

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

GEOSCOPE TECHNOLOGIES PTE. LTD.
Patent Owner

Case No. IPR2023-01212
U.S. Patent No. 8,406,753

DECLARATION OF MR. MARK ALAN STURZA

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. BACKGROUND AND QUALIFICATIONS.....	2
III. MATERIALS CONSIDERED	8
IV. LEGAL STANDARDS.....	8
A. Claim Construction	9
B. Level of Ordinary Skill in the Art	9
C. Anticipation.....	10
D. Obviousness.....	10
V. LEVEL OF ORDINARY SKILL IN THE ART	12
VI. BACKGROUND OF THE TECHNOLOGY.....	13
VII. OVERVIEW OF THE '753 PATENT	17
VIII. CLAIM CONSTRUCTION.....	27
A. The District Court’s Construction of “Grid Point” (“a point associated with representative calibration data for an area”).....	28
IX. PATENTABILITY ANALYSIS OF THE CHALLENGED CLAIMS OF THE '753 PATENT.....	35
A. Ground 1: Anticipation based on Spain or Obviousness Based on Spain, Alone or in Combination with Agiwal.....	35
X. CONCLUSION	40

LIST OF EXHIBITS

Exhibit No.	Petitioner's Exhibits
1001	U.S. Patent No. 8,406,753, issued on March 26, 2013 (“the ’753 Patent”)
1002	File History of U.S. Patent Application No. 12/026,480, filed on February 5, 2008 (“the ’480 Application”)
1003	U.S. Provisional Application No. 60/899,379, filed on February 5, 2007
1004	Not Assigned
1005	A. Agiwal et al., “LOCATOR-Location Estimation System for Wireless LANs” 2004
1006	U.S. Patent Publication No. 2003/0064735, published on April 3, 2003 to D. Spain <i>et al.</i> (“Spain”)
1007	Appendix D to Geoscope’s Preliminary Infringement Contentions dated April 7, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC f/k/a Google Inc.</i> , Civ. Action No. 1:22-cv-01331 (EDVA)
1008	Declaration of David Hilliard Williams
1009	<i>Curriculum Vitae</i> of David Hilliard Williams
1010	Declaration of Dr. Sylvia Hall-Ellis
1011	<i>Curriculum Vitae</i> of Dr. Sylvia Hall-Ellis
1012	Complaint dated November 22, 2022, <i>Geoscope Technologies Pte. Ltd. v. Google LLC f/k/a Google Inc.</i> , Civ. Action No. 1:22-cv-01331 (EDVA) filed on November 22, 2022 (“the Related Litigation”)
1013	Preliminary Identification of Asserted Claims dated March 27,

	2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC f/k/a Google Inc.</i> , Civ. Action No. 1:22-cv-01331 (EDVA) filed on November 22, 2022
1014	U.S. Patent Publication No. 2005/0266855, published on December 1, 2005 to G. Zeng <i>et al.</i> (“Zeng”)
1015	U.S. Patent No. 7,167,714, issued on January 23, 2007 to R. Dressler and D. Spain, Jr. <i>et al.</i> (“Dressler”)
1016	Difference comparison between the text of the Specifications of the Dressler and Spain
1017	U.S. Patent No. 7,433,695, issued on October 7, 2008 to S. Gordon <i>et al.</i> (“Gordon”)
1018	U.S. Patent No. 7,561,104, issued on July 14, 2009 to M. Alles <i>et al.</i> (“the ’104 Patent”)
1019	File History of Reexamination Control No. 90/012,694 (“the ’694 Reexamination”)
1020	Difference comparison between the text of the Specifications of the Gordon and Spain
1021	U.S. Patent No. 7,460,505, issued on December 2, 2008 to D. Spain (“the ’505 Patent”)
1022	Difference comparison between the text of the Specifications of the ’505 Patent and Spain
1023	Plaintiff Geoscope Technologies PTE. LTD.’s Opening Claim Construction Brief, E.D. Va. Civil Action No. 1:22-cv-01373-MSN-JFA (Dkt. No. 75).
1024	Stipulation Regarding Agreed Upon Claim Constructions dated May 23, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC f/k/a Google Inc.</i> , Civ. Action No. 1:22-cv-01331 (EDVA) filed on November 22, 2022
1025	Google LLC’s Opening Claim Construction Brief dated May

	26, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC f/k/a Google Inc.</i> , Civ. Action No. 1:22-cv-01331 (EDVA) filed on November 22, 2022
1026	Not Assigned
1027	Not Assigned
1028	Claim Construction Memorandum Opinion & Order dated July 19, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC f/k/a Google Inc.</i> , Civ. Action No. 1:22-cv-01331 (EDVA) filed on November 22, 2022
	Patent Owner's Exhibits
2001	Declaration of Christopher M. Gerson in Support of Patent Owner's Motion for Pro Hac Vice Admission of Christopher M. Gerson Under 37 C.F.R. § 42.10(c)
2002	U.S. Patent No. 6,944,465, issued on September 13, 2005 to D. Spain et al. ("Spain '465 Patent")
2003	Memorandum Opinion on Google's Motion for Judgment on the Pleadings on Patent Eligibility dated September 18, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC</i> , Civ. Action No. 1:22-cv-01331 (EDVA)
2004	Memorandum Opinion on Apple's Motion for Judgment on the Pleadings on Patent Eligibility dated September 18, 2023, <i>Geoscope Technologies Pte. Ltd. v. Apple Inc.</i> , Civ. Action No. 1:22-cv-01373 (EDVA)
2005	Final Judgment dated October 6, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC</i> , Civ. Action No. 1:22-cv-01331 (EDVA)
2006	Final Judgment dated October 5, 2023, <i>Geoscope Technologies Pte. Ltd. v. Apple Inc.</i> , Civ. Action No. 1:22-cv-01373 (EDVA)
2007	Order dated June 26, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC</i> , Civ. Action No. 1:22-cv-01331 (EDVA)

2008	Email from Saunak Desai to Stephen E. Noona, “Geoscope v. Google - Claim Narrowing” (June 12, 2023)
2009	Claim Construction Memorandum Opinion & Order dated July 19, 2023, <i>Geoscope Technologies Pte. Ltd. v. Apple Inc.</i> , Civ. Action No. 1:22-cv-01373 (EDVA)
2010	Order dated June 26, 2023, <i>Geoscope Technologies Pte. Ltd. v. Apple Inc.</i> , Civ. Action No. 1:22-cv-01373 (EDVA)
2011	Defendant Google LLC’s Final Invalidity Contentions dated July 3, 2023, <i>Geoscope Technologies Pte. Ltd. v. Google LLC</i> , Civ. Action No. 1:22-cv-01331 (EDVA)
2012	<i>Not Assigned</i>
2013	U.S. Patent No. 9,097,784 issued on Aug. 4, 2015 to Alles et al.
2014	U.S. Patent No. 7,383,051, issued on June 3, 2008 to Spain, Jr. et al.
2015	U.S. Patent No. 8,068,855, issued on Nov. 29, 2011 to Dressler et al.
2016	U.S. Patent No. 7,725,111, issued on May 25, 2010 to Dressler et al.
2017	<i>Not Assigned</i>
2018	Declaration of Saunak K. Desai In Support of Patent Owner’s Motion for Pro Hac Vice Admission of Saunak K. Desai Under 37 C.F.R. § 42.10(C)
2019	<i>Not Assigned</i>
2020	Declaration of Mark Alan Sturza
2021	<i>Curriculum Vitae</i> of Mark Alan Sturza
2022	Deposition Transcript of David Hilliard Williams for U.S. Pat. No. 8,406,753 (April 23, 2024)

