

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
SAMSUNG ELECTRONICS CO., LTD., and
SAMSUNG ELECTRONICS AMERICA, INC.
Petitioners,

v.

MULLEN INDUSTRIES LLC,
Patent Owner.

Case No. IPR2025-00018
Patent No. 11,122,418

DECLARATION OF DAVID H. WILLIAMS

Google Exhibit 1003 Google v Mullen IPR2025-00018

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I, David H. Williams, declare:

[0001] I have been retained by Wolf, Greenfield & Sacks, P.C., counsel for Petitioner Google LLC, to assess claims 1-30 (the “challenged claims”) of U.S. Patent No. 11,122,418 (“the ’418 patent”). I am being compensated for my time at my standard rate of \$485.00 per hour, plus actual expenses. My compensation is not dependent in any way upon any outcome in the *inter partes* review of the ’418 patent.

I. PERSONAL AND PROFESSIONAL BACKGROUND

[0002] I have over thirty years of industry experience in the field of location-based services (LBS), including experience designing, implementing, and managing numerous LBS applications for mobile social networking, family tracking, local search, and mobile research management. I have extensive expertise in all aspects of LBS delivery across the wireless location ecosystem, including enabling network, map data, geospatial platform, chipset, data management, device, and location determination infrastructure and integration providers.

[0003] I have summarized in this section my educational background, work experience, and some of my other relevant qualifications. My curriculum vitae, which I understand has been designated EX1004, further describes my background and experience.

[0004] I earned a Bachelor of Science in Electrical Engineering degree (BSEE), with an emphasis on digital system design, from Purdue University in 1983. In 1987, I earned a Master of Business Administration degree (MBA), with a focus on information systems management, from The University of Texas at Austin.

[0005] From 1983 to 1985, I worked at Hughes Aircraft Company as an electrical engineer, where I focused on microcomputer and digital system design on the F-15 fighter radar system, including interfacing with systems for fighter location determination (absolute and relative to ground and sea locations), as well as fighter target identification, acquisition, and targeting.

[0006] After completing my MBA, I worked for Deloitte Consulting (originally Touche Ross) as a Senior Manager from 1987 to 1991. At Deloitte, I provided consulting services for technology-intensive companies in developing and implementing business and product strategies.

[0007] From 1991 to 1993, I worked as a Senior Associate in the Information Technology Practice of Booz Allen & Hamilton, providing consulting services for communications industry and information technology-intensive companies.

[0008] From 1993 to 2002, I worked at Accenture as an Associate Partner in the Communications and High-Technology Strategy and Information

and Technology Strategy groups. At Accenture, I led the development of business, technology, and product strategies for numerous communications and technology-centric companies looking to enter new markets. I specialized in new product design, development, and implementation, as well as network infrastructure design needs to support next generation, high bandwidth-consuming digital media content and associated infrastructure.

[0009] As an example of my work with Accenture, as an Associate Partner in their Communications and High-Technology Strategy group, from 1998 to 2000 I led the development of Nextel's (now part of Sprint/T-Mobile) Location-Based Services (LBS) product strategy, identifying future location-based products and specifying their requirements for Nextel's entry into the LBS market. This effort also included leading the development of the Information Technology and Network architectures that would be needed to support the LBS Product Strategy. Many of these LBS products were multi-user products that required the sharing of location information among multiple users.

[0010] In 2002, I founded E911-LBS Consulting, which was later renamed E911-LBS Forensics Engineering ("E911-LBS"), of which I am President. Services provided by E911-LBS span the entire wireless value chain, particularly with respect to technology and business strategic planning and product design, development, implementation, and ongoing management and operations.

In the name “E911-LBS,” “E911” refers to “enhanced 911,” which is a system for emergency dialing in which the caller’s location is automatically determined and provided to the emergency dispatcher. “LBS” refers to location-based services.

[0011] I have worked on a wide variety of matters as a consultant through E911-LBS. For example, in the mid-2000s I led the development of the site map and primary content for the NAVTEQ (now HERE) Network for Developers (N4D) LBS web ecosystem. Specifically, I was responsible for designing and managing the site map and overall content, identifying key contributors and materials, and utilizing a variety of fragmented information to develop broad and deep technical, digital media and business content to assist various expertise levels of application developers and business management to become intimately familiar with map data, Geographical Information System (GIS) platforms, and LBS applications and underlying technologies and to provide the information and guidance to successfully develop and launch their LBS applications, including tools enabling multi-user applications involving sharing of location information. Also, in the mid-2000s I provided E911 consulting expertise in support of new spectrum regulatory approval and technical implementation issues for a startup carrier, and managed the design, collection, and analysis of E911 infrastructure deployment of the western region of a major wireless carrier.

[0012] Additionally, from 2007 to 2010 I worked for AT&T Mobility, first in a consulting role as a Consumer LBS Product Realization Manager, then as a Senior Product Manager – Enterprise LBS. At AT&T Mobility, my work included design, troubleshooting, and implementation of AT&T location-related network, application, user interface, digital media and content delivery, and privacy infrastructure and associated issues such as accuracy and privacy. I also managed products including telematics, fleet/vehicle management, asset/freight management, and mobile resource management GPS/LBS apps on a variety of platforms such as Telenav, and played a key role in design of company-wide location services product and implementation roadmap. Many of these applications involved the sharing of location information among multiple users, such as the AT&T FamilyMap application enabling location sharing among family members.

[0013] I have written a number of books on wireless location including: The Definitive Guide to IoT Sensors and IoT Use Cases (In Development), The Definitive Guide to GPS, RFID, Wi-Fi, and Other Wireless Location-Based Services (2005/2009 versions, new version in development), The Definitive Guide to Wireless E911, and (co-authored) The Definitive Guide to Mobile Positioning and Location Management.

[0014] I am the inventor or a co-inventor of ten issued U.S. patents and numerous pending applications. These include:

[0015] “Method and apparatus for providing mobile social networking privacy.” (U.S. Patent Number 8,613,109, Issued December 17, 2013).

[0016] “Systems and methods of using wireless location, context, and/or one or more communication networks for monitoring for, preempting, and/or mitigating pre-identified behavior.” (U.S. Patent Number 10,477,342, Issued November 12, 2019).

[0017] “Systems and methods for monitoring for and preempting pre-identified restriction violation-related behavior(s) of persons under restriction.” (U.S. Patent Number 10,497,242, Issued December 3, 2019).

[0018] “Systems and methods for providing location-based security and/or privacy for restricting user access.” (U.S. Patent Number 10,555,112, Issued February 4, 2020).

[0019] “Systems and methods for developing, monitoring, and enforcing agreements, understandings, and/or contracts.” (U.S. Patent Number 10,853,897, Issued December 1, 2020).

[0020] “Systems and methods for monitoring for and preempting pre-identified restriction violation-related behavior(s) of persons under restriction.” (U.S. Patent Number 10,861,307, Issued December 8, 2020).

[0021] “Systems and methods for monitoring for and lowering the risk of addiction-related or restriction violation-related behavior(s).” (U.S. Patent Number 11,388,546, Issued July 12, 2022).

[0022] “Systems and methods for monitoring for and preempting the risk of a future occurrence of a quarantine violation.” (U.S. Patent Number 11,412,353, Issued August 9, 2022).

[0023] “Dynamic and adaptive systems and methods for rewarding and/or disincentivizing behaviors” (U.S. Patent Number 11,636,941, Issued April 25, 2023).

[0024] “Systems and Methods for Conducting/Defending Digital Warfare or Conflict” (U.S. Patent Number 12,096,308, Issued September 17, 2024).

[0025] As demonstrated above and (discussed further below), I have at least two years of experience with wireless networks and devices, such as cell phones and personal digital assistants (“PDAs”), as well as wireless positioning technologies, such as GPS or triangulation. In fact, as demonstrated by the examples below, as of 2002, I had over eight years of industry experience with wireless networks and devices, such as cell phones and PDAs, as well as wireless positioning technologies, such as GPS or triangulation. I have a further 22 years of industry experience with wireless networks and devices, such as cell phones and

PDA's, as well as wireless positioning technologies, such as GPS or triangulation, from 2002 to the present. For example:

[0026] 1983-1985 – Designed the analog-to-digital converter as part of the digitalization of the F-15 radar. Design included interfacing to location determination and navigation systems associated with navigating the F-15 fighter, providing absolute and relative location using triangulation and other technologies using wireless networks to ground, air, and sea-based entities and associated systems and device, as well as provide the F-15 with the ability to identify (and locate), acquire (and track), and target weapon systems at hostile targets.

[0027] 1993-1998 – Worked extensively with communications carriers such as (then) Bell Atlantic, AT&T, and GTE to develop new communications strategies, products and services and underlying Information Technology and networking requirements. Efforts included forecasting and specifying strategies and requirements for the transition of communications networks from predominately wireline to wireless, and its implications on end-user devices including cell phones and PDA's.

[0028] 1995-2001 – Was responsible for the development of Accenture's wireless location practice to capitalize on opportunities from The 1996 Telecommunications Act. I led development of business, technology, and product strategies for numerous communications and technology-centric companies

looking to enter new markets. I specialized in new wireless and wireline product design, development, and implementation as well as Information Technology and wireless network design for various established and start-up companies, including specifying requirements for end user devices such as cell phones and PDAs.

[0029] 1998-2000 – For example, I led the development of Nextel’s (now part of Sprint/T-Mobile) Location-Based Services (LBS) product strategy, identifying future location-based products and specifying their requirements for Nextel’s entry into the LBS market. This effort also included leading the development of the Information Technology and wireless network architectures that would be needed to support the LBS Product Strategy, as well as specifying wireless device/cell phone design requirements to support the LBS product strategy.

[0030] 2003-2004 – As President of E911-LBS, I led the development of part of AT&T Wireless’s E911 infrastructure, including the development of systems, processes, and reporting infrastructure to manage and track the deployment of time difference of arrival-based location determination technologies. I managed the testing and Federal Communications Commission reporting of network location inaccuracies, with a particular focus on detecting and troubleshooting out-of-norm technology deployment and inaccurate location conditions.

[0031] 2004-2006 - Worked with NAVTEQ (now called HERE)—the leading provider of map data and services essential to creating LBS applications—to develop the company’s web developer website content and tools. Specifically, I designed and managed the site map and overall content, including the development of comprehensive technical and business web content for all NAVTEQ map product and service lines. Through the developer site, application developers and business managers became intimately familiar with map data, Geographical Information System (GIS) platforms, and location-based services to successfully develop and launch their LBS applications.

[0032] 2007-2010 – Led design finalization and implementation of several of AT&T’s first generation of location-based services, as well as design of underlying location enabler network. Became the only non-employee inventor on U.S. Patent Number 8,613,109, Method and Apparatus for Mobile Social Networking Privacy (issued December 17, 2013).

[0033] 2010-Present – Worked on patent cases involving over 200 patents involving wireless networks, wireless positioning technologies such as GPS and triangulation, and end user devices such as cell phones, PDAs, and other mobile devices.

[0034] 2015-Present – Worked on over 50 criminal and civil forensics cases involving wireless networks, wireless positioning technologies such as GPS

and triangulation, and end user devices such as cell phones, PDAs, and other mobile devices.

[0035] The above-summarized experience is also set forth in my curriculum vitae, a copy of which is provided as EX1004 and which further describes my detailed qualifications and professional experience.

II. MATERIALS REVIEWED AND CONSIDERED

[0036] My findings, as explained below, are based on my years of education, research, experience, and background in the field of wireless networks and devices, such as cell phones and personal digital assistants (“PDAs”), as well as wireless positioning technologies, such as GPS or triangulation, as well as my investigation and study of relevant materials for this declaration. When developing the opinions set forth in this declaration, I assumed the perspective of a person having ordinary skill in the art (“POSA”), as set forth in Section IV below. In forming my opinions, I have studied and considered the materials identified in the list below.

Exhibit	Description
1001	U.S. Patent No. 11,122,418 (“the ’418 patent”)
1002	Prosecution History of U.S. Patent No. 11,122,418
1005	U.S. Patent No. 7,333,820 (“Sheha”)
1006	U.S. Provisional Patent Application No. 60/305,975 (“Sheha-Prov.”)
1007	U.S. Patent Application Publication No. 2004/0024846 (“Randall”)

1008	International Patent Application Publication No. WO 02/17075 (“Randall-WIPO”)
1009	U.S. Patent No. 7,233,795 (“Ryden”)
1010	U.S. Provisional Patent Application No. 60/277,117 (“Ryden-Prov.”)
1011	U.S. Patent No. 6,819,919 (“Tanaka”)
1012	U.S. Patent No. 7,013,148 (“Ganesh”)
1013	U.S. Patent No. 6,968,179 (“De-Vries”)
1014	U.S. Patent No. 6,920,328 (“Wollrab”)
1015	U.S. Patent No. 6,714,791 (“Friedman”)
1016	U.S. Patent Application Publication No. 2002/0145561 (“Sandhu”)
1017	U.S. Patent No. 6,885,874 (“Grube”)
1018	U.S. Patent No. 6,716,101 (“Meadows”)
1019	U.S. Patent No. 7,366,522 (“Thomas”)
1020	U.S. Patent No. 5,736,960 (“Murphy”)
1021	U.S. Patent No. 5,923,286 (“Divakaruni”)
1022	International Patent Application Publication No. WO 01/91486 (“Darling”)

III. MY UNDERSTANDING OF PATENT LAW

[0037] In developing my opinions, I discussed various relevant legal principles with Petitioner Google’s attorneys. Though I do not purport to have prior knowledge of such principles, I understood them when they were explained to me and have relied upon such legal principles, as explained to me, in the course of forming the opinions set forth in this declaration. My understanding in this respect is as follows:

[0038] I understand that “inter partes review” (IPR) is a proceeding before the United States Patent & Trademark Office for evaluating the patentability of an issued patent’s claims based on prior-art patents and printed publications.

[0039] I understand that, in an IPR proceeding, including in this proceeding, the petitioner has the burden of proving that the challenged claims of the challenged patent are unpatentable by a preponderance of the evidence. I understand that “preponderance of the evidence” means that a fact or conclusion is more likely true than not true.

[0040] I understand that, in IPR proceedings, claim terms in a patent are given their ordinary and customary meaning as understood by a person of ordinary skill in the art (“POSA”) in the context of the entire patent and the prosecution history pertaining to the patent. If the specification provides a special definition for a claim term that differs from the meaning the term would otherwise possess, the specification’s special definition controls. If a claim element is expressed as a “means” for performing a specified function, I understand that it covers the corresponding structure described in the specification and equivalents of the described structure. I have applied these standards in preparing the opinions in this declaration.

[0041] I understand that determining whether a particular patent or printed publication constitutes prior art to a challenged patent claim can require

determining the effective filing date (also known as the priority date) to which the challenged claim is entitled. I understand that for a patent claim to be entitled to the benefit of the filing date of an earlier application to which the patent claims priority, the earlier application must have described the claimed invention in sufficient detail to convey with reasonable clarity to the POSA that the inventor had possession of the claimed invention as of the earlier application's filing date. I understand that a disclosure that merely renders the claimed invention obvious is not sufficient written description for the claim to be entitled to the benefit of the filing date of the application containing that disclosure.

[0042] I understand that for an invention claimed in a patent to be patentable, it must be, among other things, new (novel—i.e., not anticipated) and not obvious from the prior art. My understanding of these two legal standards is set forth below.

A. Anticipation

[0043] I understand that, for a patent claim to be “anticipated” by the prior art (and therefore not novel), each and every limitation of the claim must be found, expressly or inherently, in a single prior-art reference. I understand that a claim limitation is disclosed for the purpose of anticipation if a POSA would have understood the reference to disclose the limitation based on inferences that a POSA

would reasonably be expected to draw from the explicit teachings in the reference when read in light of the POSA's knowledge and experience.

[0044] I understand that a claim limitation is inherent in a prior art reference if that limitation is necessarily present when practicing the teachings of the reference, regardless of whether a person of ordinary skill recognized the presence of that limitation in the prior art.

B. Obviousness

[0045] I understand that a patent claim may be unpatentable if it would have been obvious in view of a single prior-art reference (e.g., in combination with the POSA's background knowledge) or a combination of prior-art references.

