any sense of this third "determining" step. Mr. Carlson testified, "It is ***difficult for me to understand*** what that really means . . . I am ***not really sure what that means***." Ex. R, 121:19-22; *id.*, 122:11-17 ("Q. As someone who has been in this field for a while are the words in these two determining steps sufficiently clear for you to understand whether a product or service that you are using meets these words? . . . A. ***Probably not***."). Mr. Mazlum likewise could not decipher the language, testifying "the language used here isn't clear to me" and "***I'm lost with reading his words***." Ex. P, 190:4-18. That the inventors themselves are just as "lost" as the litigants in trying to understand the claim language is strong evidence that the claims are indefinite. *Inguran*, 2019 WL 943515, at *6; *Dow Chem. Co. v. NOVA Chemicals Corp. (Canada)*, 629 F. Supp. 2d 397, 407 (D. Del. 2009) (trier of fact could conclude claims indefinite where "a named inventor on the patents-in-suit was even unable to explain how to carry out" limitation at issue).

C. Order of "obtaining" and "determining" steps ('784 patent, claims 2, 10, 11, 21, 22)

Plaintiff's Construction	Defendants' Construction
No construction necessary	"obtaining . . ." must occur before "determining . . . a most likely one of plural streets," which must occur before "determining said most likely street," which must occur

	before "determining a first point of said plural points"

The steps recited in the independent claims of the '784 patent must be performed in the order recited. Federal Circuit precedent makes clear that when a later step refers to and relies on the results of an earlier step, the steps should be construed to be performed in order. *Mformation Techs., Inc. v. Res. in Motion Ltd.*, 764 F.3d 1392, 1398–99 (Fed. Cir. 2014); *Altris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369-70 (Fed. Cir. 2003); *Wi-LAN, Inc. v. Apple, Inc.*, 811 F.3d 455, 462 (Fed. Cir. 2016) ("Subsequent use of the definite articles 'the' or 'said' in a claim refers back to the same term recited earlier in the claim").

Logic and grammar require the obtaining and determining steps to be performed in the order recited. Independent claim 1 states, in relevant part:

> [A] obtaining location data of *a plurality of geographic locations* situated within said region, wherein said location data is determined using said wireless device, and wherein said *region contains plural streets and intersections of said plural streets;* . . . .
> [B] determining . . . *a most likely one of said plural streets* upon which said wireless device is located;
> [C] determining *said most likely street* as *a first one of said plural geographic locations*;
> [D] determining a first point of said plural points that is in proximity to *said first geographic location*; and . . .

As shown above, "the sequential nature of the claim steps is apparent from the plain meaning of this claim language" as each step references the preceding step. *Mantech Envtl. Corp. v. Hudson Envtl. Servs., Inc.*, 152 F.3d 1368, 1375–76 (Fed. Cir. 1998). The specification further supports this interpretation. For example, Figure 9 depicts an embodiment with the obtaining step followed by the three recited determining steps. *See* Ex. F. To switch or mix the orders of these claims would render the word "said" meaningless, and would deprive different limitations of an antecedent bases.

V. '264 PATENT

The '264 patent describes and claims systems and methods for determining the "path loss" value of a wireless signal that is transmitted by a wireless device and received by a receiver. "Path loss is a measure of signal attenuation" and "is the difference between the transmitted signal power and the received signal power." Ex. G, 1:19-31.

A. "wireless device" ('264 Patent, claims 1, 13)

Plaintiff's Construction	Defendants' Construction
"device capable of communicating using a wireless network, including a wireless transmitter, radio frequency transmitter, mobile telephone, cellular telephone, text messaging device, portable computer, laptop computer, personal digital assistant, vehicle security device, vehicle tracking device and pager"	"a mobile device configured to communicate while unattached to any physical wires"

Defendants' proposal describes what a POSITA would have understood the term "wireless device" to mean in the context of the '264 patent, and should be adopted. Plaintiff instead seeks to expand this term to cover devices that would never have been considered a "wireless device"—*i.e.*, devices that are not mobile and that require a connection to physical wires to communicate.

Each claim of the '264 patent requires the measurement of path loss on "a signal transmitted ***from a wireless device*** and ***received by a receiver***." Ex. G, Abstract; *see also id.*, cls. 1, 13, 23, 31. Plaintiff's construction seeks to eliminate the direction of that measurement by conflating what can be the claimed wireless device and receiver. The specification of the '264 patent provides numerous examples of "wireless devices" in the context of the claimed invention, and each example is of a device that a POSITA would have understood is both mobile and configured to communicate while unattached to any physical wires. *Id.*, 5:39-43; Ex. A, ¶¶ 115-122. Specifically, the specification gives as examples "a wireless transmitter, radio frequency

transmitter, mobile telephone, cellular telephone, text messaging device, portable computer, laptop computer, personal digital assistant, vehicle security device, vehicle tracking device and pager," a class of mobile devices that are "wireless"—that is, they are configured to communicate while unattached to any physical wires. Ex. G, 5:39-43; *see also id.*, cls. 6, 27; Ex. A, ¶¶ 117-120.