2023	Deposition Transcript of David Hilliard Williams for U.S. Pat. Nos. 7,561,104, 8,786,494 and 8,400,358 (April 23, 2024)
------	---

I, Mark Alan Sturza, declare as follows:

I. INTRODUCTION

1. My name is Mark Alan Sturza. I have been retained by Patent Owner Geoscope Technologies Pte. Ltd. (“Patent Owner” or “Geoscope”) as an independent expert consultant in this proceeding and asked to submit this declaration in connection with U.S. Patent No. 8,406,753 (“the ’753 Patent”). I understand the ’753 Patent is the subject of an *inter partes* review and petition (“the Petition”) in front of the Patent Trial and Appeal Board of the United States Patent and Trademark Office, filed by Petitioner Google LLC (“Google” or “Petitioner”).

2. I have been asked to provide my opinions on the technology claimed in, and the patentability or nonpatentability of, Claims 1, 7, 9, 32, 38, and 40 of the ’753 Patent (“the Challenged Claims”). This declaration is directed to the Challenged Claims of the ’753 Patent and sets forth certain opinions I have formed, the conclusions I have reached, and the bases for each.

3. I am being compensated at my standard consulting rate of \$500 per hour. My compensation is not contingent on the substance of my opinions or testimony, nor is it contingent on the outcome of this proceeding. I have no other financial interest in this proceeding.

4. Based on my experience, knowledge of the field at the relevant

time, review of materials including the '753 Patent and prior art references relied on by Petitioner, and the understanding a person of ordinary skill in the art would have of the claim terms, it is my opinion that the Challenged Claims of the '753 Patent are patentable over the asserted references and that the Petition fails to demonstrate otherwise.

II. BACKGROUND AND QUALIFICATIONS

5. My opinions stated in this declaration are based on my own personal knowledge and professional judgment. In forming my opinions, I have relied on my knowledge and experience in designing, developing, and researching the technology referenced in this declaration.

6. I am over eighteen years of age and, if I am called upon to do so, I would be competent to testify as to the matters set forth herein. A detailed list of my qualifications and experiences is contained in my curriculum vitae, which I understand is being submitted as Ex. 2021. The following provides a brief overview of my qualifications relevant to the matters set forth herein. I am familiar with all aspects of position, location, and navigation technology.

7. I earned a Bachelor of Science (BS) degree in Applied Mathematics from the California Institute of Technology (Caltech) in 1977, a Master of Science in Electrical Engineering (MSEE) degree from the University of Southern California (USC) in 1979, and a Master of Business Administration

(MBA) degree from Pepperdine University in 1985.

8. I am a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), as well as a Senior Member of the American Institute of Aeronautics and Astronautics (AIAA). I hold memberships in the Institute of Navigation (ION), the Pacific Telecommunications Council (PTC), the Society of Satellite Professionals International (SSPI), and the International Association for the Advancement of Space Safety (IAASS). I also hold a General Radiotelephone Operator License from the Federal Communications Commission (FCC).

9. I am the President of 3C Systems Company, a company I founded in 1989 to provide consulting expertise in the design, development, analysis, and regulation of communications systems. My industry experience includes senior engineering management and technical positions at LinQuest, Litton, Magnavox, and Teledyne.

10. I have over 45 years of experience in the design, development, and application of position, location, and navigation systems, including with respect to iOS and Android location-based services. Examples of my experience are provided below.

11. I designed and implemented an improved graphics capability for the St. Mary's Loran-C navigation system.

12. I developed the first Global Positioning System (GPS) navigation set for commercial aviation applications, the LTN-700, in the early 1980's. I also architected 2nd and 3rd generation aviation products, the LTN-710 and the μ NAV.

13. I have participated in the design of numerous radio frequency (RF) devices. These included a TT&C (Telemetry, Tracking, and Control) transceiver operating from 70 MHz through S-Band, a 5.8-GHz Sensor Receiver for an RF Motion Capture system, a DVB-T/H receiver chipset, a Ka-band/5-GHz transverter (upconverter/downconverter unit used to change the frequency band over which a transceiver operates), an S-Band/L-Band transverter, miniaturized low-power J-Band transceiver for Trajectory Controlled Munitions, wideband (1-GHz bandwidth) modem, 60-GHz transceiver, several GPS receivers from cards to modules to chipsets to single chip solutions, an amplifier module for Globalstar's multi-channel active antenna subscriber units, and several miniaturized low-power S-Band, L-Band, and VHF frequency synthesizers.

14. I was Principal Investigator for four Department of Defense (DoD) Small Business Innovative Research (SBIR) contracts:

- QPSK and MPSK Transmission and Receiving Equipment
- RPV Range Surveillance and Radio Relay Via Satellite
- Miniature GPS Digital Translator Development
- ECM Resistant GPS Receiver

15. I developed one of the first GPS software receivers, in the early 1990's. A software receiver is a computer program that processes digitized GPS signal samples generating pseudo-range and delta-range measurements and computes a navigation solution. This was part of the work I performed for NAVSYS Corporation supporting an Air Force contract.

16. I developed a differential GPS (DGPS) navigation filter with autonomous fault detection and conducted studies of receiver autonomous integrity monitoring (RAIM). DGPS is a technique used to improve location accuracy, and RAIM is a technique used to verify the location estimate was obtained from valid measurement data.

17. I was a member of the tiger team formed to review contract performance of the vendor developing Sirius Satellite Radio's receiver chipset.

18. I developed the system architecture for the Leo One USA store-and-forward satellite system including radio frequency plan, multiple access techniques, link budgets, satellite constellation orbits, network protocols, and satellite and user terminals.

19. I was technical lead for the Eagle River due diligence leading to ICO Global Communication's (ICO) emergence from bankruptcy. I worked closely with the ICO and Boeing Space Systems teams to identify and mitigate technical risks and continued to provide technical and regulatory support

following the restructuring.

20. I was a member of the Teledesic (Gates–McCaw “internet in the sky”) founding team. I developed the communications systems architecture for this low-Earth orbit (LEO) Ka-band satellite communications system, including developing the radio frequency plan, multiple access techniques, and link budgets.

21. I developed an RF Tag motion capture system for the entertainment industry allowing the capture of actor’s performances in robust environments.