[0046] I understand that a patent claim is obvious if the differences between the subject matter of the claim and the prior art are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the relevant field at the time the invention was made. Specifically, I understand that the obviousness question involves a consideration of:

- the scope and content of the prior art;
- the differences between the prior art and the claims at issue;
- the knowledge of a person of ordinary skill in the pertinent art; and

- if present, objective factors indicative of non-obviousness, sometimes referred to as “secondary considerations.” To my knowledge, the Patent Owner has not asserted any such secondary considerations with respect to the patent challenged in this proceeding.

[0047] I understand that in order for a claimed invention to be considered obvious, a POSA must have had a reason for combining teachings from multiple prior-art references (or for altering a single prior-art reference, in the case of obviousness in view of a single reference) in the fashion proposed.

[0048] I further understand that in determining whether a prior-art reference’s teachings would have been combined with teachings from other prior art or with other information within the knowledge of a POSA, the following are examples of approaches and rationales that may be considered:

- combining prior-art elements according to known methods to yield predictable results;
- simple substitution of one known element for another to obtain predictable results;
- use of a known technique to improve similar devices in the same way;

- applying a known technique to a known device ready for improvement to yield predictable results;
- applying a technique or approach that would have been “obvious to try,” i.e., choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;
- some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior-art reference or to combine prior-art reference teachings to arrive at the claimed invention. I understand that this teaching, suggestion or motivation may come from a prior-art reference or from the knowledge or common sense of one of ordinary skill in the art.

[0049] I understand that for a single reference or a combination of references to render the claimed invention obvious, a POSA must have had a

reasonable expectation of success in arriving at the claimed invention (e.g., by altering or combining the teachings of the applied references).

IV. PERSON OF ORDINARY SKILL IN THE ART (“POSA”)

[0050] I have been informed and understand that for purposes of assessing whether a prior-art reference discloses every element of a patent claim (thus “anticipating” the claim) and/or whether prior-art references would have rendered the claim obvious, the patent and the prior-art references must be assessed from the perspective of a person having ordinary skill in the art (“POSA”) to which the patent is related, based on the understanding of that person at the time of the patent claim’s priority date. I have been informed and understand that a POSA is presumed to be aware of all pertinent prior art and the conventional wisdom in the art, and is a person of ordinary creativity. I have applied this standard throughout my declaration.

[0051] The ’418 patent involves technology in the field of location-based services—including specifically “systems and methods for determining a device’s location” and “[m]ore particularly,...systems and methods for remotely determining a device’s location.” EX1001, 1:17-20. I have been asked to provide my opinions as to the state of the art in this field by March 2002. I use this timeframe because the face of the ’418 patent indicates an earliest claimed priority date of March 25, 2002. Whenever I offer an opinion in this declaration about the

knowledge of a POSA, the manner in which a POSA would have understood the claims of the '418 patent or its description, the manner in which a POSA would have understood the prior art, or what a POSA would have been led to do based on the prior art, I am referencing the early-2002 timeframe, even if I do not say so specifically in each case.

[0052] I understand that the Patent Owner may attempt to prove that the alleged invention recited in the challenged claims was conceived at some time prior to the earliest claimed priority date on the face of the patent. At the time of this declaration, I am unaware of the Patent Owner having alleged any earlier conception date or produced any evidence to establish any earlier conception date.

[0053] In my opinion, a person of ordinary skill in the art in the early-2002 timeframe (“POSA”) would have had a bachelor’s degree in computer science, computer engineering, electrical engineering, or a similar degree, with one or two years of experience with wireless networks and devices, such as cellphones and personal digital assistants (“PDAs”), as well as wireless positioning technologies, such as GPS or triangulation. More education could compensate for less practical experience, and vice versa. This person would have been capable of understanding and applying the teachings of the challenged patent and the prior-art references discussed in this declaration.

[0054] By 2002, I held a Bachelor of Science in Electrical Engineering, and I had well more than two years of experience with wireless networks and devices, including cell phones and PDAs, as well as with wireless positioning technologies, including GPS and triangulation. Therefore, I was a person of more than ordinary skill in the art during the relevant timeframe. However, I worked with many people who fit the characteristics of the POSA, and I am familiar with their level of skill. When developing the opinions set forth in this declaration, I assumed the perspective of a person having ordinary skill in the art, as set forth above.

V. THE '418 PATENT

[0055] The '418 patent is titled "Systems and Methods for Locating Cellular Phones and Security Measures for the Same." Its Abstract says it provides "[m]ore particularly, systems and methods for providing the location of a requested user's cellular phone from a requesting user's device (e.g., a second cellular phone) based on access rights defined by the requested user."

A. Specification Embodiments

[0056] Generally, the '418 patent's specification is addressed to determining and sharing a location of a wireless device, such as via the Global Positioning System ("GPS"). EX1001, 1:18-28. The patent alleges that "GPS systems have been integrated into cellular phones" but "only minimally utilized,"

so the patent purports to provide functionality to allow one cellphone user to “locate the position of” another user’s cellphone. EX1001, 1:28-43.¹

[0057] Cellphones in the ’418 patent can share their locations with a remote system, from which other users can obtain the locations. EX1001, 5:11-34. A user can also restrict access to their location by identifying authorized users or groups, thus specifying which other users may obtain their location information, indefinitely or for a period of time. EX1001, Abstract, 1:55-65, 3:23-31.

[0058] Figure 2 (copied below) depicts an example method to obtain another user’s location, which generally includes receiving a request for the location, determining whether the requesting user is authorized, and, if so, providing the location to the requestor. The location can be displayed on a map. EX1001, 8:11-14.

¹ As I demonstrate below with corroborating evidence, I disagree that by the early-2000s GPS was “only minimally utilized” in cellular phones. *See, e.g.*, Sheha, 10:5-16; Randall, pp. 22, 24. 29.

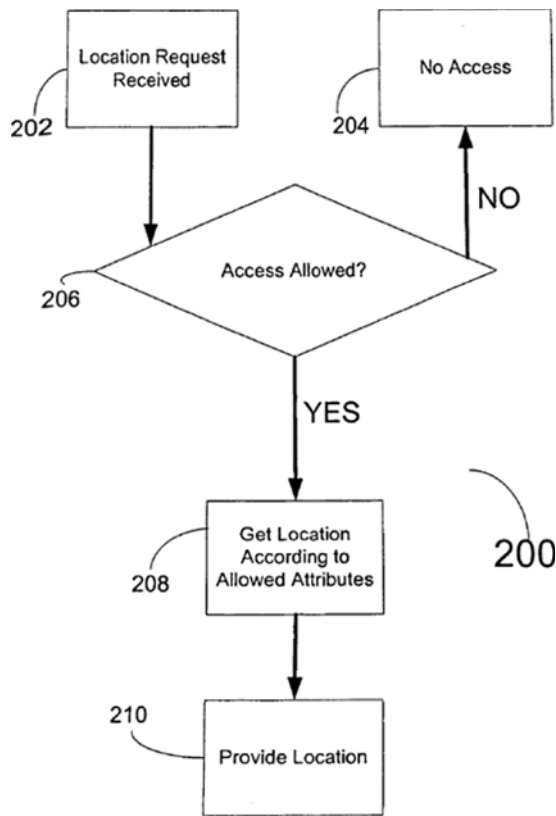


FIG. 2

EX1001, FIG. 2

[0059] After obtaining another user's location, various navigational information may be provided, such as a map showing the location or directional information, alerts indicating that another user is within a range of the requestor or that the requestor's dating profile matches that of another nearby user. EX1001, 2:3-8, 5:64-6:19, 7:31-8:5. Determining a location of the cellphone while it is off or based on location history is also mentioned. EX1001, 11:3-14. Some embodiments mentioned in the '418 patent require a user to enter a login and password, which may then be used to identify the user before the user's profile is

updated with their current location and before the user requests other users' locations. EX1001, 2:57-3:8, 3:27-31, 9:53-10:21.

B. Prosecution History of the '418 Patent

[0060] U.S. Patent Application No. 11/485,161, which issued as the '418 Patent, was rejected eighteen times before allowance. During the prosecution of the '418 Patent, 18 office actions (including 6 final rejections) over 15 years of prosecution, Applicant predominantly argued for patentability based on claimed functionality that the Examiner found to be well-known and conventional, such as displaying lists of users and manual logins, passwords, and selections of users. *See, e.g.,* EX1002, 232-235, 266-270, 652-657 (Applicant's remarks); EX1002, 216-219, 246-250, and 666-670 (Examiner remarks). Late in prosecution, Applicant amended its claims from method to system claims while introducing numerous limitations that recite various devices and pieces of information, e.g., locations and permissions, as being "operable of" of some functionality. EX1002, 644-651.

[0061] Despite these amendments, Applicant was unable to obtain allowance until amending claim 3 (now claim 1) to recite the "first wireless device is operable of providing a first map provided with respect to said location." EX1002, 680. The other independent claims were similarly amended.

[0062] While the Examiner subsequently allowed the application without comment and without providing a reason for allowance, the Examiner

maintained essentially the same rejections based on the Barclay reference (US 2003/0119522) for the several rejections until the addition of the limitation quoted above, or similar limitations added to the other two dependent claims. However, it is my opinion that prior art not considered by the examiner renders all claims of the '418 Patent unpatentable, as I discuss further below (§VIII).

C. The Challenged Claims

[0063] The challenged claims (claims 1-30, which are all the claims of the '418 patent) are reproduced in their entirety in an appendix at the end of this declaration.

[0064] The '418 patent's three independent claims (claims 1, 18, and 19) each recite a system comprising a first wireless device whose location is operable of being provided to a remote system and being requested by a second wireless device "outside of a call." The first wireless device's location can be provided from the remote system to the second wireless device "outside of said call" in accordance with a permission provided by the first wireless device. In claims 18 and 19, the second wireless device can also provide a permission for the first wireless device to obtain the second wireless device's location. Claim 19 further recites that updates of the locations are provided as a result of the permissions.

[0065] Each of the dependent claims recites further functionality that was routine and conventional before the '418 patent.

VI. CLAIM INTERPRETATION

[0066] In accordance with the standards for interpreting patent claim terms that I discussed above in Section III, I have interpreted the terms in the claims in accordance with their ordinary and customary meaning as understood by a POSA in the context of the patent (including the descriptions in the specification) and its prosecution history.

VII. PRIOR-ART REFERENCES

[0067] I briefly introduce in this Section below various prior-art references discussed in this declaration.

A. Background on Motivation to Combine and Reasonable Expectation of Success in Combining Prior Art

[0068] The '418 patent purports to have provided a variety of innovations, such as “locat[ing] the position of a different user’s cellular phone (e.g., a requested user) based upon requestor assigned access rights[,]” EX1001, 1:38-42, and more broadly, “provid[ing] systems and methods which better utilize the information about a device’s location,” EX1001, 1:31-33.

[0069] It is my opinion that not only were the purported inventions known to POSAs prior to 2002, the 1990s federal mandate to update wireless

devices and carrier network location-based technologies and services spurred innovation in this field years before the patents were filed.

[0070] It is my understanding, and was the understanding of a POSA, that the 1996 Telecommunications Act, and in particular FCC orders (the “911 Mandate”) that came from it dramatically changed the telecommunications industry in the United States, particularly for the wireless industry in general and even more so the development and deployment of wireless location technologies and associated location-based services (“LBS”). The Act and 911 Mandate required action on every part of the wireless ecosystem: devices, carriers, end users, application providers, equipment makers and service providers, providing much of the groundwork for subsequent location-related services in the United States, including transportation/transit applications.

[0071] The 911 Mandate was rooted in part in the inability of 911 dispatchers to locate mobile phone callers, which set off a subsequent FCC order process that resulted in a mandate by the FCC requiring wireless carriers to be able to locate cell phones for 911 emergency purposes. Federal Communications Commission. “Third Report and Order.” October 6, 1999.

<https://transition.fcc.gov/Bureaus/Wireless/Orders/1999/fcc99245.pdf> (last checked 09-30-2024). The original mandate had a target of 5 years for completion (by December 2001, later revised to the end of 2005), with a variety of interim

milestone targets to be met. The mandate required that carriers be able to determine and deliver to Public Safety Answering Points (PSAPs, e.g., 911 dispatchers) the location of a cell phone within a specific range of accuracy.²

[0072] Thus, well before Mr. Mullen purportedly invented the ideas described in the challenged patent, the U.S. E911 mandate requiring the locating devices and sharing that location with other systems (and in turn other users) had been in existence for several years, where much of the wireless industry (particularly wireless carriers and their suppliers) had been actively working for years to meet the original mandate milestones, to avoid multi-million dollar fines, and to enable applications that could monetize the extensive (many millions of dollars) infrastructure investments that the mandate necessitated.

[0073] Further, a variety of location information sharing innovations were occurring by that time, stimulated by the coming ubiquity of cell phone location capabilities and further buoyed by the elimination in May 2000 of the GPS system's "Selective Availability," which had deliberately distorted GPS signals so

² For handset-based solutions: 50 meters for 67 percent of calls, 150 meters for 95 percent of calls; For network-based solutions: 100 meters for 67 percent of calls, 300 meters for 95 percent of calls. *See* https://transition.fcc.gov/pshs/services/911-services/enhanced911/archives/factsheet_requirements_012001.pdf at p.3 (last checked 09-30-2024).

they would be inaccurate up to 100 meters.³ As the White House's press release said at the time⁴:

GPS IS A CRITICAL TECHNOLOGY FOR INDIVIDUALS AND BUSINESSES AROUND THE GLOBE. GPS is a dual-use system, providing highly accurate positioning and timing data for both military and civilian users. There are more than 4 million GPS users world wide, and the market for GPS applications is expected to double in the next three years, from \$8 billion to over \$16 billion. Some of these applications include: air, road, rail, and marine navigation, precision agriculture and mining, oil exploration, environmental research and management, telecommunications, electronic data transfer, construction, recreation and emergency response.

https://clintonwhitehouse4.archives.gov/WH/New/html/20000501_2.html.⁵

[0074] These new applications and enhancement of existing applications looked to capitalize on the additional capabilities and associated benefits that having location as part of the data set/app functionality would provide. These include improving efficiencies and costs of mobile resources deployment and utilization, new revenue potential from new and more tailored apps, personalizing/customizing functionality based on location, improved

³ Specifically, up to 100 meters vertically, and up to 50 meters horizontally.

⁴ That Selective Availability would likely be discontinued was known as early as the 1996 Telecommunications Act.

See <https://ieeexplore.ieee.org/document/838346> (last checked 09-30-2024).

⁵ I have added all emphasis in this declaration unless I have specified otherwise.

convenience, improved privacy and security, providing real-time status based on/including current location, collecting historical location for after-the-fact analysis and forward-looking projections of location-related resources, in enabling more custom data presentation based on/utilizing a user's (device) location, enabling new use cases, and enhancing particular use case(s) and overall application customer experience.

[0075] For example, a Google Patent search for “location services” and “sharing” prior to March 25, 2002 yields over 136,000 results.⁶ Over 129,000 of those results⁷ appear for between May 1, 2000 and March 25, 2002, indicating at least in part the widespread recognition of the benefits from the improved accuracy resulting from removal of Selective Availability, the utility/benefits of sharing location information, and more generally the growing awareness of the potential for location-based services around the turn of the century. Further, over 95,000 results remain when further filtered by adding “cost reduction” or “improved efficiencies.”⁸ Similarly, a search for “location services” and “sharing” and “new

⁶ [https://patents.google.com/?q=location+services&q=sharing&before=priority:2002 0325](https://patents.google.com/?q=location+services&q=sharing&before=priority:2002%20325) (last checked 9/17/2024).

⁷ <https://patents.google.com/?q=location+services&q=sharing&q=cost+reduction,improve+efficiencies&before=priority:20020325&after=priority:20000501> (last checked 9/17/2024).