Plaintiff's proposed construction *appears* to adhere to this list, but includes a subtle—but significant—sleight of hand. Through the "device capable of communicating using a wireless network, including" language, Plaintiff would expand the class of devices to include devices that are not mobile, but are hardwired to the network and may *also* communicate wirelessly. Plaintiff's attempt to expand the scope of this term is no mistake. It seeks to sweep into the term "wireless device" cellular base stations, which are large immobile devices connected via physical wires to a network and power source, which can *also* communicate wirelessly to wireless—*i.e.*, mobile—devices. Ex. A, ¶¶ 116, 121-122. But cellular base stations are never considered "wireless devices" in the patent. Instead, where base stations are contemplated, they are one of the devices that may be the claimed "receiver." Ex. A, ¶¶ 121-122; Ex. G, cl. 1, 4, 4:9-12; 5:43-45.

While another wireless device may fall within the meaning of the term "receiver," there is no intrinsic support for the notion that a base station (an example of a receiver) may be a "wireless device." Ex. G, 3:19-22; *see also id.*, 5:43-45, claims 4, 5, 21, 26. Adopting Plaintiff's construction would render the distinction between a wireless device and a receiver superfluous. *See, e.g.*, *Cap. Bridge Co. v. IVL Techs. Ltd.*, 2006 WL 2585529, at *9 (S.D.N.Y. Aug. 30, 2006) ("Wireless means *without* wires, the opposite of which is *with* wires. . . . It is illogical to find that wired is equivalent to its opposite-wireless."), *aff'd,* 232 F. App'x 987 (Fed. Cir. 2007); *Netscape Communs. Corp. v. Valueclick, Inc.*, 684 F. Supp. 2d 678, 690 (E.D. Va. 2009) ("[I]n the absence of any evidence to the contrary, we must presume that the use of these different terms in

the claims connote different meanings."). Plaintiff's construction is also inconsistent with the prosecution history of the '264 patent, where Applicants repeatedly characterized the claimed "wireless device" as a "mobile device," which is not a term that covers immobile things such as cellular base stations. *See* Ex. A, ¶ 123; Ex. O, 12-13, 16; Ex. N, 2-4, 7.

Consistent with the intrinsic evidence, even John Carlson, a named inventor of the '264 patent, agreed at deposition that the claims were directed to a method where "the receiver is the base station and the transmitter is the mobile device." *See* Ex. R, 139:19-140:11.

B. "indication of transmission signal strength of said signal" ('264 patent, claims 1, 13)

Plaintiff's Construction	Defendants' Construction
Plain and ordinary meaning (no construction necessary); *in the alternative*, "information regarding the transmission signal strength of the signal"	"information specifying the strength (e.g., in dBm) at which said signal was transmitted by the wireless device"

Defendants' construction reflects that the "indication of transmission signal strength" specifies the strength at which the signal was transmitted by the wireless device, and is how a POSITA would have understood the term. Plaintiff's proposed construction attempts to broaden the claim term to read out the fact that the transmission signal strength *specifies* the signal strength of the signal transmitted *by the wireless device*.

Each claim of the '264 patent requires "receiv[ing] at said receiver an indication of transmission signal strength of [the] signal." Ex. G, cls. 1, 13, 23, 31. The specification makes clear that the claimed "indication of transmission signal strength" is distinct from the measurement of received signal strength from the wireless device—which is separately recited in the claims—and represents *additional* information that is transmitted by the wireless device to the receiver. Ex. A, ¶¶ 128-131; Ex. G, 4:46-48; *id.*, 6:19-23. A POSITA reading this specification would have understood this "indication of transmission signal strength" to refer to the transmit power, a

common parameter in radio-frequency networks and, in particular, cellular networks, which is distinct from the *measured* signal strength at the receiver or other data. Ex. A, ¶¶ 129, 133.

The prosecution history and inventor testimony confirm this understanding. When distinguishing prior art during prosecution, the Applicant took the position that "measuring at said receiver the received signal strength" and "receiving the transmit signal strength of said signal" were different things, raising distinct arguments directed to the "measuring" limitation. *See* Ex. A, ¶ 134; Ex. M, 16. And when Mr. Carlson was asked about this term at his deposition, he agreed that "indication of transmission signal strength of said signal" referred to information separate from the received signal strength that was necessary to perform the path loss value calculation recited in the later steps of the claims, and further testified that he did not think that "one [could] determine the transmitted signal strength just by measuring the received signal strength." *See* Ex. R, 132:20-135:12. As the specification explains, this calculation requires the "transmitted signal power," *i.e.*, transmission signal strength, which is typically expressed in units of decibels (dB or dBm). Ex. G, 1:19-31.

Plaintiff seeks to expand the term to cover not simply the transmission of the wireless signal strength, but any "information ***regarding*** the transmission signal strength of the signal." Contrary to the intrinsic evidence, that construction would allow Plaintiff to assert that any information that could be used to determine or estimate—or apparently relates in any way to—the transmission signal strength falls within the claim. There is no support for this expansive reading.

Dated: May 26, 2023

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