22. I was Chief Technology Officer (CTO) for SkyVault, a digital rights management and secure content distribution startup. I also developed a demo system showcasing SkyVault’s UltraSecure™ digital content protection.

23. I was a member of the team that developed the SiRFstar I, SiRFstar II, and SiRFstar IV GPS chipsets, including between 2006 and 2009. I developed high performance signal acquisition algorithms and moding, investigated positioning and geolocation techniques for GSM and UMTS mobile devices, and analyzed hybrid positioning techniques for mobile devices.

24. I was a member of the FCC’s LightSquared/GPS Industry technical working group (TWG). The TWG was established to evaluate the potential for interference to GPS and conducted extensive testing of all types of GPS devices and use cases, including iOS and Android devices.

25. I was a member of an online dating startup's team where I worked on apps utilizing iOS location services.

26. I was a member of the Pascal's Pocket team developing remote control applications for smartphones. I developed an ultra-secure virtual private network (VPN) for gaming machine applications. I also worked on apps utilizing iOS and Android location services.

27. I was a member of the founding team of sfara, a mobile app telematics startup that uses data science and sensor fusion technology on smartphones to provide a "Sphere of Safety." My support included developing extensive expertise with the iOS and Android location services, and underlying technologies.

28. I developed a product line of web service tools for link budget analysis, capacity planning, and performance monitoring.

29. I led a team conducting an Independent Technical Evaluation of Panasonic's eXConnect service.

30. I was a senior advisor to OneWeb in position, location, and navigation technology.

31. I have served as a senior advisor to Microsoft, Google, SpaceX, Facebook, and Viasat in matters of spectrum policy and radio technology.

32. I hold thirty U.S. patents in communications system design, eleven

of which specifically cover position, location, and navigation technology. I have authored over thirty technical papers, twenty-one of which focused on position, location, and navigation technology. Two of these papers were published in *Navigation: Journal of the Institute of Navigation*.

33. I was an instructor at University of California Los Angeles (UCLA) Extension teaching short courses (one-week courses intended for industry professionals) on “Integrated Communications, Precision Positioning Determination and Navigation, and Identification Systems”, and on “NAVSTAR Global Positioning System (GPS): Operation, Implementation, and Applications.” I also presented a similar short course for the University Consortium for Continuing Education. Additionally, I was an instructor at California State University Northridge, teaching a class in Linear Systems.

III. MATERIALS CONSIDERED

34. In forming my opinions regarding the '753 Patent, I reviewed all materials referenced in this declaration. In forming my opinions, I have reviewed all of the exhibits filed to date in this proceeding as well as the Petition and Institution Decision. In addition, my opinions are also based on my education, training, experience, and knowledge in the field.

IV. LEGAL STANDARDS

35. I am not an attorney and do not intend to offer my opinion on the

law. In forming my opinions in this case, I used the following legal standards that were explained to me by counsel.

A. Claim Construction

36. I have been informed that claim terms are to be construed from the perspective of a person of ordinary skill in the art at the time the application was filed. I have been informed that a claim term is generally given the plain and ordinary meaning that a person of ordinary skill in the art would ascribe to it when viewed in the context of the patent’s claims, specification, and prosecution history.

37. I have been informed that “intrinsic evidence,” including the patent claims, specification, and prosecution history are the most important sources for interpreting claim language in a patent. I have been informed that related patents and their prosecution histories may also be relevant to interpreting claim terms in another patent.

38. I have been informed that “extrinsic evidence,” such as dictionary definitions and technical publications, may also be used to help interpret the claim language, but that such extrinsic evidence is secondary to the intrinsic evidence and cannot be used to contradict the meaning of the claim language that is evident from the intrinsic evidence.

B. Level of Ordinary Skill in the Art

39. I have been informed that a patent and its claims are to be understood from the perspective of a hypothetical “person of ordinary skill in the art” (“POSITA”). I have been informed that a POSITA is considered to possess normal skills and knowledge in the relevant technical field.

C. Anticipation

40. I have been informed that for prior art to anticipate a patent claim, each and every element of a claim, as properly construed, must be disclosed either explicitly or inherently in a single prior art reference or embodied in a single prior art device. I have been informed that inherent anticipation may be found only if the prior art necessarily includes the claimed limitations.

41. I have been informed that, once a challenged claim has been properly construed, the step in determining whether the challenged claim is anticipated by the prior art requires a comparison of the properly construed claim language to the prior art on a limitation-by-limitation basis.

D. Obviousness

42. I have been informed that a claim may be invalid as obvious if the differences between the claimed subject matter and one or more prior art references are such that the subject matter would have been obvious to a POSITA at the time of invention.

43. I have been informed that in assessing whether a claimed invention

would have been obvious to a POSITA, the following factors are considered: (1) the scope and content of the prior art, (2) the differences between the claims and the prior art, (3) the level of ordinary skill in the art, and (4) objective indicia of non-obviousness.

44. I have been informed that a claim is not proved obvious merely by demonstrating that each of the claim elements was known in the prior art. Rather, there must be a showing that a POSITA would have reason to attempt to either combine two or more references or modify a reference to achieve the claimed invention, and that a POSITA would have had a reasonable expectation of success in doing so. I have been informed that obviousness should not be evaluated using the benefit of hindsight or what is known today.

45. I have been informed that the motivation to combine inquiry does not merely require showing that a POSITA could have combined references, but rather that a POSITA would have been motivated to combine references to arrive at the claimed invention. I have been informed that whether a POSITA would be motivated to make a combination includes whether the POSITA would select particular references in order to combine their elements. I have been informed that fundamental differences between references may help show that a POSITA would not be motivated to combine them to achieve the claimed invention. I have been informed that when the prior art teaches away from a particular

combination, the discovery of a successful means of combining said prior art is more likely to be non-obvious. I have been informed that a reference may be said to teach away when a person of ordinary skill in the art, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path taken by the patentee.

46. I have been informed that in evaluating whether patent claims are invalid as obvious, “objective indicia of non-obviousness” should be considered. I have been informed that objective indicia of non-obviousness include commercial success, long-felt but unsolved needs, copying, praise, unexpected results, industry acceptance, failure of others, and industry skepticism. I have been informed that there must be a nexus between the objective indicia and the claimed invention’s novel features.

V. LEVEL OF ORDINARY SKILL IN THE ART

47. I understand that Petitioner and its expert have proposed that a POSITA would have been (1) someone knowledgeable in wireless networks, cellular radio systems, mobile communication devices and radio navigation systems, (2) having at least a bachelor’s degree in electrical engineering, with a background in radio frequency communications and/or navigation system technology as well as approximately two years of industry experience working on radio communication and/or navigation systems. Ex. 1008 ¶ 44.

48. I do not dispute Petitioner’s definition of a POSITA for purposes of this declaration. Regardless, my opinions herein would not be changed by requiring somewhat more or somewhat less relevant knowledge and/or technical experience for a POSITA. Based on my background and experience, detailed further above, I am a person of at least ordinary skill in the relevant art for the ’753 Patent.