⁸ <https://patents.google.com/?q=location+services&q=sharing&q=cost+reduction,improve+efficiencies&before=priority:20020325&after=priority:20000501> (last checked 9/17/2024).

revenue” yielded over 15,000 results.⁹ Replacing the search of “new revenue” with “improved user interface” yielded over 84,000 results,¹⁰ and “navigation” instead of “new revenue” yielded over 25,000 results.¹¹ Thus, by the time of the patent priority date, the potential benefits of location services involving the sharing of information like location were well known, including services involving navigation and better user interface capabilities. In addition, a POSA would also recognize the multitude of technology capabilities and varied user interface challenges associated with location-related technology and data, and seek out ways to improve a user’s ability to utilize and interact with such (often large amounts of) location data via meaningful and efficient mechanisms.

It is my opinion, and was the understanding of a POSA, that the LBS field rapidly grew in the late 1990s and early 2000s as the wireless industry strived to satisfy the U.S. E911 mandate and innovators recognized the potential of LBS, particularly with Selective Availability removed. Further, it is my opinion that the

⁹ <https://patents.google.com/?q=location+services&q=sharing&q=new+revenue&before=priority:20020325&after=priority:20000501> (last checked 9/17/2024).

¹⁰ <https://patents.google.com/?q=location+services&q=sharing&q=improved+user+interface&before=priority:20020325&after=priority:20000501> (last checked 9/17/2024).

¹¹ <https://patents.google.com/?q=location+services&q=sharing&q=navigation&before=priority:20020325&after=priority:20000501> (last checked 9/17/2024).

general advances in the LBS field would have motivated a POSA to combine the asserted references as I describe in more detail below.

B. Sheha (EX1005)

[0076] Sheha is titled “System and Method for Providing Routing, Mapping, and Relative Position Information to Users of a Communication Network.” Sheha “is directed to a system and method for providing real-time position information of one party to another party” such that “a party may locate the position of another party” and “retrieve routing instructions or maps for traveling to or from each other.” Sheha, Abstract.

[0077] According to the face of the document, Sheha (EX1005) is a United States patent issued on February 19, 2008 as Patent No. 7,333,820 from an application filed on July 11, 2002 as Application No. 10/194,518. That application claimed priority to a provisional application filed on July 17, 2001 as Provisional Application No. 60/305,975. I have been informed that EX1006 is a copy of the Sheha provisional application as available from the website of the United States Patent and Trademark Office.

[0078] By comparing EX1005 to EX1006, I have observed that the written description and figures of Sheha (the non-provisional publication) (EX1005) are substantively identical to those of the Sheha provisional application (EX1006).

[0079] Based on comparing claim 1 of Sheha (EX1005) to the written description in the Sheha provisional application (EX1006), it is also my opinion that the Sheha provisional application provides written description support for claim 1 of Sheha, as shown in the table below:

Table 1: Claim Chart comparing Claim 1 of Sheha to Sheha’s Provisional Application (EX1006)

Sheha (EX1005) Claim 1 Limitation	Sheha’s Provisional Application Support in EX1006
1. A method of providing position information of a caller using a telecommunication network, said method comprising the steps of:	“It is another object of the present invention to provide a method for...the purpose of determining position information associated with the telephone number by searching a networked database.” 4:6-10.¹² <i>See also</i> 4:11-18; 4:21-25 (“the position information to a caller is displayed”); 11:3-27 (caller uses a “telephone network,” which is “<i>a telecommunication network</i>”); 12:30-32 (supported telecommunication networks include “CDMA, TDMA, or GSM”).
receiving caller information, said caller information being associated with a telecommunication event that is initiated by the caller, said caller information including at least one of a caller identification information and	“The act of dialing the telephone number to another remote landline telephone [‘a telecommunication event’], such as a residential telephone, triggers the transfer of position information, such as in the form of a map, to either one or both of the local

¹² Citations are to the native page numbering of the provisional application’s specification within EX1006, rather than to the PDF page numbers of EX1006. For example, 4:6-10 occurs at lines 6-10 of native page 4 of the specification, which is on page 8 of the PDF of EX1006.

the phone number information of the caller;	and/or remote telephone devices.” 6:13-17. “In one embodiment the display unit on the destination telephone 8 [<i>i.e.</i>, the device receiving the caller information] can display the caller’s name [<i>‘caller identification information’</i>], telephone number, address, and can provide a map illustration of varying resolutions configured by the user through the telephone network 2.” 11:28-31. “The ODAS 3 is preferably notified that a telephone call is being established by the telephone network 2 [<i>‘a telecommunication event that is initiated by the caller’</i>]. Included in this notification is the telephone number and user identification information for both the originating and destination telephone numbers.” 13:9-13. “After the system has verified that the destination telephone number user is signed-on, the ODAS 3 sends a notification to the device 6 that the user is signed-on.” 13:29-31. “In this embodiment, the notification appears on the user’s display device 6 just prior or during the ringing or notification that the telephone has an incoming telephone call. In one embodiment, the display 24 of the user’s device shows that he or she is signed-on and can have numerous miscellaneous window(s) 25 open at
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	the time the Map Caller-ID notification is activated. The Map Caller-ID notification window 26 typically contains only the originating user identification and telephone number, but may also contain map information of varying resolution.” 14:6-13.
accessing caller privacy information, said caller privacy information identifying a caller user group consisting of a plurality of group members pre-defined by said caller, each group member of the caller user group being a user of the telecommunication network;	“In this case, users who are initiating or receiving the telephone calls [<i>‘users of the telecommunication network’</i>] have their local telephone numbers stored into a database that resides on a secure network.” 6:21-23. “In another embodiment, the destination remote mobile device receiving the telephone call obtains the position information from the calling local mobile device, based on permission settings of the calling local mobile device [<i>‘caller privacy information’</i>], for the performance of various operations, such as mapping and calculating driving directions.” 7:19-23. “In another embodiment, each device has privacy settings that allow the device to prevent or limit other calling devices from obtaining position information [<i>‘caller privacy information’</i>].” 8:14-16. “In another embodiment, users can define a group of specific users that have access to this information [<i>‘identifying a caller user group consisting of a plurality of group members pre-defined by said caller’</i>]. This is also accomplished by utilizing

	a group database and authorization and authentication protocols to identify users that are permitted to access this information [<i>‘identifying a caller user group consisting of a plurality of group members pre-defined by said caller’</i>].” 18:30-19:1.
receiving receiver information, said receiver information being associated with said telecommunication event initiated by the caller, said receiver information including a unique identification information of the receiver;	“This invention relates to location and navigational systems and to the determination of local and remote position information in ad-hoc landline and wireless systems, including the utilization of unique identification addresses, such as telephone numbers or Internet Protocol (IP) addresses [<i>‘unique identification information’</i>], for such purposes as providing real-time location information, maps, routing, and direction finding.” 1:6-11. “It is yet another object of the present invention to provide a method for entering a unique identification token [<i>‘unique identification information’</i>], such as an e-mail address, that can be used on a networked server system utilizing authentication and authorization procedures, in order to determine position information and to pass that information between a plurality of unique users or applications on various devices.” 4:11-16. “The act of dialing the telephone number to another remote landline telephone [<i>‘a telecommunication event’</i>], such as a residential telephone, triggers the transfer of position information, such as in the form of a

	map, to either one or both of the local and/or remote telephone devices.” 6:13-17. “In order to determine the position information of a remote landline or wireless device in order to obtain driving directions to that device or other related information about that device, in one embodiment, a user can initiate a position request by entering a unique identification token, such as an e-mail address.” 8:1-5. “Therefore, in this embodiment, when a telephone 8 dials a destination standard telephone 5 [<i>said telecommunication event initiated by the caller</i>], the destination telephone number is sent over the dedicated landline connection 9b to the telephone network 2 [<i>unique identification information</i>]. The ODAS 3 is sent both the originating and destination telephone numbers via the telephone network connection 10. In another embodiment, accompanying information, such as user identification information associated with each telephone number is also sent to the ODAS 3.” 13:1-7. “The ODAS 3 receives both the originating and destination telephone numbers, users’ account information, and position information for both mobile devices 18b and 18c [<i>receiving receiver information, said receiver information</i>]
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	<i>being associated with said telecommunication event initiated by the caller, said receiver information including a unique identification information of the receiver’]</i> ” 17:29-31.
verifying whether the receiver is a member of the caller user group;	“A mobile or landline device can also request position information of another mobile or landline device by only specifying a telephone number, without having to initiate a telephone call. For a landline-to-landline position request, the specified telephone number is correlated to its position information using telephone information from a known database or sets of databases. In one embodiment, the online database that contains this information only includes users that do not have unlisted telephone numbers. In another embodiment, users can define a group of specific users that have access to this information. This is also accomplished by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information. When a mobile device's position information is requested, the system, based on privacy settings, responds with the appropriate position information to the requesting user's device. In another embodiment, using the authorization and authentication protocols a user can request the position of a mobile device, similarly to requesting the position of a landline device.” 18:23-19:6.

retrieving a caller position information, said caller position information indicating a location of the caller; and	“It is another object of the present invention to provide a method for...the purpose of determining position information associated with the telephone number [<i>‘retrieving a call position information ... indicating a location of the caller’</i>] by searching a networked database.” 4:6-10. “It is yet another object of the invention to provide an alternative form of Caller-ID (Map Caller-ID) to a local computing telephone device for display of the caller’s position information This position information transfer is done utilizing authentication and authorization procedures or telephone-to-position information correlation procedures for caller identification.” 4:19-28. <i>See also</i> 5:5-11 (“acquire local or remote position information through the methods described above”); 6:13-17 (“The act of dialing the telephone number to another remote landline telephone, such as a residential telephone, triggers the transfer of position information, such as in the form of a map, to either one or both of the local and/or remote telephone devices.”); 7:19-23 (“In another embodiment, the destination remote mobile device receiving the telephone call obtains the position information from the calling local mobile device [<i>‘retrieving a call position information ... indicating a location of the caller’</i>], based on permission settings of the calling local mobile device, for the
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	performance of various operations, such as mapping and calculating driving directions.”); 11:21-24 (“Map Caller-ID includes additional position information fields of various formats, and can include map information at varying resolutions of both the originating and destination telephone number’s locations.”); 14:21-25 (“In one embodiment, this new information window 30 is a detailed Map Caller-ID information window of varying resolution displaying the originating position information, such as a map location 33 of the caller, and the user’s location position information, such as a map location 34 of the destination telephone number.”); 18:15-22 (“The mobile devices 18b and 18c continually send their updated position information to the ODAS 3, when the position information has changed significantly as compared to the positioning error probability and as determined by the positioning technology or network configuration. The ODAS 3 periodically updates each mobile device with the other’s position information, thus providing real-time driving directions and route information. In another embodiment, the position information transfer can be sent in a peer-to-peer configuration, thus circumventing the ODAS 3.”)
transmitting to the receiver the caller position information if the receiver is verified to be a member of the caller user group,	“The mobile devices 18b and 18c continually send their updated position information to the ODAS 3, when the position information has changed significantly as compared to the positioning error probability and as

	determined by the positioning technology or network configuration. The ODAS 3 periodically updates each mobile device with the other's position information [<i>“transmitting to the receiver the caller position information”</i>], thus providing real-time driving directions and route information. In another embodiment, the position information transfer can be sent in a peer-to-peer configuration, thus circumventing the ODAS 3.” 18:15-22. “A mobile or landline device can also request position information of another mobile or landline device by only specifying a telephone number, without having to initiate a telephone call. For a landline-to-landline position request, the specified telephone number is correlated to its position information using telephone information from a known database or sets of databases. In one embodiment, the online database that contains this information only includes users that do not have unlisted telephone numbers. In another embodiment, users can define a group of specific users that have access to this information [<i>‘receiver is verified to be a member of the caller user group’</i>]. This is also accomplished by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information [<i>‘receiver is verified to be a member of the caller user group’</i>]. When a mobile device's position information is
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	requested, the system, based on privacy settings, responds with the appropriate position information to the requesting user's device [<i>“transmitting to the receiver the caller position information if the receiver is verified to be a member of the caller user group”</i>]. In another embodiment, using the authorization and authentication protocols a user can request the position of a mobile device, similarly to requesting the position of a landline device.” 18:23-19:6.
wherein the transmission of the caller position information is associated with the telecommunication event and occurs after the telecommunication event is initiated.	“The act of dialing the telephone number to another remote landline telephone [<i>‘a telecommunication event’</i>], such as a residential telephone, triggers the transfer of position information, such as in the form of a map, to either one or both of the local and/or remote telephone devices [<i>i.e., ‘the transmission of the caller position information is associated with the telecommunication event and occurs after the telecommunication event is initiated’ because the transfer is triggered by the telecommunication event</i>].” 6:13-17. “In another embodiment, users can define a group of specific users that have access to this information. This is also accomplished by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information. When a mobile device’s position information is requested [<i>i.e., ‘after the telecommunication event is initiated’</i>],

	the system, based on privacy settings, responds with the appropriate position information to the requesting user's device [<i>‘transmitting to the receiver the caller position information if the receiver is verified to be a member of the caller user group’</i>]. In another embodiment, using the authorization and authentication protocols a user can request the position of a mobile device, similarly to requesting the position of a landline device.” 18:30-19:6.
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[0080] Because Sheha’s disclosure is substantively identical to that of its provisional application, and because the provisional application’s disclosure provides written-description support for at least one of Sheha’s claims (e.g., Sheha’s claim 1 as I demonstrated above), I have been informed by counsel that Sheha qualifies as prior art to the ’418 patent based on the filing date of Sheha’s provisional application.

[0081] As discussed in Sections VIII.A-D below, in my opinion a POSA would have understood that Sheha, in combination with other references, anticipates and/or renders obvious all claims of the ’418 patent. *See also infra* §VIII.A.1 (additional discussion of Sheha).

C. Randall (EX1007)

[0082] Randall is titled “Method of Enabling a Wireless Information Device to Access Data Services.” Randall relates to “enabling a wireless

information device to access data from several data services providers...using an extensible framework which handles data passing to and from several applications resident on the device, the framework being shared by each of the applications resident on the device and also being shared by each of the data services providers.” Randall, Abstract. “As an example,...a user might choose to subscribe to a service which allowed others to track his or her location” and “show the position of the user” on “digital maps.” Randall, [0021].