VI. BACKGROUND OF THE TECHNOLOGY

49. As described in further detail below, the inventions claimed in the ’753 Patent relate to the geolocation of mobile devices and provide solutions to specific problems in that field.

50. Location-based services utilize geographic data to provide information to a user, or perform another function for a user, based on the user’s location. Location-based services include, among other things, maps (*e.g.*, pinpointing a user’s current location or the location of another individual for applications such as a driver for a rideshare application), navigation (*e.g.*, driving directions), local search (*e.g.*, looking for nearby restaurants or providing relevant search results for requests with local intent), social networking, and targeted advertising. Ex. 1001 at 1:40-45. The ’753 Patent’s mention of “E911 emergency related issues” (Ex. 1001 at 1:31-37) indicates one possible application for emergency services.

51. Location-based services for mobile devices generally rely on the mobile devices being able to determine their location through a process called “geolocation.” Ex. 1001 at 1:37-40. At the time of the invention, there was a need for improved accuracy for geolocation, including to meet “accuracy standard[s]” for E911-related geolocation. Ex. 1001 at 1:28-37. One way a mobile device can be geolocated is by using a GPS receiver. This GPS-based location could then be transmitted to a base station or used locally on the device. However, there are many situations where GPS information is not available or not reliable. In those situations, the mobile device can still use other information (such as an identification of nearby base stations and the strength of the signals received from each nearby base station) to assist in determining the mobile device’s location.

52. At the time of the invention, geolocation using RF signals (*e.g.*, cellular data, as opposed to, for example, GPS information) was of interest in the field. Many methods attempted to use RF signals to geolocate mobile devices, but generally had problems, including limited accuracy. *See, e.g.*, Ex. 1006 at [0003] (“A second solution is to compute the location of the mobile unit based on the cellular network signaling parameters This information is typically accurate to hundreds of meters.”).

53. Some systems, like the ’753 Patent, relied on collecting

“calibration data” from mobile devices moving through various geographic regions.” Ex. 1001 at 2:21-31. Once the calibration data is “gathered,” it can be “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.” Ex. 1001 at 2:31-35. At a high level, a mobile device at an unknown location can “observe” and measure nearby network signals and compare that observed data to calibrated data associated with these generated “grid points” to determine its location. Various methods can be used for this comparison which involves both the calibration data and the observed data.

54. For example, testing is performed whereby mobile devices travel through a region and record information such as the received signal strength from various nearby base stations associated with specific coordinates (*e.g.*, through simultaneous GPS measurements). This gathered information is evaluated to generate “grid points,” which are associated with this calibration data. Then, when a new mobile device passes through the region, it can “observe” data such as the received signal strength from nearby base stations and compare that observed data to the stored calibration data that is associated with the generated grid points. This allows the mobile device to determine its location even without GPS.

55. When there is limited information associated with specific

coordinates to be used for geolocation, the accuracy and efficiency of geolocation of mobile devices can suffer. Thus, the accuracy and efficiency of geolocation was diminished by not having more data associated with particular coordinates. The '753 Patent explains that "there is a need to streamline the process in order to efficiently and effectively handle the vast amount of data being sent between the wireless communications network and the large number of mobile devices for which locations are to be determined." Ex. 1001 at 2:21-26.

56. The inventors solved this by employing the generation and use of "grid points," including non-uniform grid points, as part of the geolocation of a mobile device. Ex. 1001 at 9:34-48. Using this approach, calibration data could be used to create a denser "map" of network data associated with coordinates that could be used to locate a mobile device, ensuring more accurate geolocation with simpler calculations. Then, "[t]he location of a wireless mobile device may be estimated by comparing data reported by the mobile device to be geolocated with the data ... associated with the various grid points to thereby estimate the location of the mobile." Ex. 1001 at 9:43-48. As discussed further below, the '753 Patent explains how grid points can be generated based on calibration data. Ex. 1001 at 10:29-11:21, 12:4-14.

VII. OVERVIEW OF THE '753 PATENT

57. The '753 Patent was filed on February 5, 2008, and issued on March 26, 2013. Ex. 1001 at 1. The '753 Patent claims priority to U.S. Provisional Patent Application No. 60/899,379 (“the '379 Provisional”; Ex. 1003), filed on February 5, 2007. Ex. 1001 at 1. The '753 Patent incorporates by reference the entirety of the '379 Provisional. Ex. 1001 at 1:8-11. I understand that this means that, for purposes of my analysis, the '753 Patent specification includes the disclosures in the '379 Provisional as though those disclosures were part of the '753 Patent specification.

58. The '753 Patent discloses an invention for determining the location of a mobile device (or “geolocating”) using signal information from wireless communications networks (*e.g.*, cellular signals). Ex. 1001 at 1:15-23. This involves collecting “calibration data,” which includes measuring the properties of such network signals at known locations referred to as “calibration points.” Ex. 1001 at 9:49-59. For example, these properties may include the measured strengths of the network signals, as received at those known locations. Ex. 1001 at 9:60-10:8. After the calibration data is available, mobile devices at unknown locations can observe network signals and measure their properties (*e.g.*, signal strength), and then compare this observed data to the previously-gathered calibration data to determine their location. Ex. 1001 at 9:43-48.

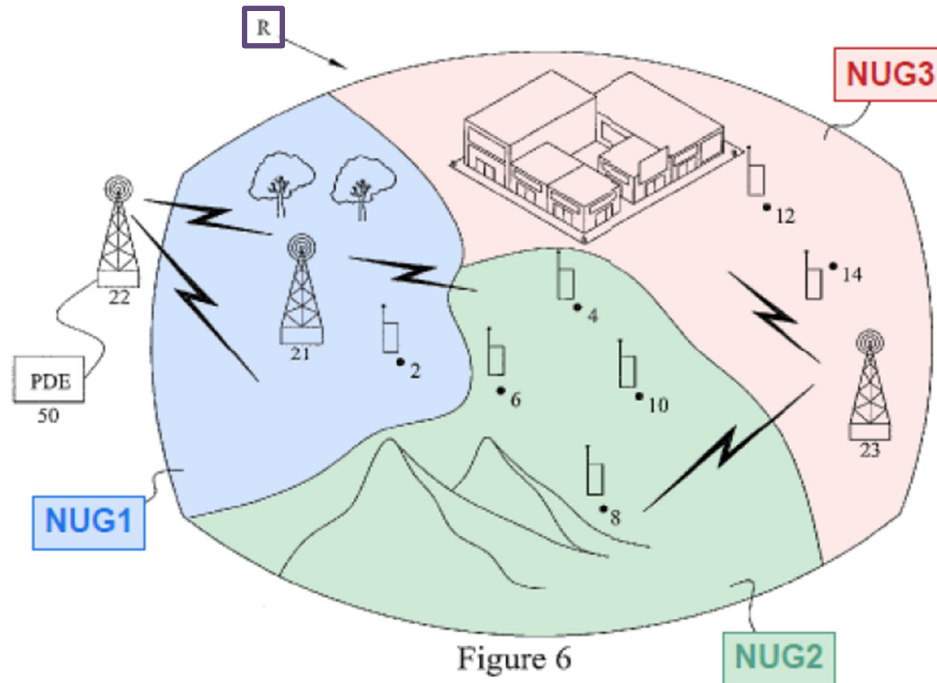
59. The invention of the '753 Patent involves the generation and use of what the patent refers to as “grid points” to improve the accuracy and efficiency of this process for using network signals for geolocation. Ex. 1001 at 2:21-50. As I discuss further below, the '753 Patent uses the term “grid points” to refer to data structures that are generated based on evaluation of calibration data that has been collected in a region. *See, e.g.*, Ex. 1001 at cl. 1. The grid points serve as additional known locations associated with network signal information, creating a denser “map” for mobile devices to compare observed data to for the purpose of determining their location.

60. The grid points of the '753 Patent “usually will not be uniformly distributed throughout the geographic region,” and thus the '753 Patent uses the term “non-uniform grid points” or “NUGs” when describing grid points. Ex. 1001 at 2:43-50; Ex. 1018 at 3:50-60, 9:24-30.

61. Related patents such as U.S. Patent No. 7,561,104 (“’104 Patent”; Ex. 1018) similarly use “non-uniform grid points” or “NUGs” when describing grid points. Ex. 1018 at 3:50-60. I understand that the '104 Patent as well as U.S. Patent No. 9,097,784 (“’784 Patent”; Ex. 2013) claim priority to the same provisional application (U.S. Provisional Application No. 60/899,379 (Ex. 1003, “’379 Provisional”) as the '753 Patent, and also describe “grid points” as the term is used in these patents. The '379 Provisional is incorporated by

reference in the '753 Patent (Ex. 1001 at 1:8-11) and includes disclosures regarding “grid points” that are also found in the '104 and '784 Patents. *See* Ex. 1003 at 5-7. I understand that, in a related litigation involving these parties and this patent, the court relied on disclosures in the '104 Patent and '784 Patent to construe the term “grid point.” Ex. 1028 at 19-20 (citing '104 Patent (as “Ex. B”) and '784 Patent (as “Ex. F”)).

62. As explained in the related '104 Patent, the claimed grid points “represent an area of collected calibration data” and “represent the signal characteristics and/or calibration data over a given region.” Ex. 1018 at 3:50-60. This is depicted in the related '784 Patent, which shows “a geographical region (R) having NUGs represented by NUG1, NUG2, and NUG3,” and further explains “[a] NUG may be generated to represent the signal characteristics and calibration data over a given region.” Ex. 2013 at 6:21-34.



Ex. 2013 at Fig. 6 (annotated to show each NUG in geographical region R in a different color).

63. The figure shows that each NUG corresponds to a particular area within the entire “geographical region (R).” Ex. 2013 at Fig. 6, 6:21-34. The calibration data associated with a particular NUG is representative of that area. Ex. 1018 at 3:50-60. Using the figure above as an example, the subset of calibration data gathered in the region that is associated with NUG1 is representative of the area delineated by the boundaries of NUG1. Ex. 2013 at Fig. 6, 6:21-34.

64. The figure above also shows that the boundaries for each NUG

differ, which results in each NUG having a different shape and size. Thus, the depicted grid points are not uniform and look nothing like any conventional notion of a “grid.” This is because the boundaries of each grid point are defined by evaluation of the calibration data itself. Ex. 1001 at 12:7-14; Ex. 1003 at 7¹. Using the figure above as an example, the calibration data associated with NUG1 represents the area within the boundaries of NUG1. Ex. 2013 at Fig. 6. Until the calibration data is evaluated, the boundaries are undefined, and the claimed grid point does not exist.

65. Accordingly, the shape of each NUG is variable because it is based on evaluation of the calibration data (which can vary throughout a region) rather than being predefined. This is explained in the '753 Patent:

The NUGs may fully cover the region R and each NUG may have statistically similar data accumulated into itself. *The geometrical shape (i.e., the 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.*

¹ References to Ex. 1003 refer to the pdf page (e.g., “Page 7 of 40”) rather than the internal pagination of the document.

Ex. 1001 at 12:7-14 (emphasis added); Ex. 1003 at 7; *see also* Ex. 1001 at 1:8-11 (stating that the '379 Provisional is “incorporated by reference in its entirety” in the '753 Patent).

66. A fundamental characteristic of a claimed grid point is that the geographical boundaries of the area it represents must be determined by evaluating the calibration data collected in a region. The '753 Patent further confirms this central aspect of the claimed grid points, explaining they are generated based on evaluation of measured calibration data:

The location of a wireless mobile device may be estimated using, at least in part, one or more pre-existing Network Measurement Reports (“NMRs”) which include calibration data for a number of locations within a geographic region. *The 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.

Ex. 1001 at Abstract, 2:31-35, 9:34-39 (emphasis added).

67. The '753 Patent claims recite the generation of “grid points,” and are not expressly limited to “non-uniform grid points” or “NUGs.” Ex. 1001 at cls. 1, 32. However, the claims recite that the claimed grid points are generated “for said calibration data,” referring to the calibration data recited in the

preceding limitation. Ex. 1001 at cls. 1, 32. Thus, the claimed grid points must be generated based on previously-gathered calibration data, regardless of whether they ultimately end up uniform or non-uniform. Ex. 1001 at 2:31-35.

68. As a practical matter, generating the grid points based on evaluation of the calibration data will typically result in non-uniform grid points because there are variations in calibration data across a region (*e.g.*, obstructions and other environmental factors may impact how signals propagate across a region). Thus, the '753 Patent explains that the claimed grid points “usually will not be uniformly distributed throughout the geographic region.” Ex. 1001 at 2:43-50. It is possible, however, that the calibration data in a given region may be such that evaluation of the data results in generating grid points that are uniformly distributed throughout a region, though this would be unusual. Ex. 1001 at 2:43-50. However, even in this unlikely event, the claimed grid points (including the boundaries of the area they represent) would still be determined from evaluation of the calibration data. This is because, even if evaluation of the calibration data ultimately results in uniform grid points, the boundaries of those uniform grid points, which define their shape and size, are still determined from evaluation of the calibration data. Ex. 1001 at 2:31-35, 9:34-39, 12:4-14. For example, the evaluation of the calibration data may result in uniform grid points with a radius or width on the order of meters or on the order of kilometers. In

either case, the grid points would be uniform but their boundaries have still been determined based on one valuation of the calibration data.