[0083] According to the face of the document, Randall (EX1007) is a published U.S. patent application, published on February 5, 2004 as Publication No. 2004/0024846 from an international patent application that was filed on August 22, 2001 as PCT (WIPO) Application No. PCT/GB01/03788 and entered the U.S. national stage as U.S. Application No. 10/362,109. I have been informed by counsel that Randall qualifies as prior art to the ’418 patent based on Randall’s international filing date. I have also compared the WIPO publication of Randall (EX1008) to the U.S. publication of Randall (EX1007) and I have observed that they are substantively identical. In Table 2 below, I have listed the paragraphs in the U.S. publication of Randall that appear on each page of the WIPO publication of Randall. Thus, although in this declaration I cite to the U.S. publication of Randall (EX1007) for ease of reference, each citation to the U.S. publication has a

substantively identical citation in the WIPO publication of Randall at the corresponding page shown in the following table:

**Table 2: Comparison of PCT Application No. PCT/GB01/03788 (EX1008)
and U.S. Publication No. 2004/0024846 (EX1007)**

Randall PCT	Randall US		
Pg. 1	[0001 - 0004]	Pg. 43	[0303 - 0312]
Pg. 2	[0005 - 0007]	Pg. 44	[0313 - 0336]
Pg. 3	[0008 - 0009]	Pg. 45	[0337 - 0354]
Pg. 4	[0009 - 0012]	Pg. 46	[0354 - 0354]
Pg. 5	[0012 - 0015]	Pg. 47	[0355 - 0362]
Pg. 6	[0015 - 0020]	Pg. 48	[0362 - 0367]
Pg. 7	[0020 - 0022]	Pg. 49	[0368 - 0377]
Pg. 8	[0022 - 0026]	Pg. 50	[0377 - 0384]
Pg. 9	[0027 - 0032]	Pg. 51	[0385 - 0394]
Pg. 10	[0033 - 0046]	Pg. 52	[0395 - 0400]
Pg. 11	[0046 - 0050]	Pg. 53	[0401 - 0409]
Pg. 12	[0051 - 0054]	Pg. 54	[0409 - 0417]
Pg. 13	[0055 - 0059]	Pg. 55	[0418 - 0420]
Pg. 14	[0060 - 0063]	Pg. 56	[0420 - 0426]
Pg. 15	[0063 - 0067]	Pg. 57	[0427 - 0434]
Pg. 16	[0067 - 0069]	Pg. 58	[0435 - 0443]
Pg. 17	[0069 - 0073]	Pg. 59	[0443 - 0450]
Pg. 18	[0073 - 0074]	Pg. 60	[0451 - 0457]
Pg. 19	[0075 - 0081]	Pg. 61	[0458 - 0468]
Pg. 20	[0081 - 0086]	Pg. 62	[0468 - 0472]
Pg. 21	[0087 - 0097]	Pg. 63	[0473 - 0481]
Pg. 22	[0098 - 0107]	Pg. 64	[0482 - 0486]
Pg. 23	[0108 - 0115]	Pg. 65	[0487 - 0495]
Pg. 24	[0116 - 0127]	Pg. 66	[0495 - 0499]
Pg. 25	[0127 - 0130]	Pg. 67	[0499 - 0500]
Pg. 26	[0130 - 0139]	Pg. 68	[0501 - Table 1]
Pg. 27	[0140 - 0147]	Pg. 69	[Table 1 - 506]
Pg. 28	[0147 - 0153]	Pg. 70	[0507 - 0509]
Pg. 29	[0153 - 0162]	Pg. 71	[0510 - Table 2]
Pg. 30	[0163 - 0171]	Pg. 72	[0512 - 0514]
Pg. 31	[0172 - 0181]	Pg. 73	[0515 -Table 4]
Pg. 32	[0181 - 0190]	Pg. 74	[Table 4]
Pg. 33	[0191 - 0196]	Pg. 75	[Table 4]
Pg. 34	[0197 - 0209]	Pg. 76	[Table 4]
Pg. 35	[0210 - 0224]	Pg. 77	[Table 4]
Pg. 36	[0225 - 0239]	Pg. 78	[Table 4]
Pg. 37	[0240 - 0249]	Pg. 79	[Table 4]
Pg. 38	[0250 - 0257]	Pg. 80	[Table 4]
Pg. 39	[0257 - 0261]	Pg. 81	Appendix 1
Pg. 40	[0262 - 0279]	Pg. 82	Appendix 1
Pg. 41	[0280 - 0292]	Pg. 83	Appendix 1
Pg. 42	[0293 - 0303]	Pg. 84	Appendix 1
		Pg. 85	Appendix 1
		Pg. 86	Appendix 1

[0084] As discussed in Sections VIII.E-I below, in my opinion a POSA would have understood that Randall, alone or in combination with other references, anticipates and/or renders obvious all claims of the '418 patent. *See also infra* §VIII.E.1 (additional discussion of Randall).

D. Ryden (EX1009)

[0085] According to the face of the document, Ryden (EX1009) is a United States patent issued on June 19, 2007 as Patent No. 7,233,795 from an application filed on March 19, 2002 as Application No. 10/101,841. That application claimed priority to a provisional application filed on March 19, 2001 as Provisional Application No. 60/277,117. I have been informed that EX1010 is a copy of the Ryden provisional application as available from the website of the United States Patent and Trademark Office.

[0086] By comparing EX1009 to EX1010, I have observed that the written description and figures 1-16 of Ryden (the non-provisional publication) (EX1009) are substantively nearly identical to those of the Ryden provisional application (EX1010), and every disclosure in Ryden (the non-provisional publication) that I discuss in Grounds 2 and 8 below (§VIII.B.3, §VIII.H.3) is supported by Ryden's provisional application, as demonstrated by the citations I provide below in Grounds 2 and 8.

[0087] Based on comparing claim 1 of Ryden (EX1009) to the written description in the Ryden provisional application (EX1010), it is also my opinion that the Ryden provisional application provides written description support for claim 1 of Ryden, as shown in the table below:

Table 3: Claim Chart comparing Claim 1 of Ryden (EX1009) to Ryden’s Provisional Application (EX1010)

Ryden (EX1009) Claim 1 Limitation	Ryden’s Provisional Application Support in EX1010
1. A communication system for communication between a first communications unit and at least one other communications unit, comprising:	“The present invention comprises a communication system which may be integrated with current telephonic system, e.g. hard-wired or cellular, or may be used as a partial or complete replacement for current methods of initiating and maintaining telephonic (voice, facsimile, data, e-mail, etc.) communication between parties.” Ryden-Provisional, 6:19-24.¹³ “In a location-based communication system of the invention, each mobile unit [e.g., <i>first and second communication units</i>] To initiate a call [<i>a communication</i>] from a first telephone unit to a second telephone unit” Ryden-Provisional, 7:14-24. “The invention may be broadly summarized as comprising methods and apparatus for connecting

¹³ Citations are to the native page numbering of the provisional application’s specification within EX1006, rather than to the PDF page numbers of EX1010. For example, 6:19-24 occurs at lines 19-24 of native page 6 of the specification, which is on page 9 of the PDF of EX1010.

	telephone units 10 for directional communication on the basis of the earth location of the calling and/or called telephone units, rather than on the basis of a conventional assigned telephone number.” Ryden-Provisional, 13:7-12. <i>See also</i> Ryden-Provisional, 13:7-14:6.
first communications unit, comprising:	“In a location-based communication system of the invention, each mobile unit [e.g., <i>first and second communication units</i>] To initiate a call from a first telephone unit [<i>first communication unit</i>] to a second telephone unit” Ryden-Provisional, 7:14-24 “The term ‘telephone unit’ is used to describe a terminal apparatus by which a user may access a communication system, and may transmit and receive voice, data, e-mail, facsimile information and the like.... A telephone unit may be configured as a desk or wall-mounted ‘hand-set’, a mobile unit, vehicle mounted telephone unit, a computer terminal or other apparatus.” Ryden-Provisional, 12:13-27.
radio-telephone means for sending and receiving messages by radio including means for initiating, maintaining and terminating said messages;	An exemplary “<i>radio-telephone means for sending and receiving messages by radio including means for initiating, maintaining and terminating said messages</i>” disclosed in Ryden is “an antenna 62 for transmitting radio frequency (RF) signals 60 to and receiving radio frequency (RF) signals 60 (or other type of

	transmission) from a transceiver of a communications satellite (CS) 7. Alternatively, the antenna 62 may send/receive signals 60 to/from a cellular tower or other system." Ryden, 9:57-62; 9:63-67; <i>see also</i> FIGS. 2-3, 8. Ryden's provisional includes the same disclosure. <i>See</i> Ryden-Provisional, 16:9-20, FIGS. 2-3, 8.
means for receiving encoded earth locations of itself in at least two dimensions from a Position Locating Satellite;	An exemplary "<i>means for receiving encoded earth locations of itself in at least two dimensions from a Position Locating Satellite</i>" disclosed in Ryden is "a location determination device 80 which may comprise a computer which determines the specific location i.e., G# 30 of the telephone unit 10B based on wireless signals 32 from a physical location system satellite (PLS) or satellites 9 received by PLS signal antenna 84. The location data may be stored in memory 82 as a latitude number 34 and a longitude number 36 [<i>at least two dimensions</i>], and preferably with an altitude number 38 (or an equivalent third dimension), the combination together indicating the location or G# 30 of the telephone unit 10 on the earth's surface 25 or in three dimensions including altitude 38 e.g. above sea level, or alternatively above ground level. As already indicated, the location G# 30 may be configured and stored in memory 82 as a numeric or alpha-numeric sting indicative of the 2-dimensional or 3-dimensional position G." Ryden, 10:1-16; <i>see also</i> FIGS. 2-3.

	Ryden’s provisional includes the same disclosure. <i>See</i> Ryden-Provisional, 16:21-17:6; <i>see also</i> FIGS. 2-3.
means for encodingly defining a selectable geographic zone having boundaries encoded in at least two dimensions to seek connection with a targeted communications unit;	An exemplary “<i>means for encodingly defining a selectable geographic zone having boundaries encoded in at least two dimensions to seek connection with a targeted communications unit</i>” disclosed in Ryden is “the initiating call from the first telephone unit is directed (e.g., through a communications transceiver on a satellite or cellular system) to include a two-dimensional area or a three-dimensional space having boundaries [defining a selectable geographic zone having boundaries encoded in at least two dimensions] within which the G# (i.e. location) of the second telephone unit is located [<i>a targeted communications unit</i>]. This area or space is called herein a Geographic Zone or GZ for short, and has a brief numeric or alphanumeric electronically transmittable code defining the limits of the GZ.” Ryden, 4:57-65 Ryden discloses “[a]n initiating telephone call will preferably include the G# of the calling telephone unit ... and a definition of the area within which a desired called telephone unit is located, e.g. a GZ#.” Ryden, 5:4-8. Ryden discloses that “[u]pon activation 194 of the call function 41, a G# 30 or GZ# 20 must be entered defining the location of the telephone unit 10B which is to be called. The particular

	method used depends on several factors... it may be keyed in, i.e entered by hand 210 or from the unit's memory 176." Ryden, 12:48-55. <i>See also</i> Ryden, 12:50-13:48; FIGS. 2-3. Ryden's provisional includes the same disclosures. <i>See</i> Ryden-Provisional, 7:25-8:6, 8:7-11, 22:15-24:13, FIGS. 2-3.
means for initiating a radio call in said selected geographic zone, said radio call including a code of said selected zone; and	An exemplary "<i>means for initiating a radio call in said selected geographic zone, said radio call including a code of said selected zone</i>" disclosed in Ryden is "[u]pon activation 194 of the call function 41, a G# 30 or GZ# 20 must be entered defining the location of the telephone unit 10B which is to be called. The particular method used depends on several factors... it may be keyed in, i.e entered by hand 210 or from the unit's memory 176." Ryden, 12:48-55. Ryden also discloses "[a]n initiating telephone call will preferably include the G# of the calling telephone unit ... and a definition of the area within which a desired called telephone unit is located, e.g. a GZ#." Ryden, 5:4-8. <i>See also</i> Ryden, 4:57-65, 12:50-13:48; FIGS. 2-3. Ryden's provisional includes the same disclosures. <i>See</i> Ryden-Provisional,

	7:25-8:6, 8:7-11, 22:15-24:13, FIGS. 2-3.
second communications unit, comprising:	“In a location-based communication system of the invention, each mobile unit [e.g., <i>first and second communication units</i>] To initiate a call from a first telephone unit to a second telephone unit [<i>second communication unit</i>]” Ryden-Provisional, 7:14-24. “The term ‘telephone unit’ is used to describe a terminal apparatus by which a user may access a communication system, and may transmit and receive voice, data, e-mail, facsimile information and the like.... A telephone unit may be configured as a desk or wall-mounted ‘hand-set’, a mobile unit, vehicle mounted telephone unit, a computer terminal or other apparatus.” Ryden-Provisional, 12:13-27.
radio-telephone means for sending and receiving messages by radio including means for initiating, maintaining and terminating said messages;	<i>See same limitation above for the “first communication unit.”</i> <i>See also</i> Ryden-Provisional, 15:2-5 (“Where the text specifically refers to one of a stationary or mobile unit, stationary telephone units will be identified by the numeral 10A, and mobile units by 10B.”)
means for receiving encoded earth locations of itself in at least two dimensions from a Position Locating Satellite;	<i>See same limitation above for the “first communication unit.”</i>
means for encodingly defining a selectable geographic zone having boundaries encoded in at least two	<i>See same limitation above for the “first communication unit.”</i>

dimensions to seek connection with a targeted communications unit;	
means for comparing said geographic zone selected by said first communications unit with said encoded earth location of itself to determine agreement therewith, and	An exemplary “<i>means for comparing said geographic zone selected by said first communications unit with said encoded earth location of itself to determine agreement therewith</i>” disclosed in Ryden is “telephone units 10 are programmed so that, upon sensing a telephone call origination message from a communications satellite 7 (or other location based communication system) which agrees with its own G# 30. ... [The unit] respond[s] with its G# 30 and identification number 140 to every call 23 it senses which is in agreement with its location....” Ryden, 16:43-58. Ryden also discloses that “[t]he called telephone unit receives the initiating call, compares the called geographic definition with its own location. If there is agreement, the called telephone unit will signal that it has received a call, and an ANSWER command may be entered by its user (or an automatic response may [be] initiated by the unit) to complete the connection and begin communication.” Ryden, 5:14-21. Ryden’s provisional includes the same disclosures. <i>See</i> Ryden-Provisional, 8:14-19, 30:23-31:8.
means for responding to said radio call when said encoded earth location of itself is encompassed by said selected geographic zone.	An exemplary “<i>means for responding to said radio call when said encoded earth location of itself is encompassed by said selected geographic zone</i>” disclosed in Ryden is “telephone units

	10 are programmed so that, upon sensing a telephone call origination message from a communications satellite 7 (or other location based communication system) which agrees with its own G# 30. ... [The unit] respond[s] with its G# 30 and identification number 140 to every call 23 it senses which is in agreement with its location....” Ryden, 16:43-58. Ryden also discloses that “[t]he called telephone unit receives the initiating call, compares the called geographic definition with its own location. If there is agreement, the called telephone unit will signal that it has received a call, and an ANSWER command may be entered by its user (or an automatic response may [be] initiated by the unit) to complete the connection and begin communication.” Ryden, 5:14-21. Ryden’s provisional includes the same disclosures. <i>See</i> Ryden-Provisional, 8:14-19, 30:23-31:8.
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[0088] Because Ryden’s disclosure is nearly substantively identical to that of its provisional application, and because the provisional application’s disclosure provides written-description support for at least one of Ryden’s claims (e.g., Ryden’s claim 1 as I demonstrated above) and support for the disclosure in Ryden that I identify for Grounds 2 and 8 (as I demonstrate below, *infra* §VIII.B.3, §VIII.H.3), I have been informed by counsel that Ryden qualifies as prior art to the

'418 patent based on the filing date of Ryden's provisional application. *See also infra* §VIII.B.1 (additional discussion of Ryden).

E. Tanaka (EX1011)

[0089] Tanaka is titled "Method for providing matching and introduction services to proximate mobile users and service providers" and relates to "enabling mobile wireless users to obtain information on other proximate users both fixed and wireless." Tanaka, Abstract. According to the face of the document, Tanaka is a United States patent issued on November 16, 2004 as Patent No. 6,819,919 from an application filed on October 18, 2000 as Application No. 09/691,322. I have been informed by counsel that Tanaka qualifies as prior art to the '418 patent based on Tanaka's filing date. *See also infra* §VIII.C.1 (additional discussion of Tanaka).

F. Ganesh (EX1012)

[0090] Ganesh is titled "Method for providing a current location of a wireless communication device" and relates to "providing the current location of a wireless communication device in a wireless communication network to an authorized requesting party." Ganesh, 1:15-17. According to the face of the document, Ganesh is a United States patent issued on March 14, 2006 as Patent No. 7,013,148 from an application filed on December 21, 2001 as Application No. 10/032,355. I have been informed by counsel that Ganesh qualifies as prior art to

the '418 patent based on Ganesh's filing date. *See also infra* §VIII.D.1 (additional discussion of Ganesh).

G. Wollrab (EX1014)

[0091] Wollrab is titled "Family calendar notification and tracking" and relates to "an electronic system and method for managing location, calendar, and event information." Wollrab, Abstract. According to the face of the document, Wollrab is a United States patent issued on July 19, 2005 as Patent No. 6,920,328 from an application filed on August 30, 2001 as Application No. 09/942,901. I have been informed by counsel that Wollrab qualifies as prior art to the '418 patent based on Wollrab's filing date. *See also infra* §VIII.G.1 (additional discussion of Wollrab).

H. De-Vries (EX1013)

[0092] De-Vries is titled "Place specific buddy list services" and relates to "communications and messaging systems and services, and more particularly to such systems and services to facilitate communication based on location and inter-relationships of people." De-Vries, 1:5-8. According to the face of the document, De-Vries is a United States patent issued on November 22, 2005 as Patent No. 6,968,179 from an application filed on July 27, 2000 as Application No. 09/626,170. I have been informed by counsel that De-Vries qualifies as prior

art to the '418 patent based on De-Vries's filing date. *See also infra* §VIII.F.1 (additional discussion of De-Vries).