69. The '753 Patent also describes a “predetermined fixed uniform grid” but the generated grid points are not necessarily part of this grid. Ex. 1001 at cl. 4, 13:13-20, 15:57-67, 18:13-26. Rather, as is apparent from the disclosure in the '753 Patent, this “fixed uniform grid” is a separate concept from the grid points that are generated from evaluation of the calibration data. Even if this “uniform grid” is used as part of the process to generate grid points, the generated grid points may be non-uniformly distributed. For example, the specification explains that a “uniform grid” may be defined over a region to assign locations and data that form the “root” of a first generated grid point. *Id.* at 10:29-43. The subsequent grid points, however, are generated by evaluating this assigned data and may have different roots that are not part of this uniform grid. *Id.* at 10:44-65. Thus, a single generated grid point may be anchored to a point on this uniform grid while the other generated grid points are not, and are non-uniformly distributed. The distinction between the “uniform grid” and the generated grid points of the '753 Patent is further demonstrated in Figure 17 the '753 Patent's description of the figure:

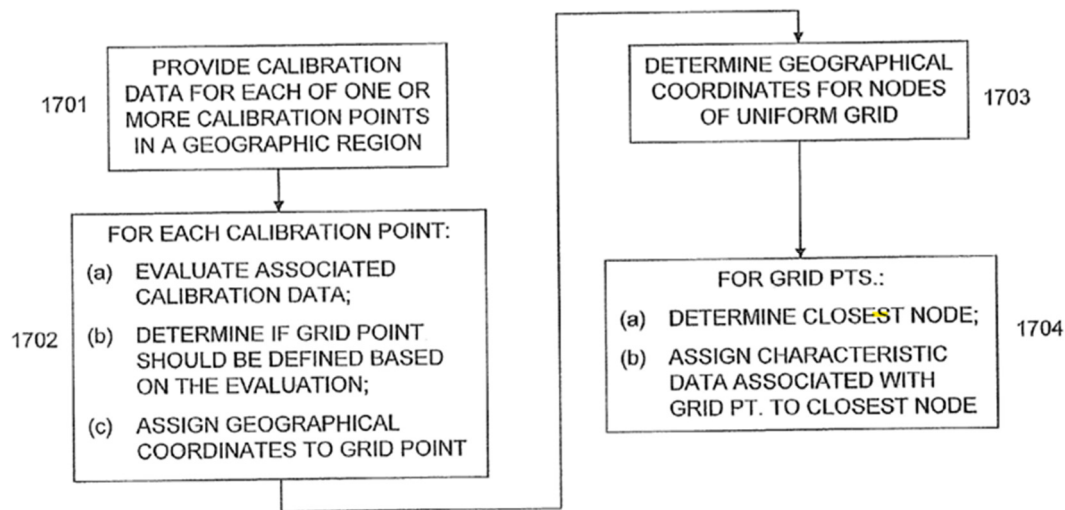


FIGURE 17

Id. at Fig. 17, 15:57-67.

70. In block 1702 of Figure 17, grid points are generated based on evaluating the calibration data associated with calibration points where the data has been collected (block 1701). Ex. 1001 at Fig. 17, 15:57-67. Then, as a separate step, there is a determination of “nodes of [the] uniform grid.” Fig. 17, 15:57-67. Thus, the ’753 Patent distinguishes between the generated grid points and the nodes of the uniform grid. It is possible that some of the generated grid points overlap these nodes under certain circumstances, but they are still distinct elements.

71. The evaluation of calibration data that is part of generating a grid

point involves determining which data are “statistically very similar” using “increasingly stringent tests of statistical sufficiency” such that they can be associated with (or “allocated to”) a particular grid point. Ex. 1001 at 10:44-59; Ex. 1003 at 6-7. For example, the “[s]tatistical similarity” of the gathered calibration data can be evaluated to determine where a grid point should be generated, if one should be generated at all. Ex. 1001 at 10:66-11:6; Ex. 1003 at 6-7. This “[s]tatistical similarity” in the calibration data can be evaluated using different types of statistical analyses including clustering tests, a probability density function, the mean and variance of the data, or other functions of the calibration data. Ex. 1001 at 10:66-11:6, 12:4-14; Ex. 1003 at 6.

72. The manner in which the measured calibration data is evaluated and allocated to each grid point further demonstrates why the boundaries of the grid points are variable and dependent on the calibration data. For example, the calibration data is evaluated to determine whether it “exhibit[s] clustering” and, based on that evaluation, is allocated to different grid points. Ex. 1001 at 10:46-47; Ex. 1003 at 6. If clusters of data collected at different locations (referred to as “calibration points”) are “statistically very similar, then the data for those calibration points is allocated to the same grid point. Ex. 1001 at 10:55-59; Ex. 1003 at 6. If these clusters of data are determined to be “sufficiently different,” then they are allocated to different grid points. Ex. 1001 at 10:50-55; Ex. 1003

at 6. Because the “geometrical shape” of the area represented by a grid point is “defined by the union of locations of calibration points” allocated to it, this process of evaluating the calibration data in order to allocate it to different grid points defines the boundaries of that area. Ex. 1001 at 12:9-14; Ex. 1003 at 7.

VIII. CLAIM CONSTRUCTION

73. I understand that in its Institution Decision, the Board construed “grid point” as “a point associated with representative calibration data for an area.” Institution Decision at 22-23. I further understand that this is the same construction adopted by the district court for the term “grid point” in a related litigation involving the ’753 Patent. Ex. 1028 at 18-20.

74. Although the Board adopted the words of the district court’s construction of “grid point,” it found that this construction does not require that the claimed grid points be “generated based on analysis of calibration data.” Institution Decision at 30-31. For the reasons I explain below, the construction of “grid point” adopted by the district court in the related litigation (“a point associated with representative calibration data for an area”) requires that the claimed grid points, including the boundaries of the area they represent, be generated based on evaluation of the calibration data. Additionally, as I explain further below, the intrinsic evidence, would indicate to a POSITA that the term “grid point,” as it is used in the ’753 Patent, includes a requirement that the grid

point, including the boundaries of the area it represents, be generated based on evaluation of calibration data. Ex. 1001 at 12:7-14; Ex. 1003 at 7; Ex. 2013 at Fig. 6, 6:21-34.

A. The District Court’s Construction of “Grid Point” (“a point associated with representative calibration data for an area”)

75. The district court construed “grid point” as “a point associated with representative calibration data for an area.” Ex. 1028 at 18-20. In its claim construction ruling, the district court explained what this construction means in the context of the ’753 Patent and other related patents that use the same term.

76. The district court explained that it used this phrase in its construction of “grid point” to “reflect that *the defining characteristic of a NUG region*—as explained in the specifications of the ’753 Patent, ’104 Patent, and [’784] Patent—is *that the data points within an area are all ‘statistically very similar’* such that each of the grid points within the NUG region can represent the overall NUG.” Ex. 1028 at 20 (emphasis added) (citing Ex. 1018 at 3:56-60; Ex. 1001 at 10:29-11:7; Ex. 2013 at 6:22-28).

77. Thus, the district court explained that the phrase “representative calibration data for an area” in its construction signifies that the calibration data associated with a grid point are “statistically very similar” such that the calibration data are representative of the area encompassed by the grid point.

The '753 Patent is consistent with this in how it describes the claimed grid points. Ex. 1001 at 10:55-11:6 (explaining how grid points are generated based on evaluation of whether clusters of calibration data are “statistically very similar” and identifying tests used to determine such “[s]tatistical similarity”).

78. The district court’s construction makes clear that a “grid point” is not associated with generic calibration data, but rather is associated with calibration data that is representative for an area. This requires that the boundaries of the area represented by a particular grid point be determined by evaluating the calibration data so that the subset of data associated with that grid point is representative of that area. The '753 Patent describes this as involving the evaluation of statistical similarities across the set of calibration data gathered within a region, and teach examples of the statistical analyses used to generate the claimed grid points from this calibration data. Ex. 1001 at 10:39-65 (“If the aggregated cluster . . . is statistically very similar to either of the first or second clusters . . . then the data for the two calibration points may be allocated to the same NUG”), 12:4-14 (“The NUGs may fully cover the region R and each NUG has statistically similar data accumulated into itself”), 10:66-11:6; Ex. 1003 at 6-7. The representative calibration data for a particular area may constitute a subset of data collected in a broader region. Ex. 2013 at Fig. 6, 6:21-34 (depicting geographical region (R), where calibration data is collected, divided

into different areas each associated with a different grid point (NUG1, NUG2, and NUG3)).

79. For these reasons, in my opinion, the district court’s construction requires evaluating the calibration data to determine the boundaries of the area represented by a grid point so that “representative calibration data for [the] area” can be associated with it. If the calibration data is not evaluated, the “representative calibration data for an area” cannot be defined, and thus cannot be associated with a point.

80. Additionally, in my opinion, the intrinsic evidence requires that “grid points,” including the boundaries of the area they represent, be generated based on evaluation of calibration data. The independent claims of the ’753 Patent require “[providing/receiving] calibration data for each of one or more calibration points in a geographic region” and “generat[ing] one or more sets of grid points for said calibration data.” Ex. 1001, cls. 1 and 32. Accordingly, the claims require generating grid points based on an evaluation of calibration data.

81. Additionally, the specification of the ’753 Patent supports this interpretation of the claim term “grid point.” For example, the specification states that “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.” Ex. 1001 at 2:31-35, Abstract, 9:34-39.

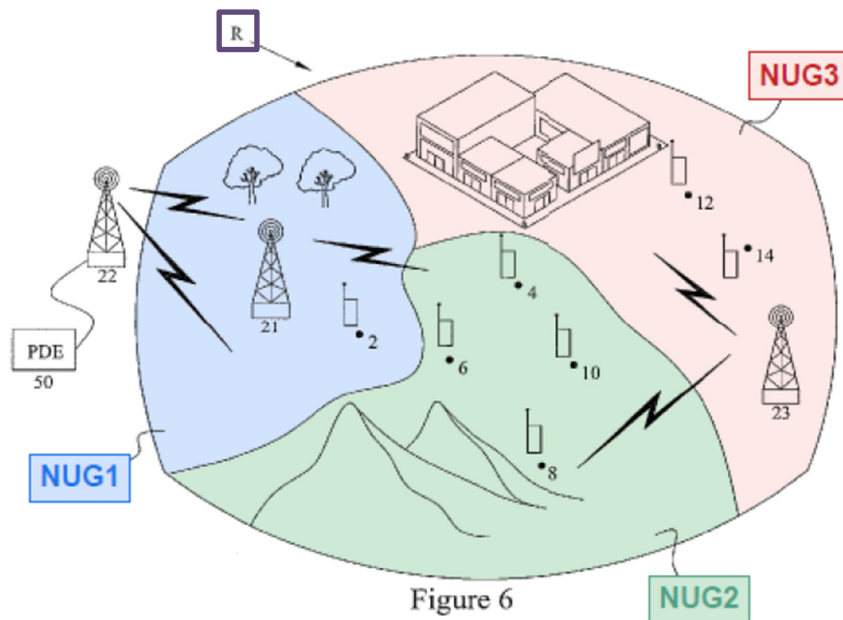
Therefore, the specification teaches that grid points are generated based on an analysis of calibration data.

82. Similarly, the ’753 Patent explains that the boundaries of the area represented by a grid point, which define the shape of that area, are variable because they are based on evaluation of statistical similarities across the gathered calibration data:

The NUGs may fully cover the region R and each NUG may have statistically similar data accumulated into itself. *The geometrical shape (i.e., the 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.*

Ex. 1001 at 12:7-14 (emphasis added); *see also* Ex. 1003 at 7.

83. NUGs that have been generated based on calibration data collected in a broader region “R” are depicted in Figure 6 of the related ’784 Patent, which shows “a geographical region (R) having NUGs represented by NUG1, NUG2, and NUG3.”



Ex. 2013 at Fig. 6 (annotated to show each NUG in geographical region R in a different color), 6:21-34.

84. As the annotated figure shows, each NUG corresponds to an area that is part of a broader geographical region (R). Ex. 2013 at Fig. 6. The '753 Patent explains that calibration data is gathered at different locations in this region and then "[t]he 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." Ex. 1001 at 2:31-35, Abstract, 9:34-39. These grid points divide the geographical region into different areas represented by each grid point, as is shown in the figure above.

Ex. 2013 at Fig. 6, 6:21-34.

85. As I discussed above, the “grid points” recited in the ’753 Patent claims must be generated based on an evaluation of the measured calibration data, including to determine the boundaries of the area they represent, regardless of whether that ultimately results in grid points that are uniform or non-uniform. *Supra* ¶¶ 67-70; Ex. 1001 at 2:31-35.

86. Additionally, the intrinsic evidence describes the evaluation of calibration data that occurs to generate a grid point. For example, the ’379 Provisional explains that “[t]he evaluation of the [calibration] data vectors is of great importance since it is fundamental to the method” of generating the claimed grid points. Ex. 1003 at 6. The ’753 Patent explains that the “[s]tatistical similarity” of the gathered calibration data is evaluated to generate a grid point, which includes defining the area it represents and associating it with calibration data that is representative of that area. Ex. 1001 at 10:44-11:6, 12:4-14; Ex. 1003 at 6-7. The ’753 Patent also explains that multiple methods of evaluating statistical similarities across the calibration data may be used to allocate calibration data to different grid points. Ex. 1001 at 10:66-11:6 (referring to “clustering tests” and “K-means algorithm”); Ex. 1003 at 6. For example, calibration data is evaluated to determine whether it “exhibit[s] clustering.” Ex. 1001 at 10:46-47; Ex. 1003 at 6. Clusters of data collected at different

“calibration points” that are determined, based on this evaluation, to be “statistically very similar” are allocated to the same grid point while clusters of data that are “sufficiently different” are allocated to different grid points. Ex. 1001 at 10:50-59; Ex. 1003 at 6.