VIII. THE CHALLENGED CLAIMS ARE UNPATENTABLE IN LIGHT OF THE PRIOR ART IDENTIFIED IN THE PETITION

[0093] I have been asked to provide my opinion concerning whether claims 1-30 of the '418 patent are anticipated or would have been obvious to a POSA in light of the prior-art references discussed below. For the reasons explained below, it is my opinion that each of claims 1-30 is anticipated and/or would have been obvious to a POSA. The following table summarizes the Grounds I discuss in the sections below:

Ground Number and Reference(s)		Claims	Basis
1	Sheha (EX1005)	1-3, 6-7, 10, 13, 18-21, 24, 26-27, 30	Anticipation Obviousness
2	Sheha, Ryden (EX1009)	4-5, 11, 17, 22-23, 28-29	Obviousness
3	Sheha, Tanaka (EX1011)	8-9, 12, 14, 25	Obviousness
4	Sheha, Ganesh (EX1012)	15-17	Obviousness
5	Randall (EX1007)	1-3, 6-10, 13-14, 18-21, 24-27, 30	Anticipation Obviousness
6	Randall, De-Vries (EX1013)	12	Obviousness
7	Randall, Wollrab (EX1014)	3, 10, 15-17, 21, 27	Obviousness
8	Randall, Ryden	4-5, 11, 17, 22-23, 28-29	Obviousness
9	Randall, Ganesh	15-17	Obviousness

**A. Ground 1: Claims 1-3, 6-7, 10, 13, 18-21, 24, 26-27, and 30
Are Anticipated or Alternatively Obvious over Sheha**

[0094] As explained in this section below, in my opinion claims 1-3, 6-7, 10, 13, 18-21, 24, 26-27, and 30 of the '418 patent are unpatentable over Sheha.

1. Discussion of Sheha (EX1005)

[0095] Generally, Sheha teaches systems and methods to provide real-time location information (e.g., GPS co-ordinates, routing, maps) of a target user's device (e.g., landline, cell phone, PDA, etc.) to an authorized requesting user via conventional telecommunications systems (e.g., telephone network, mobile communications network, computer network, GPS, etc.). Sheha, Abstract, 1:35-45, 2:60-64, 10:66-11:9. Location information can be exchanged in response to a telephone call being made, but location information can also be shared without a call. Sheha, 11:55-58.

[0096] Sheha describes telephone devices – both landline and mobile devices, such as cellphones or PDAs – that share location information with other authorized landline and mobile devices to enable functionality such as mapping, routing, and direction finding. Sheha, 2:60-4:18, 10:66-11:9, 11:55-65. Sheha discloses that the mobile devices may determine their positions, such as by using an integrated GPS receiver or network-assisted position information, and may provide their positions to an online database and application server (“ODAS”) which stores the positions remotely. Sheha, 10:5-16, 10:66-11:51, 7:19-23.

[0097] Sheha further discloses that a first user (who I refer to as a “target user”) may authorize other users and groups of users to receive the location of the first user’s device. Sheha, 11:51-12:7. For example, the mobile devices may specify groups of authorized users to the ODAS identifying who may obtain their respective location information. Sheha, 11:51-12:1.

[0098] Sheha describes that the remote server (ODAS) periodically updates the requesting user with the target user’s device location information based on the target user’s associated privacy settings and what Sheha describes as authorization and authentication protocols. Sheha, 11:49-12:7. Sheha describes that the location information may include a map illustrating the location of one or both of the target and requesting users’ mobile devices, route information, driving directions, and heading information that may be displayed to the requesting user. Sheha, 9:23-39.

[0099] For example, using Sheha’s system, a mobile device may request the location of a target mobile device through a phone call (“call embodiment”) or “without having to initiate a telephone call” (“no-call embodiment”) by “only specifying a telephone number.” Sheha, 11:10-54, 11:55-58; *see also id.*, 12:1-7. If authorized, the requesting device receives the position from the ODAS, including displaying a map illustrating the location of one or both mobile devices and navigational information. Sheha, 9:23-39. Figure 3 (annotated

below) illustrates an exemplary mobile-to-mobile system, showing connections between two mobile devices 18b-18c, such as cell phones or PDAs, and the ODAS, via a wireless network 22. Sheha, 10:66-11:35, FIG. 3.

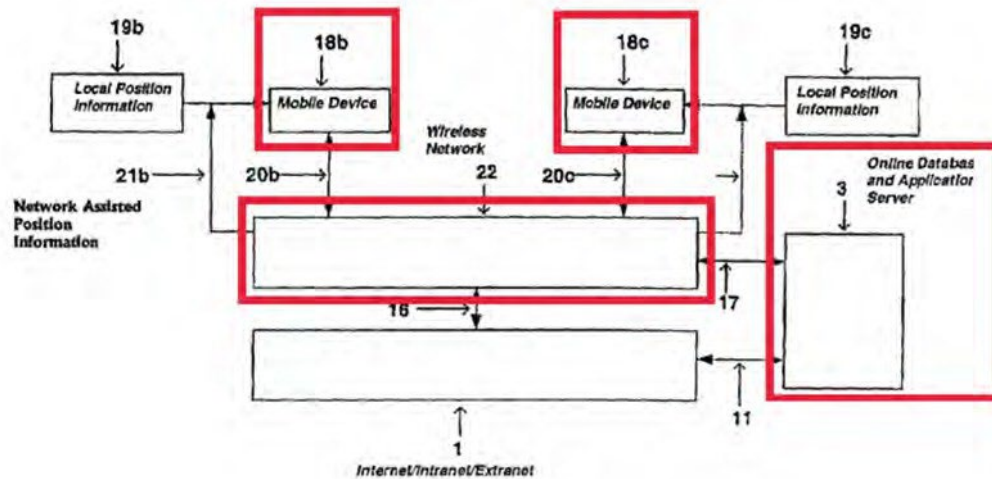


FIG. 3

Sheha, FIG. 3 (annotated)

2. Mapping of Sheha to Claims 1-3, 6-7, 10, 13, 18-21, 24, 26-27, and 30

[0100] As explained in this section below, in my opinion a POSA would have understood that Sheha meets or renders obvious all limitations of claims 1-3, 6-7, 10, 13, 18-21, 24, 26-27, and 30 of the '418 patent, and therefore renders those claims unpatentable.

a. Claim 1

[0101] As explained in this section below, in my opinion a POSA would have understood that Sheha meets or renders obvious all limitations of claim 1 of the '418 patent, and therefore renders claim 1 unpatentable.

i. Element [1PRE]: A system comprising:

[0102] Claim 1's preamble simply recites "A system comprising." I understand that the preamble is not necessarily limiting. In this case, whether or not it is limiting does not affect my opinion as Sheha discloses the preamble. Sheha discloses systems enabling users of telephone devices (landline or wireless) to provide access information, such as a username and password, to determine and share their own locations with other telephone devices, and to request the locations of other telephone devices. Sheha, Abstract, 8:40-50. As I will discuss below, it is my opinion that Sheha meets or renders obvious all the limitations of claim 1.

ii. Element [1A]: a first wireless device, wherein a location of said first wireless device is operable of being determined and provided to a remote system,

[0103] Sheha's system can "determine either or both of the local and remote devices' position information." Sheha, 4:13-18. In addition, Sheha describes that one mobile wireless device can request the location of another mobile wireless device via a wireless network. Sheha, 10:66-11:51; *see also* 11:55-12:7. A mobile-to-mobile configuration is illustrated in Figure 3 (annotated

below): both mobile devices 18b-18c wirelessly communicate (20b-20c) with the wireless network 22. Sheha, 10:66-11:35

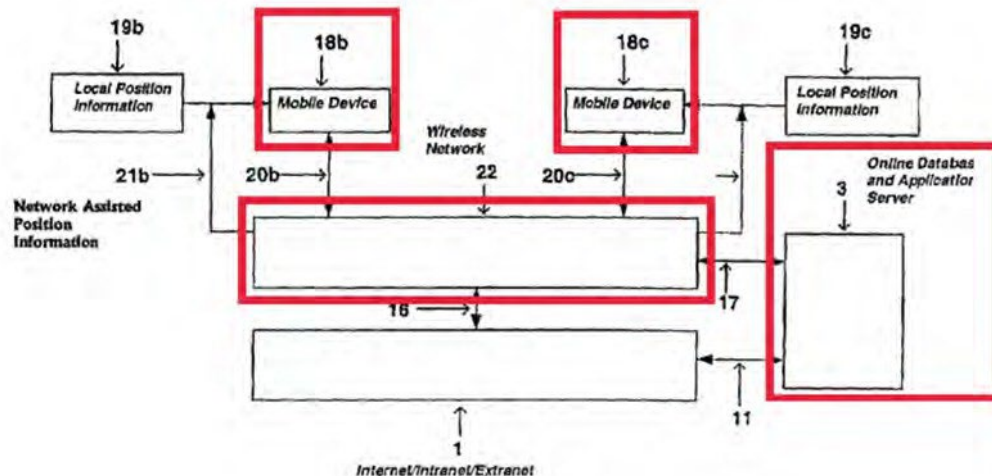


FIG. 3

Sheha, FIG. 3 (annotated)

[0104] The system shown includes two mobile devices, identified as mobile devices 18b and 18c, that communicate 20b, c with Sheha's Online Database and Application Server, or the "ODAS" 3, via a wireless network, labeled as wireless network 22. Sheha, 10:66-11:51. Sheha also teaches that the mobile devices shown in Figure 3 can be cellphones. Sheha, 10:66-11:3. Sheha further discloses that the cellphones themselves determine their own positions or their positions can be determined by the networks. Sheha, 10:5-16, 11:15-20. After a cellphone's position has been determined, the position is supplied to an ODAS 3 (server), where it is stored. Sheha, 11:3-8, 11:44-51, FIG. 3. As shown

in Figure 3 (annotated above), the ODAS 3 is remote from the mobile devices 18b, 18c. Sheha, 11:3-8, 11:44-51, Figure 3.

[0105] Thus, it is my opinion that Sheha meets Element [1A].

iii. **Element [1B]: said location of said first wireless device is operable of being requested by a second wireless device outside of a call for communication between said first wireless device and said second wireless device,**

[0106] Sheha describes a system that allows one wireless device to request the position of another wireless device “without having to initiate a telephone call.” Sheha, 11:55-58; *see also id.*, 4:59-5:3. For convenience, this can be referred to as the “no-call embodiment,” but as discussed below Sheha also describes features that are available to all embodiments within the context of discussing an example in a call embodiment. When a device user requests another device’s location, the ODAS obtains location information from the target mobile device (i.e., the “*first wireless device*”) and provides it to the requesting mobile device (i.e., the “*second wireless device*”). Sheha, 12:1-7, 12:42-44. Thus, the requesting mobile device does not have a “*call for communication*” with the identified, target mobile device, but instead sends the request to the ODAS. Sheha, 11:55-12:7.

[0107] Thus, it is my opinion that Sheha meets Element [1B].

iv. Element [1C]: a permission is operable of being provided by said first wireless device for said second wireless device to access location information about said location,

[0108] Sheha describes ways for a mobile device to provide permission to another mobile device to access its location. For example, the Sheha system can determine the target mobile device’s privacy settings—also called “*permission* settings” (Sheha, 5:3-20)—by which the device can specify “allowance of position information transfers...only with the device owner’s *permission*.” Sheha, 5:21-46, 4:59-66, 10:17-26. The target mobile device’s privacy/permissions settings information can include “a group database and authorization and authentication protocols” by which the target device’s user “can define a group of specific users that have access to” the target device’s location information. Sheha, 11:55-12-7, 4:59-5:20; *see also id.*, 13:65-14:2, 14:54-61, 19:9-13. The ODAS uses this privacy information to determine whether the target device has authorized the requesting device to obtain its location information. Sheha, 3:22-28, 5:21-46, 8:42-53; *see also id.*, 3:4-14, 4:8-18, 9:59-10:4.

[0109] The above description that privacy information in Sheha includes setting privacy information for a group of specific users in a mobile embodiment is further corroborated by Sheha’s claims. Sheha, 13:65-14:2, 14:54-61, 15:4-8, 16:19-23, 17:20-25, 18:18-21, 18:45-48, 19:9-13, 20:9-13. For example, claim 1 recites, among other limitations, “accessing caller privacy

information, said caller *privacy information* identifying a caller user *group* consisting of a plurality of group members pre-defined by said caller, each group member of the caller user group being a user of the telecommunication network.” Sheha, 13:65-14:2. Claims 11-12 claim an embodiment where the caller is on a wireless telephone. Sheha, 14:54-61. Those claims depend from claim 1, which recites that the caller specifies “privacy information” in the form of a pre-defined group of users. Thus, claims 11-12 further support my opinion that Sheha’s group-based permissions are a type of “privacy” information and apply in a mobile embodiment. Claim 47 recites, among other limitations, “accessing *privacy information* of the second user, said privacy information of the second user identifying an *authorized user group*, said authorized user group consisting a plurality of user group members pre-defined by the second user.” Sheha, 19:9-13. Sheha’s claims corroborate my opinion that a POSA would have understood that when Sheha refers to “privacy” Sheha is talking generally about ways to restrict how much of a user’s location information is accessible to other users. So when Sheha discusses “privacy settings” (as in 12:1-7), a POSA would understand those privacy settings can include the mobile device not letting anybody access its location (as in 13:65-14:2 and 5:39-41), and that the privacy settings can also include the mobile device user’s group settings, which identify which specific users have access to the device’s location and which users do not. In other words,

Sheha's group specifications are not unrelated to "privacy settings." Rather, Sheha's "privacy" information includes both the target device's local settings and the group designations of groups of authorized users. Thus, a POSA would understand that when Sheha talks about "privacy" information, Sheha is referring to a set of information that includes the group specifications discussed in Sheha, 11:55-12:7, as well as other types of "privacy settings" that Sheha discusses.

[0110] I have been informed by counsel that Mullen argued in a prior proceeding that Sheha's establishing group databases and utilizing protocols does not teach storing in a remote system a single permission provided by a first wireless device in response to a request from a second wireless device for location information. I understand that Mullen argued that the claimed "*permission*" must be one consent given by the first wireless device exclusively to the second wireless device. In my opinion, Mullen was incorrect. A POSA would not understand the claim to recite a temporal or causal relationship that requires the permission to be provided in response to a request from a second wireless device. In addition, Sheha at 5:21-41 **does** teach providing a permission in response to another wireless device's location request. A POSA would also understand that the claim does not limit the permission only to the second device, and instead encompasses a permission that allows other devices as well as the "*second wireless device*" to access the location information.

[0111] I have also been informed by counsel that Mullen argued in a prior proceeding that the claims require the “*permission*” to be exclusively “*for said second wireless device*” and that Sheha does not disclose one device user assigning rights exclusively to another device user. In my opinion, Mullen was incorrect because that is not what the claims recite. Element [1C] recites a permission “*for said second wireless device to access location information.*” That claim language does not limit what the permission is for accessing and does not exclude the permission from also allowing other devices “*to access location information.*” I have also been informed by counsel that Mullen cited various portions of the ’418 patent’s specification – 1:49-59, 1:66-2:2, 3:9-27, 4:60-5:2, 5:16-21, 7:3-12, 8:22-28, 9:10-15, 9:16-20, 11:64-12:2 – as alleged support for its argument that all instances of providing permissions in the ’418 patent consist of assigning rights to a specific user. I understand from counsel that it is improper to import limitations from a specification’s embodiment into claims that do not recite those limitations, even if the specification only describes a single embodiment. Moreover, the ’418 patent at 13:9-12 explicitly discloses that “a user may organize his/her user list into groups and ***assign access rights to that group*** (e.g., family member user group, close friend user group),” just as Sheha does. *See also* EX1001, 3:23-25 (“Users may be added, individually ***or in groups***, to a list of users with location access rights to a specific user by that specific user.”).

[0112] Alternatively, even if claim 1 required providing a permission specific to an individual second-device user, Sheha renders this obvious because POSAs would have known that “defin[ing] a group” of authorized users (Sheha, 11:63-65) can include defining a group having only one member, even if other defined groups have multiple members. For example, a “best friend” group may have just one person in it and that person might periodically change. In another example, an “emergency contact” group might function similarly. As another example, a person could have a group for friends or business associates at particular companies or in particular locations (e.g., different cities), some of which have only one person they know at a particular company or in a particular city. Similarly, a “plumber,” “electrician,” etc., group can have only one plumber, one electrician, etc., listed in the respective groups. In yet another example, a “children” group might function similarly if the user has only one child. An additional example can be a “Saturday meetup” group in which only one member may be included when the group is first created (and others may or may not be subsequently added). Further, the “Saturday meetup” example could be the group having multiple people in it but then everyone except one person drops out, leaving only one person in the group.

[0113] Alternatively, allowing a target device’s user to provide permissions specific to individuals in addition to groups would have been an

obvious variation because doing so was well-known as a beneficial option with reasonable expectation of success in a system like Sheha's. My testimony regarding the POSA's background knowledge in this regard is corroborated by evidence as discussed below:

[0114] For example, Randall (EX1007) describes "a user can also specify the remote database access rights given to different people or groups" (Randall, [0052]) and "can be associated with individual entities, and can also be associated with groups of entities." Randall, [0070]; *see also* [0136] ("Visible to specific people (or groups)"), [0144]-[0146] ("The user must be able to switch location information on for a person or group of people... Creating Buddy Lists[:]
Some users will be prepared to allow specific people access to more of their data than others. These specific people or groups of people with greater visibility are referred to as Buddies."). Randall therefore corroborates that it was within a POSA's background knowledge to specify access rights for individuals in addition to groups and that a POSA would have had a reasonable expectation of success doing so in a system like Sheha's where mobile device users are accessing each other's locations.

[0115] Friedman describes location-based instant messaging in which a user can specify a subset of users in a buddy list that can access the user's positional data. Friedman, 12:60-13:21. POSAs would have understood that a

subset of users can include a single user. Friedman corroborates that understanding by describing an example for assigning access rights for a single user: “User A may specify that ‘User B’ should only receive a measurement of the distance between User A and User B.” Friedman, 13:5-7. Friedman therefore also corroborates that it was within a POSA’s background knowledge to specify access rights for individuals in addition to groups and that a POSA would have had a reasonable expectation of success doing so in a system like Sheha’s.

[0116] I have been informed by counsel that Mullen argued in a prior proceeding that Sheha’s privacy settings are not permission but only privacy filters that a target mobile device has implemented for *all* incoming location requests and that the privacy settings are indiscriminate as to the identity of any requesting mobile device. I understand that Mullen did not make that argument about the permissions specified in Sheha’s “group database,” but instead argued that the group database is only in a different embodiment from the privacy settings and is not used in a mobile device embodiment or no-call embodiment, which Mullen treated as disparate embodiments. In my opinion, Mullen was incorrect. As I discussed above, Sheha does not describe the device-local privacy filters and requester-specific group database of permissions as features of mutually exclusive separate embodiments. Rather, they are complementary privacy/permission specification options that POSAs would have understood can all coexist together in

an embodiment, and that are variously (and interchangeably) referred to by Sheha as “privacy settings,” “permission settings,” “privacy configuration,” “position transfer permissions,” etc. Sheha, 4:35-42, 4:59-5:46 (discussing “privacy settings” interchangeably with “permission settings” as applicable to mobile or landline, call or no-call embodiments), 10:17-26, 10:44-11:9, 11:55-12:7 (describing the mobile no-call embodiment using “privacy settings” and the same “authorization and authentication protocols” as the landline no-call embodiment that “utiliz[es] a group database...to identify users that are *permitted* to access” position information). This is further corroborated by Sheha’s claims which recite “determining whether the first user is a member of the authorized user *group*” as part of “accessing *privacy* information” for the location of a “mobile telephone.” Sheha, 18:65-19:46. *See also* Sheha, 19:9-15, 19:44-45.

[0117] Sheha thus discloses that the mobile-to-mobile, no-call embodiment may employ both device-local privacy filters and a remote group database specifying which users are authorized for access. Sheha, 4:59-5:20, 11:55-12:7. When both are employed, POSAs would have understood that a requesting user is only given access to a target device’s location if the requesting user has permission in the target device’s group database and to the extent the target device’s local privacy settings allow location sharing. Sheha, 4:59-5:20, 11:55-12:7. Sheha thus discloses that the mobile-to-mobile, no-call embodiment

can use the same “privacy settings” and “authorization and authentication protocols...similarly to” the landline embodiments. Sheha, 12:4-7, 4:59-5:20. I understand from counsel that Mullen argued that that statement in Sheha is about authorization and authentication protocols and only indicates using a login and password. In my opinion, Mullen was incorrect. A POSA would have understood that “authentication” *uses* a login and password (e.g., to confirm that a user is who they allege to be), but “authorization” additionally involves more—e.g., determining whether the authenticated user is *authorized* to access the information being requested, such as in a permissions database. *See also* Sheha, 8:42-53 (“ODAS 3 us[es] authentication and authorization protocols” to “verify the level of authority each user is granted”).

[0118] Alternatively, even if Sheha did not explicitly disclose using the group database permissions in the mobile-to-mobile no-call embodiment, doing so would have been an obvious variation to a POSA because allowing a mobile user to specify a group of other mobile users who have permission to access the user’s location (or to provide access permission on an individual-user basis) without initiating a phone call was well-known as a beneficial option with reasonable expectation of success in a system like Sheha’s. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed below.

[0119] For example, Sandhu (EX1016) describes “[a] method and system whereby two mobile units can locate each other.” Sandhu, Abstract. A user who registers with Sandhu’s system “can access the location of all other users who are registered with the system.” Sandhu, [0024]. A user can also “limit the data exchange to a sub-group of users, such as friends, coworkers, and family” by “defining a distribution group in the user profile.” Sandhu, [0024]. Sandhu therefore corroborates that it was within a POSA’s background knowledge to use a group database in a mobile-to-mobile embodiment and that a POSA would have had a reasonable expectation of success doing so in a system like Sheha’s.

[0120] Sandhu also discloses sending an “announcement to all the users in the distribution group,” where the “announcement[] sent can contain a location stamp indicating the current location of the sender.” Sandhu, [0031]. Transmitting Sandhu’s announcements does not require initiating a phone call with any of the intended recipients. Thus, Sandhu also corroborates that it was within a POSA’s background knowledge to exchange location information between mobile devices without initiating a phone call and that a POSA would have had a reasonable expectation of success doing so in in a system like Sheha’s.

[0121] By way of another example, Randall (EX1007) describes a user of a mobile device that can track the location of other mobile devices. Randall, Table 4, p. 24 (“People tracking” application, “New buddy finder” application,

“Old buddy finder” application). Randall’s system allows a user to assign access rights to individuals or groups. Randall, [0070] (“Access rights can be associated with individual entities, and can also be associated with groups of entities.”). Randall describes using a database for storage of such access rights. Randall, [0052] (“In ADS, a user can also specify the remote database access rights given to different people or groups: an arbitrary group of entities may be stored as an attribute which gives access permissions to data in the database.”); *see also* Randall, [0136], [0144]-[0148]. Further, Randall describes that users sharing their location can occur outside of a phone call. Randall, Table 4, p. 24 (“People tracking” application in which a user tracks the location of a user by polling a server). Randall therefore also corroborates that it was within a POSA’s background knowledge to use a group database in a mobile embodiment and to exchange location information between mobile devices without initiating a phone call and that a POSA would have had a reasonable expectation of success doing so in a system like Sheha’s.

[0122] Thus, it is my opinion that in Sheha, a mobile device can provide permission for a requesting device to access its location or it would have been obvious for the reasons discussed above, meeting [1C].

- v. **Element [1D]: said permission is operable of being stored in said remote system, wherein said remote system is located remotely from said first and second wireless devices,**

[0123] Sheha discloses one device requesting position information of a target device without initiating a call to the target device and maintaining privacy settings at the system or at the wireless device. Sheha describes this in the context of a landline-to-landline position request; however, it does not restrict the use of such a group database to the landline-to-landline scenario. To the contrary, Sheha discloses that the same approach can be used in a mobile-to-mobile scenario. Sheha, 12:4-7. Sheha describes that position information correlating position to a telephone number can be stored in a group database remote from the wireless devices, which further can establish which users may access such information. Sheha, 11:55-12:7. For example, as I discussed above (§VIII.A.2.a.iv, [1C]), Sheha describes that in both landline and mobile no-call embodiments, “users can define a group of specific users that have access to” the user’s location information “by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information.” Sheha, 11:55-12:7.

[0124] Sheha teaches embodiments where the ODAS (remote system) implements the “authorization and authentication protocols” and the “group database” described in 11:63-12:7 for storing permissions for specific users. *See* Sheha, 3:4-14 (“networked server system utilizing authentication and authorization

procedures”), 4:8-18 (“online database and/or networked authentication and authorization connection server”), 7:22-23 (“online *database* and application server (ODAS)”), 8:42-53 (“ODAS 3 us[es] authentication and authorization protocols” to “verify the level of authority each user is granted”), 9:61-10:4.

[0125] Alternatively, implementing the group database and its utilization at the server would have been an obvious variation to a POSA because doing so was well-known as a beneficial option with reasonable expectation of success in a system like Sheha’s. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed below.

[0126] Randall (EX1007) describes interactions between mobile devices and a database at a server. Randall, [0029]-[0030] (“An application resident on the device queries and receives data from the remote, extensible database.”). Randall also describes that a database hosted by a server can be used for determining whether a requesting user has access rights. Randall, [0046] (“internet servers hosting extensible databases”), [0047] (“[t]he database can define which entities can read different fields; Alice can therefore give Bob rights to read only certain fields in her database.”), [0052] (“[t]he ADS system includes additional access control mechanisms, such as checking the identity of the calling device at the server”). Randall discloses that the “ADS System [] includes an entire contacts database, referred to as a ‘Universe,’” which “is the list of all the

entities known to an entity and to whom access to more private data is to be given.” Randall, [0511]. For example, if Alice has an i-Group “business 1,” “someone in the business 1 group might see the Table 3 information in their contacts application,” which shows information about Alice that is available to contacts in “business 1.” Randall, [0512]-[0513]. “The user interface” of a wireless device will include some way to indicate “the freshness of the data (whether it has recently been updated from the i-Server).” Randall, [0514]. A POSA would understand that other users would have their own group database designated in their own “Universe” that is utilized from Randall’s i-Server. Randall therefore corroborates that it was within a POSA’s background knowledge to implement a group database and utilize it at a sever and that a POSA would have had a reasonable expectation of success doing so in a system like Sheha’s.

[0127] Friedman (EX1015) describes a server monitoring a location of a user. Friedman, 12:60-65. Friedman also describes that a user can store their access right preferences on the server. Friedman, 13:10-21 (“User A’s preferences with respect to location tracking may be stored in User A’s configuration profile 1012 on the portal server 110...”). Friedman therefore also corroborates that it was within a POSA’s background knowledge to implement a group database and utilize it at a sever and that a POSA would have had a reasonable expectation of success doing so in a system like Sheha’s.

[0128] Sandhu (EX1016) describes a user setting up a user profile in a service provider (Sandhu, [0023], [0026]), to limit location data access to a sub-group of users by “defining a distribution group in the user profile.” Sandhu, [0024], *see also* [0025]. Sandhu describes that the “[s]ervice provider 8 may be a computer or a server linked to data network 4”. Sandhu, [0027]; Sandhu, [0028]-[0029] (“user profile database” may be stored in various formats). Sandhu therefore also corroborates that it was within a POSA’s background knowledge to implement a group database and utilize it at a sever and that a POSA would have had a reasonable expectation of success doing so in a system like Sheha’s.

[0129] Also, with respect to any privacy settings set locally at the target device, POSAs would have understood that an obvious implementation was for the remote system to store those settings after verifying them by querying the device (Sheha, 4:64-66), so the remote system can then apply them to determine whether to release the device’s location to a requesting user. POSAs would have known that doing so would allow the remote system to beneficially apply the privacy setting without having to query the device each time a location query was received, which would needlessly consume network and device resources, including negatively impacting device battery life.

[0130] Thus, it is my opinion that Sheha meets Element [1D], or at minimum renders it obvious.

- vi. Element [1E]: said location information about said location is operable of being provided from said remote system to said second wireless device in accordance with said permission outside of said call,**

[0131] As I discussed above with respect to Element [1B]

(§VIII.A.2.a.iii), a mobile device can request the location of another mobile device outside of a call. In response to that request (“[w]hen a mobile device’s position information is requested”), “the system, based on privacy settings, responds with the appropriate position information to the requesting user's device.” Sheha, 12:1-7. Sheha discloses this within the context of a request for a position of a mobile device that can occur “without having to initiate a telephone call.” Sheha, 11:55-12:8. As I discussed above with respect to Element [1D] (§VIII.A.2.a.v), the privacy settings can be maintained by the remote system, e.g., the ODAS, or the mobile device can identify specific users permitted to access the position information. Thus, the remote system provides the position information “*in accordance with said permission*” that may be stored at the ODAS.

[0132] Thus, it is my opinion that Sheha meets Element [1E].

- vii. Element [1F]: wherein said first wireless device is operable of providing a first map provided with respect to said location.**

[0133] Sheha’s system can transfer location information from one wireless device to another wireless device in the form of a map. Sheha, 3:50-55, 4:22-26, 4:47-58. Sheha (at 11:55-12:7) discusses the no-call embodiment and

then immediately discusses (at 12:8-31) delivering position information in the form of a map. A POSA would thus understand that Sheha is disclosing that the no-call embodiment can deliver the position information in the form of a map, just like as in any of the embodiments that involve a phone call and delivering the position information in the form of a map.

[0134] Further, Sheha discloses that its devices have displays and can provide maps showing the locations of the target wireless device and the requesting wireless device. Sheha, 9:23-39, FIG. 5 (below with annotations added to labels 33 and 34).

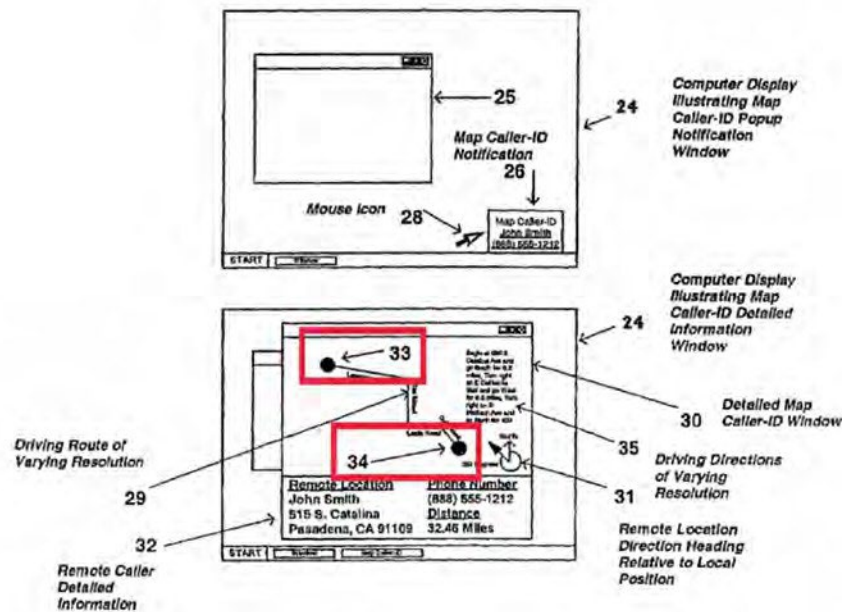


FIG. 5

Sheha, FIG. 5 (annotated)

[0135] Sheha specifically discloses that such “a *map*...can be displayed on the mobile telephone.” Sheha, 4:43-58. While I understand that Sheha’s Figure 5 and 4:43-58 are presented in the context of a landline-to-mobile example, a POSA would have understood that they also equally apply in the mobile-to-mobile context. Sheha, 4:13-18, 4:52-58. That disclosure equally applies in the mobile-to-mobile context because Sheha explains it is “similar to a landline-to-mobile application.” Sheha, 4:59-5:11, 4:13-18; *see also id.*, 4:52-58, 11:36-12:7. In addition, Sheha also discloses that both the requesting and the target mobile device can display maps with respect to the positions of both device and showing the locations of both devices. Sheha, 4:52-58, 11:10-51. *See also* Sheha, 11:42-44 (“both the originating and destination mobile device receive the Map”).