87. The result of this evaluation and allocation of data to each grid point is that each has “statistically similar data accumulated into itself” such that each claimed grid point is associated with representative calibration data for an area. Ex. 1001 at 12:7-14; Ex. 1003 at 7. Additionally, the allocation of subsets of calibration data collected at various locations within a region to different grid points defines the areas represented by each grid point. Ex. 1001 at 10:39-11:6, 12:4-14. This means that the “geometrical shape” (*i.e.*, boundaries) of the area represented by a particular non-uniform grid point is “determined by the statistical similarity of the data” allocated to a grid point, which is based on evaluation of the calibration data. Ex. 1001 at 12:4-14; Ex. 1003 at 7.

88. For the reasons explained above, it is my opinion that both the district court’s construction of “grid point” and the intrinsic evidence demonstrate that a POSITA would understand the term “grid point,” as used in the ’753 Patent, to require that a grid point, including the boundaries of the area represented by that grid point, be determined from evaluation of calibration data.

IX. PATENTABILITY ANALYSIS OF THE CHALLENGED CLAIMS OF THE '753 PATENT

89. I understand that the Board has instituted this proceeding on one ground:

- Ground 1: Anticipation based on Spain or rendered obvious by Spain, alone or in combination with Agiwal

90. For the reasons I explain below, it is my opinion that the Challenged Claims of the '753 Patent are not invalid under this ground. In particular, the prior art references in this ground fail to teach “[generating/generate] one or more sets of grid points for said calibration,” as required by the Challenged Claims. This limitation is recited in independent claims 1 and 32 of the '753 Patent, which are the only independent claims in the patent. I understand that dependent claims incorporate every limitation of the independent claims from which they depend, and thus every dependent claim also includes this limitation.

A. Ground 1: Anticipation based on Spain or Obviousness Based on Spain, Alone or in Combination with Agiwal

91. I understand that Petitioner contends that Spain, U.S. Patent Application No. 2003/0064735 (Ex. 1006), anticipates every Challenged Claim of the '753 Patent or renders obvious every Challenged Claims, either alone or in combination with Agiwal. As explained below, I disagree. In my opinion, Spain does not anticipate or render obvious the Challenged Claims of the '753

Patent, either alone or in combination with Agiwal. In particular, Spain does not teach or suggest the limitation in the Challenged Claims requiring “[generating/generate] one or more sets of grid points for said calibration,” and Petitioner has not contended that Agiwal teaches or suggests this limitation. Pet. at 24-27; Ex. 1008 ¶¶ 75-82.

92. Petitioner relies on Spain’s description of how a fingerprint database “is built by taking fingerprint measurements at predetermined locations and using intelligent algorithms that interpolate the fingerprints at all locations between the sampled locations” as disclosing this limitation. Pet. at 25-26 (citing Ex. 1006 at [0101] and [0054]-[0055]). The interpolated fingerprints of Spain, however, are different from the claimed “grid points” of the ’753 Patent.

93. As I explained above in Section VIII regarding claim construction, the claimed grid points of the ’753 Patent are associated with representative calibration data for an area whose boundaries are determined from evaluation of the calibration data. Moreover, the full language of the relevant limitation in claim 1 recites “generating one or more sets of grid points *for said calibration data*” and in claim 32 recites a processor programmed to “generate one or more sets of grid points *for said calibration data*.” Ex. 1001 at cls. 1, 32 (emphasis added). These limitations refer to “calibration data” that is provided or received in a preceding step. Ex. 1001 at cls. 1, 32. For this reason, the plain language of

these claims requires that the claimed grid points be generated based on this calibration data.

94. The '753 Patent explains that grid points are generated based on calibration data through evaluation of “statistical similarities” in the data that permits allocation of the data to different grid points. *Supra* §§ VII, VIII; Ex. 1001 at 10:44-11:6. Moreover, this evaluation of the calibration data to allocate it to different grid points defines the “geometrical shape” (*i.e.*, the boundaries) of the area represented by the “grid point.” *Supra* §§ VII, VIII; Ex. 1001 at 12:4-14. Thus, even if the term “grid point” itself is found not to require the evaluation of calibration data to define the boundaries of the area represented by a “grid point,” the remaining claim language in the Challenged Claims includes this requirement.

95. In Spain, the interpolated fingerprints are used to fill in missing fingerprint measurements at predetermined locations that are defined in advance independently of any calibration data. For example, Spain describes “interpolat[ing] the fingerprints at ***all locations*** in between the sampled locations” to reduce the number of physical measurements to be made to populate the fingerprint database. Ex. 1006 at [0101] (emphasis added). That this interpolation occurs at “all locations” confirms that it is for the purpose of filling in fingerprint measurements for predetermined locations. Interpolating

fingerprints for “all locations” is meaningless unless those locations have already been determined and defined; “all” refers to the entire set of locations, requiring the set of locations to be defined in advance.

96. Although these fingerprints may correspond to a “small area” surrounding a predetermined location, Spain does not teach how this area is defined or how its boundaries are determined. *See* Ex. 1006 at [0099]-[0101]. Spain does not teach that the boundaries of this “small area” are based on evaluation of calibration data. *See* Ex. 1006 at [0099]-[0101].

97. Spain only describes corresponding a fingerprint to a “small area” as an alternative to corresponding it to a single point. Ex. 1006 at [0099]. Spain does not, however, describe any other differences between these two alternatives. Ex. 1006 at [0099]. In the embodiment in which fingerprints may correspond to a single point, that point is predetermined based on where the fingerprint data is collected. Ex. 1006 at [0099]. This suggests that in the embodiment in which fingerprints may correspond to “small areas,” those areas, and the boundaries of such areas, are also predetermined, and thus independent of any evaluation of calibration data. Thus, given Spain’s lack of disclosure to the contrary, a POSITA would understand Spain’s embodiment in which fingerprints may correspond to a “small area” (instead of “one exact spot” identified by a particular latitude and longitude) to also use predetermined areas.

Ex. 1006 at [0099]-[0101]. As Spain explains, in the “small area” embodiment, the area is still identified by a particular predetermined location represented in the “Lat and Long fields.” Ex. 1006 at [0099], Fig. 10. In my opinion, this further confirms that the boundaries of the “small area[s]” described by Spain are not determined from evaluation of calibration data, but rather are predetermined without any consideration of the calibration data. Ex. 1006 at [0099].

98. For the reasons I have explained above, I believe that Spain does not anticipate or render obvious the Challenged Claims of the ’753 Patent, either alone or in combination with Agiwal.

X. CONCLUSION

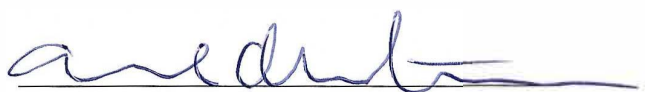
99. As discussed above, it is my opinion that the Challenged Claims of the '753 Patent are patentable over the prior art of record and that the Petitioner failed to demonstrate otherwise. I reserve the right to supplement my opinions in the future, including to account for new information made available to me.

100. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested proceeding before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross-examination in the proceeding and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

101. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date:

5/27/2024



Mark Sturza