[0136] I have been informed by counsel that Mullen argued in a prior proceeding that Sheha’s “map” displayed on the mobile telephone at 4:52-58 is somehow not a graphical map like Sheha’s FIG. 5 and cannot be received without a phone call. In my opinion, Mullen was incorrect. A POSA would have understood that Sheha’s FIG. 5 is the only type of “map and address” (Sheha, 4:52-58) display illustrated in Sheha, and nothing in Sheha suggests that the “map” discussed at 4:52-58 would be anything other than a graphical map. Indeed, Sheha expressly states that a “map...*can be displayed* on the mobile telephone.” Sheha,

4:52-58. And Sheha teaches that the no-call embodiment only differs from the phone-call embodiment in how the device “request[s] position information” (Sheha, 11:55-12:7), not in how that information is displayed in the two embodiments.

[0137] I have been informed by counsel that Mullen also argued in a prior proceeding that Sheha’s mobile devices can only pass maps to an accompanying device for display. In my opinion, Mullen was incorrect. While Sheha (at 12:8-41) explains that *some* embodiments use an “accompanying device” that “is better suited for navigational displays and computations” than a “typical mobile navigational device” which may be “not optimal for navigational purposes,” *other* embodiments in Sheha can still display the “map...on the mobile telephone” as discussed at 4:52-58 of Sheha.

[0138] Alternatively, even if Sheha did not itself expressly acknowledge it, implementing Sheha to display a map on either or both of the requesting and target wireless devices, without a telephone call, to display a location of the target wireless device would have been an obvious variation in view of POSAs’ background knowledge of the convenient option and reasonable expectation of success in doing so in a system like Sheha’s. For example, compared to a textual description of a location, displaying a location marker would typically consume less screen real estate, which was a finite resource on some

mobile devices, thus motivating POSAs to display a location marker. My testimony regarding POSAs' background knowledge in this regard is corroborated by several references, as discussed below.

[0139] Randall (EX1007) describes an application for mobile devices (e.g., "radio telephones, smart phones," Randall, [0002]) in which a user's friends or parents can track the user by "add[ing] a 'map' application to their own devices, which could show their position on digital maps and also, by using the location attribute of the user's data object, it could also show the position of the user." Randall, [0021], p. 85.

[0140] Sandhu (EX1016) concerns mobile units (e.g., PDAs, wireless phones, mobile units, Sandhu, Abstract) and describes "provid[ing] user 14-i [using mobile unit 10-i] with a map showing the location of user 14-2 relative to the location of user 14-i." Sandhu, [0027].

[0141] Wollrab (EX1014) describes "translat[ing] remote sensing location coordinates into a graphic map image, e.g. a .jpg or .gif file, depicting the relative locations of all members/PDA devices within a family." Wollrab, 3:28-31. For example, mobile devices like "PDA device 14-1 through 14-5 can display a map image via display device 15-5 through 15-5 depicting the relative locations of all members/PDA devices within a family. Wollrab, 4:43-58. The maps and

location markers for different users displayed on a PDA device are illustrated, for example, in Wollrab's FIG. 4B. *See also* Wollrab, FIGs. 1-4C.

[0142] Grube (EX1017) describes displaying, on mobile devices (Grube, 4:38-57, 5:13-17), maps of tracked vehicles, and the maps displaying icons to represent the current locations of the tracked vehicles. Grube, 6:59-7:6, *see also* 6:14-27. Grube's FIG. 2, for example, "shown an example map display that may be provided to a user of a communication unit" that shows the "the current location of" vehicles "by respective vehicle icons." Grube, 6:59-65.

[0143] Meadows (EX1018) describes "monitoring the geographical location of a subscriber's mobile cellular telephone, and for providing the location information to an authorized user through the world wide web." Meadows, 2:2-7. The authorized user can access the location information through various media including a "wireless handheld device 20b." Meadows, 3:59-67. Meadows describes the location information can be displayed on a map. Meadows, 5:48-57, FIG. 4B.

[0144] Thus, the above references corroborate my opinion that displaying a map on the requesting wireless device with a marker representative of the location of the target wireless device was within a POSAs' background knowledge and that a POSA's reasonable expectation of success in doing so in Sheha.

[0145] Thus, it is my opinion that Sheha meets Element [1F], or at minimum renders it obvious.

b. Claim 2: The system of claim 1, wherein said first and second wireless devices are wireless telephones.

[0146] Sheha discloses that the two mobile devices that I discussed above with respect to claim 1 are both *wireless telephones*: “In the mobile-to-mobile example, as illustrated in FIG. 3, a user placing a telephone call from a mobile device 18b, such as a cellular telephone or wireless voice-enabled PDA, dials or inputs a telephone number of another mobile device 18c.” Sheha, 10:66-11:3 (“mobile device 18b, such as a cellphone or wireless voice-enabled PDA” and “another mobile device 18c”); *see also* Sheha, 4:59-66, 11:55-12:7. An annotated version of Figure 3 is reproduced below for reference, which shows two Mobile Devices (18b-18c).

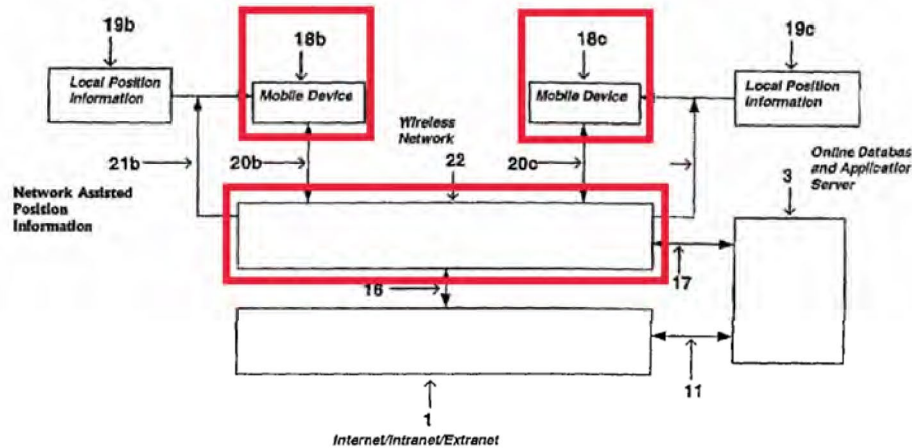


FIG. 3

Sheha, FIG. 3 (annotated)

[0147] As shown above, both mobile devices 18b, 18c communicate using wireless network 22, and thus both are wireless devices. Sheha, 10:66-11:3. Sheha states that mobile device 18b can be a cellular telephone (Sheha, 10:67-11:1), while mobile device 18c is disclosed to have a telephone number (Sheha, 11:1-3), indicating that it is also a cellular telephone. Because both mobile devices 18b, 18c are wireless devices and cellular telephones, a POSA understands mobile devices 18b, 18c are wireless telephones.

[0148] Thus, it is my opinion that Sheha meets claim 2.

- c. **Claim 3: The system of claim 1, wherein said second wireless device displays a map with a location marker associated with said location.**

[0149] I discussed above with respect to Element [1F] (§VIII.A.2.a.vii) that Sheha discloses (and renders obvious) that its mobile devices can display maps, which include location markers associated with the location as shown in Figure 5. Specifically, the requesting device can display a map with location markers associated with the locations of both the target and the requesting device, which are shown as markers 33 and 34 in FIG. 5 (annotated below). Sheha, 4:52-58, FIG. 5, 6:51-56, 7:35-38 (“Map Caller-ID includes...map information at varying resolutions”), 7:44-48, 9:23-39 (“[T]his new information window 30 is a detailed Map Caller-ID information window of varying resolution displaying the originating position information, such as a map location 33 of the caller, and the user’s location position information, such as a map location 34 of the destination telephone number.”), 11:36-44.

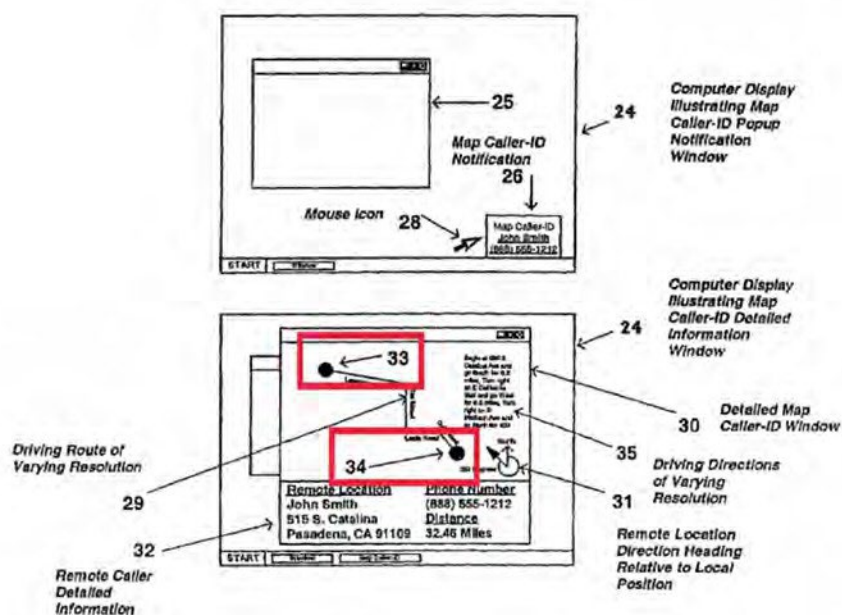


FIG. 5

Sheha, FIG. 5 (annotated)

[0150] I have been informed by counsel that Mullen argued in a prior proceeding that that only Sheha's target telephone (or its peripheral device) displays a map, not the requesting telephone. In my opinion, Mullen was incorrect. Sheha teaches that both the target device and the requesting device can display maps with location markers associated with both devices' locations, as in FIG. 5. Sheha, 4:52-58, 11:10-51. Sheha at 11:42-44 discloses that "**both** the originating and destination mobile device *receive the Map Caller-ID.*"

[0151] Additionally, displaying a map on the requesting device with a location marker of the target device's location would have been an obvious

variation in view of POSAs' background knowledge of that convenient option and a POSA's reasonable expectation of success in doing so. For example, compared to a textual description of a location, displaying a location marker would typically consume less screen real estate, which was a finite resource on some mobile devices, thus motivating POSAs to display a location marker. My testimony regarding POSAs' background knowledge in this regard is corroborated by several references, as discussed in the paragraphs below.

[0152] Randall (EX1007) describes an application for mobile devices (e.g., "radio telephones, smart phones," Randall, [0002]) in which a user's friends or parents can track the user by "add[ing] a 'map' application to their own devices, which could show their position on digital maps and also, by using the location attribute of the user's data object, it could also show the position of the user." Randall, [0021].

[0153] Sandhu (EX1016) concerns mobile units (e.g., PDAs, wireless phones, mobile units, Sandhu, Abstract) and describes "provid[ing] user 14-i [using mobile unit 10-i] with a map showing the location of user 14-2 relative to the location of user 14-i." Sandhu, [0027].

[0154] Wollrab (EX1014) describes "translat[ing] remote sensing location coordinates into a graphic map image, e.g. a .jpg or .gif file, depicting the relative locations of all members/PDA devices within a family." Wollrab, 3:28-31.

For example, mobile devices like “PDA device 14-1 through 14-5 can display a map image via display device 15-5 through 15-5 depicting the relative locations of all members/PDA devices within a family. Wollrab, 4:43-58. The maps and location markers for different users displayed on a PDA device are illustrated, for example, in Wollrab’s FIG. 4B. *See also* Wollrab, FIGs. 1-4C.

[0155] Grube (EX1017) describes displaying, on mobile devices (Grube, 4:38-57, 5:13-17), maps of tracked vehicles, and the maps displaying icons to represent the current locations of the tracked vehicles. Grube, 6:59-7:6, *see also* 6:14-27. Grube’s FIG. 2, for example, “shown an example map display that may be provided to a user of a communication unit” that shows the “the current location of” vehicles “by respective vehicle icons.” Grube, 6:59-65.

[0156] Meadows (EX1018) describes “monitoring the geographical location of a subscriber’s mobile cellular telephone, and for providing the location information to an authorized user through the world wide web.” Meadows, 2:2-7. The authorized user can access the location information through various media including a “wireless handheld device 20b.” Meadows, 3:59-67. Meadows describes the location information can be displayed on a map. Meadows, 5:48-57, FIG. 4B.

[0157] Thus, the above references corroborate my opinion that displaying a map on the requesting wireless device with a marker representative of

the location of the target wireless device was within a POSAs' background knowledge and that a POSA's reasonable expectation of success in doing so in Sheha.

[0158] Thus, it is my opinion that Sheha meets claim 3, or at minimum renders it obvious.

- d. **Claim 6: The system of claim 1, wherein said permission is operable of being removed, by said first wireless device, for said second wireless device to obtain said location.**

[0159] As I discussed above with respect to Element [1C] (§VIII.A.2.a.iv), Sheha discloses that a target device may establish a permission for a requesting device to obtain its position. Sheha also discloses that the permission may be terminated at any time by the target device. Sheha, 5:11-14 (“...the position transfer **can be terminated** by the calling or receiving device at anytime”); *see also id.*, 5:34-38. Thus, it is my opinion that Sheha meets claim 6.

- e. **Claim 7: The system of claim 1, wherein said location is determined by a positioning system that receives signals from a plurality of positioning satellites, said location is updated by said positioning system, and said updated location is provided to said remote system.**¹⁴

[0160] Sheha discloses that its mobile devices' locations are "typically calculated by the mobile device 18a by using an onboard positioning information device 19a that is connected to the mobile device," such as from a GPS receiver. Sheha, 10:5-16. It was not necessary for Sheha to explain to POSAs that a GPS receiver receives signals from multiple GPS satellites to determine a location, because that was well known in POSAs' background knowledge. The nature of a GPS receiver's operation—and indeed the operational *requirement* that multiple satellites be "seen" in order to compute a GPS-based location—was well-known at the time Sheha was filed, as the '418 patent itself acknowledges was background knowledge of a POSA. EX1001, 1:21-31 (discussing background knowledge that GPS uses signals from multiple satellites to determine a location).

[0161] In addition, Sheha discloses that mobile devices may obtain updated positions and provide the updated positions to the remote server. Sheha, 11:10-51 (mobile devices "continually send their updated position information to

¹⁴ Claim 7 as originally issued referred to a "facility" rather than the "remote system," but was changed to "remote system" in a certificate of correction. EX1001, p. 29.

the ODAS 3”). Claim 7 does not require that updated positions be provided outside of a call. However, as discussed above, Sheha discloses that location may be requested and provided outside of a call. Sheha, 11:55-58. Sheha discloses that a then-current position is provided in response to each request. Sheha, 5:21-46, 12:1-7. Therefore, the mobile device’s location is updated using its positioning system and provided to the remote server.

[0162] Thus, it is my opinion that Sheha meets claim 7.

- f. **Claim 10: The system of claim 1, wherein a second location is associated with said second wireless device and said location of said first wireless device is displayed relative to said second location of said second wireless device.**

[0163] As I discussed above with respect to Element [1F] (§VIII.A.2.a.vii), Sheha discloses that its wireless devices can display maps that show the location of both the requesting and target devices. Sheha, Fig. 5 (labels 33 and 34). While Figure 5 is described as showing location information from the perspective of the device being called by another device, it is my opinion that POSAs would have understood that either or both of the requesting and/or target device can provide and display such a map since each is already capable of displaying a map. Sheha, 4:52-58; *see also* Sheha, 4:22-26; 5:47-63; 7:35-39, 9:23-39. *See also supra* §VIII.A.2.c (Claim 3: discussing show Sheha meets a “second wireless device displays a map”).

[0164] Thus, it is my opinion that Sheha meets claim 10.

g. Claim 13: The system of claim 1, wherein said permission is assigned for a period of time.

[0165] Sheha explicitly discloses that assigning permissions (e.g., to access a user's location information) may be established for *a period of time*.

Sheha, 3:4-13, 5:9-20 ("position transfer permissions" can be enabled "for any *period of time*"), 10:17-26, 10:60-65. Thus, it is my opinion that Sheha meets claim 13.

h. Claim 18

[0166] As explained in this section below, in my opinion a POSA would have understood that Sheha meets all limitations of claim 18 of the '418 patent, and therefore renders claim 18 unpatentable. Claim elements [18B], [18C], [18E], [18G], [18H], and [18J] repeat limitations of other elements of claim 18, but with the perspective of the "*second wireless device*" replacing that of the "*first wireless device*" and vice-versa. Thus, claim 18 adds that, like the *first wireless device*, the *second wireless device* has a location operable of being determined, provided to a server, requested by and provided to the *first wireless device* as a result of a permission provided by the *second wireless device* and stored on the server. Sheha meets these Elements for the reasons explained below. A POSA would have understood that in the mobile-to-mobile embodiment, any functionality that Sheha discloses and/or renders obvious for performance by one wireless

device (e.g., 18b) can equally be performed by the other wireless device (e.g., 18c). *See, e.g.,* Sheha, 11:10-12 (“all position information is allowed to be transferred for all scenarios on each mobile device 18b and 18c”), 11:44-51 (both mobile devices send position information to the ODAS, which periodically updates each mobile device with the other’s information).

i. Element [18PRE]: A system comprising:

[0167] Claim 18’s preamble simply recites “A system comprising.” I understand that the preamble is not necessarily limiting. In this case, whether or not it is limiting does not affect my opinion as Sheha discloses the preamble. Sheha discloses systems to allow a user to provide access information, such as a username and password, to obtain location information for other user’s mobile devices. Thus, Sheha meets [18PRE] for the same reasons I discussed regarding [1PRE]. *See supra* §VIII.A.2.a.i ([1PRE]).

ii. Element [18A]: a first wireless device, wherein a first location of said first wireless device is operable of being determined

[0168] Both Elements [1A] and [18A] involve a “*first wireless device* wherein a “*location of said first wireless device is operable of being determined.*” Thus, it is my opinion that Sheha meets Element [18A] for the same reasons Sheha meets Element [1A], as discussed above (§VIII.A.2.a.ii).

iii. Element [18B]: a second location of a second wireless device is operable of being determined

[0169] As I discussed above for claim 10 (§VIII.A.2.f), Sheha meets “*a second location is associated with said second wireless device*” and thus that location “*is operable of being determined.*” Thus, it is my opinion that Sheha meets Element [18B] for the same reasons Sheha meets claim 10.

iv. Element [18C]: said first and second locations are operable of being provided to a server, wherein said server is located remotely from said first and second wireless devices,

[0170] As I discussed above for Element [1A] (§VIII.A.2.a.ii), Sheha meets the location of the first wireless device (“*first...location[J]*”) is “*provided to a remote system,*” which is Sheha’s ODAS (“online database and application *server,*” Sheha, 7:21-22). The location of the second wireless device is provided to Sheha’s ODAS for the same reason. *See* Sheha, 11:3-8, 11:44-51 (both mobile devices send position information to the ODAS and the ODAS, which periodically updates each mobile device with the other’s information), FIG. 3. Indeed, a POSA would have understood that in the mobile-to-mobile embodiment, any of the functionality that Sheha discloses and/or renders obvious for performance by one wireless device (e.g., mobile device 18b in FIG. 3) can equally be performed by the other wireless device (e.g., mobile device 18c in FIG. 3). *See also* Sheha, 11:10-12 (“all position information is allowed to be transferred for all scenarios on each mobile device 18b and 18c”). As I discussed above for Element [1D]

(§VIII.A.2.a.v), Sheha’s ODAS (*server*) is “*located remotely from said first and second wireless devices.*”

[0171] Thus, it is my opinion that Sheha meets Element [18C] for the same reasons Sheha meets Element [1A] (*supra* § VIII.A.2.a.ii) and Element [1D] (*supra* § VIII.A.2.a.v).

- v. **Element [18D]: said first location is operable of being requested by said second wireless device outside of a call for communication between said first wireless device and said second wireless device,**

[0172] Element [18D] recites similar limitations as Element [1B], but refers to “*said first location*” rather than “*location of said first wireless device.*” Thus, it is my opinion that Sheha meets Element [18D] for the same reasons as Element [1B] (*supra* § VIII.A.2.a.iii).

- vi. **Element [18E]: said second location is operable of being requested by said first wireless device**

[0173] Element [18E] is similar to Element [18D] except Element [18E] is about the “*second location*” “*being requested by said **first** wireless device*” whereas Element [18D] is about the “*first location*” “*being requested by said **second** wireless device.*” In other words, Element [18E] is from the perspective of the “*second wireless device*” replacing that of the “*first wireless device.*” As I discussed above ([18C], §VIII.A.2.h.iv), a POSA would have understood that in the mobile-to-mobile embodiment, any of the functionality that

Sheha discloses and/or renders obvious for performance by one wireless device (e.g., mobile device 18b in FIG. 3) can equally be performed by the other wireless device (e.g., mobile device 18c in FIG. 3). *See also* Sheha, 11:10-12 (“all position information is allowed to be transferred for all scenarios on each mobile device 18b and 18c”). Thus, it is my opinion that Sheha meets Element [18E] for the same reasons as Element [18D] (*supra* § VIII.A.2.h.v), applied to the “*second location*” and “*first wireless device.*”

vii. Element [18F]: a first permission is operable of being provided by said first wireless device for said second wireless device to obtain said first location

[0174] While Element [1C] recites “*a permission*” “*to access location information about said location,*” Element [18F] recites “*a first permission*” “*to obtain said first location.*” Thus, it is my opinion that Sheha meets Element [18F] for the same reasons as Element [1C] (*supra* § VIII.A.2.a.iv).

viii. Element [18G]: a second permission is operable of being provided by said second wireless device for said first wireless device to obtain said second location

[0175] Element [18G] is similar to Element [18F] except Element [18G] is about “*a second permission*” “*provided by said second wireless device*” for the “*first wireless device to obtain said second location*” whereas Element [18F] is about the “*first permission*” “*to obtain said first location.*” In other words, Element [18G] is from the perspective of the “second wireless device”

replacing that of the “first wireless device” and vice-versa. As I discussed above ([18C], §VIII.A.2.h.iv), a POSA would have understood that in the mobile-to-mobile embodiment, any of the functionality that Sheha discloses and/or renders obvious for performance by one wireless device (e.g., mobile device 18b in FIG. 3) can equally be performed by the other wireless device (e.g., mobile device 18c in FIG. 3). *See also* Sheha, 11:10-12 (“all position information is allowed to be transferred for all scenarios on each mobile device 18b and 18c”). Thus, it is my opinion that Sheha meets Element [18G] for the same reasons as Element [18F] (*supra* §VIII.A.2.h.vii), applied to a “*second permission*” and “*said second location*.”

ix. Element [18H]: said first and second permissions are operable of being stored on said server,

[0176] While Element [1D] refers only to Element [1C]’s “*permission*” is “*operable of being stored on said server*,” Element [18H] recites the “*first and second permissions are operable of being stored on said server*.” As I discussed above for Element [18E] (§VIII.A.2.h.vi), a POSA would have understood that in Sheha’s mobile-to-mobile embodiment, any of the functionality that Sheha discloses and/or renders obvious for performance by one wireless device (e.g., mobile device 18b in FIG. 3) can equally be performed by the other wireless device (e.g., mobile device 18c in FIG. 3). *See also* Sheha, 11:10-12 (“all position information is allowed to be transferred for all scenarios on each mobile device

18b and 18c”). Thus, it is my opinion that Sheha meets Element [18H] for the same reasons as Element [1D] (*supra* §VIII.A.2.a.v), applied to both “*first and second permissions.*”

- x. **Element [18I]: said first location from said server is operable of being provided to said second wireless device as a result of said first permission outside of said call,**

[0177] While Element [1E] recites “*said location information about said location is operable of being provided from said remote system to said second wireless device **in accordance with** said permission outside of said call,*” Element [18I] similarly recites “*said first location from said server is operable of being provided to said second wireless device **as a result of** said first permission outside of said call.*” Thus, it is my opinion that Sheha meets Element [18I] for the same reasons as Element [1E] (*supra* §VIII.A.2.a.vi).

- xi. **Element [18J]: and said second location is operable of being provided from said server to said first wireless device as a result of said second permission,**

[0178] Element [18J] is similar to Element [18I] except Element [18J] is about “***second** location*” “*provided... to said **first** wireless device as a result of said **second** permission*” whereas Element [18I] is about “***first** location*” “*provided... to said **second** wireless device as a result of said **first** permission.*” In other words, Element [18J] is from the perspective of the “second wireless device” replacing that of the “first wireless device” and vice-versa. As I discussed above

([18C], §VIII.A.2.h.iv), a POSA would have understood that in the mobile-to-mobile embodiment, any of the functionality that Sheha discloses and/or renders obvious for performance by one wireless device (e.g., mobile device 18b in FIG. 3) can equally be performed by the other wireless device (e.g., mobile device 18c in FIG. 3). *See also* Sheha, 11:10-12 (“all position information is allowed to be transferred for all scenarios on each mobile device 18b and 18c”). Thus, it is my opinion that Sheha meets Element [18J] for the same reasons as Element [18I] (*supra* §VIII.A.2.h.x), applied to the “*second location*” and “*second permission*.”

xii. Element [18K]: wherein said first wireless device is operable of providing a first map from a perspective of said first wireless device.

[0179] While Element [1F] recites “*said first wireless device is operable of providing a first map provided **with respect to said location***” (which is the “*location of said first wireless device*,” *see* Element [1A]), Element [18K] recites the map is “***from a perspective of said first wireless device***.” Thus, it is my opinion that Sheha meets Element [18K] for the same reason Shema meets Element [1F] (*supra* §VIII.A.2.a.vii).

i. Claim 19

[0180] As explained in this section below, in my opinion a POSA would have understood that Sheha meets all limitations of claim 19 of the ’418 patent, and therefore renders claim 19 unpatentable.

i. Element [19PRE]: A system comprising:

[0181] Claim 19’s preamble simply recites “A system comprising”. I understand that the preamble is not necessarily limiting. In this case, whether or not it is limiting does not affect my opinion as Sheha discloses the preamble. Sheha discloses systems to allow a user to provide access information, such as a username and password, to obtain location information for other user’s mobile devices. Thus, Sheha meets [19PRE] for the same reasons I discussed regarding [1PRE] (*supra* §VIII.A.2.a.i).

ii. Element [19A]: a first wireless device operable of determining a first location of said first wireless device

[0182] Element [19A] is similar to Element [1A] except Element [19A] says the “*first wireless device operable of determining*” a location of the “*first wireless device.*” As I discussed above for Element [1A] (§VIII.A.2.a.ii), Sheha discloses that the cellphones (wireless devices) themselves determine their own positions or their positions can be determined by the networks. Sheha, 10:5-16, 11:15-20. Thus, it is my opinion that Sheha meets Element [19A] for the same reasons Sheha meets Element [1A] (*supra* §VIII.A.2.a.ii).

iii. Element [19B]: a second location of a second wireless device, is operable of being determined

[0183] Element [19B] recites the same limitation as recited in Element [18B]. Thus, it is my opinion that Sheha meets Element [19B] for the same reason Sheha meets Element [18B] (*supra* § VIII.A.2.h.iii).

iv. Element [19C]: said first and second locations are operable of being provided to a server, said server is located remotely from said first and second wireless devices,

[0184] Element [19C] recites the same limitation as recited in Element [18C]. Thus, it is my opinion that Sheha meets Element [19C] for the same reason Sheha meets Element [18C] (*supra* § VIII.A.2.h.iv).

v. Element [19D]: said first location is operable of being requested by said second wireless device outside of a call for communication between said first wireless device and said second wireless device,

[0185] Element [19D] recites similar limitations as Element [1B]. Thus, it is my opinion that Sheha meets Element [19D] for the same reason Sheha meets Element [1B] (*supra* § VIII.A.2.a.iii)].

vi. Element [19E]: said second location is operable of being requested by said first wireless device,

[0186] Element [19E] recites the same limitation as recited in Element [18E]. Thus, it is my opinion that Sheha meets Element [19E] for the same reason Sheha meets Element [18E] (*supra* § VIII.A.2.h.vi).

- vii. Element [19F]: a first permission is operable of being provided by said first wireless device for said second wireless device to obtain said first location,**

[0187] Element [19F] recites similar limitations as Element [1C], but Element [19F] refers to “a ***first permission***” “to ***obtain said first location***” whereas Element [1C] refers to “a *permission*” “to ***access said location,***” which is a location obtained by the second wireless device. Thus, it is my opinion that Sheha meets Element [19F] for the same reason Sheha meets Element [1C] (*supra* §VIII.A.2.a.iv).

- viii. Element [19G]: a second permission is operable of being provided by said second wireless device for said first wireless device to obtain said second location,**

[0188] Element [19G] recites the same limitation as Element [18G]. Thus, it is my opinion that Sheha meets Element [19G] for the same reasons Sheha meets Element [18G] (*supra* §VIII.A.2.h.viii).

- ix. Element [19H]: said first and second permissions are operable of being stored on said server,**

[0189] Element [19H] recites the same limitation as Element [18H]. Thus, it is my opinion that Sheha meets Element [19H] for the same reasons Sheha meets Element [18H] (*supra* §VIII.A.2.h.ix).

- x. **Element [19I]: said first location is operable of being provided from said server to said second wireless device as a result of said first permission outside of said call,**

[0190] Element [19I] recites similar limitations as Element [1E], but Element [19I] refers to “*said **first** location*” “*provided...to said **second** wireless device as a result of said **first** permission*” whereas Element [1E] refers to “*said location*” “*provided...to said **second** wireless device in accordance with said permission.*” Thus, it is my opinion that Sheha meets Element [19I] for the same reason Sheha meets Element [1E] (*supra* §VIII.A.2.a.vi).

- xi. **Element [19J]: said second location is operable of being provided from said server to said first wireless device as a result of said second permission,**

[0191] Element [19J] recites similar limitations as Element [18J]. Thus, it is my opinion that Sheha meets Element [19J] for the same reason Sheha meets Element [18J] (*supra* §VIII.A.2.h.xi).

- xii. **Elements [19K]-[19L]: updates of said first location are operable of being provided to said second wireless device as a result of said first permission, updates of said second location are operable of being provided to said first wireless device as a result of said second permission,**

[0192] Elements [19K] and [19L] recite similar limitations as claim 7, which I discussed above (§VIII.A.2.e). As I discussed above for claim 7 (§VIII.A.2.e), Sheha discloses that mobile devices may provide *updates* of their

locations to each other via the ODAS. Sheha, 10:66-11:51. Sheha also discloses that locations are provided by the ODAS *as a result of permissions* granted to the other device. Sheha, 10:66-11:51. *See also supra* §VIII.A.2.a (claim 1). As I discussed above for Elements [1C]-[1E] (§§VIII.A.2.iv-vi), the ODAS provides a device's location only as allowed by the permissions provided by the device. Because of that, POSAs would have understood that the location updates are also provided as a result of the corresponding permissions. Moreover, as I discussed above for claim 18 (§VIII.A.2.h), any of Sheha's mobile devices can perform the same functionality as each other.

[0193] Thus, it is my opinion that Sheha meets Elements [19K] and [19L].

xiii. Element [19M]: wherein said first wireless device is operable of providing a first map from a perspective of said first location.

[0194] Element [19M] recites similar limitations as Element [1F], except Element [19M] refers to “*said first location*” whereas Element [1F] refers to “*said location*.” Thus, it is my opinion that Sheha meets Element [19M] for the same reasons as Element [1F] (*supra* §VIII.A.2.a.vii).

- j. **Claim 20: The system of claim 18, wherein said first and second wireless devices are wireless telephones.**

[0195] Claim 20 recites similar limitations as claim 2. Thus, it is my opinion that Sheha meets claim 20 for the same reason Sheha meets claim 2 (*supra* §VIII.A.2.b).

- k. **Claim 21: The system of claim 18, wherein said second wireless device displays a map with a location marker associated with said first location.**

[0196] Claim 21 recites similar limitations as claim 3, except claim 21 refers to “*said **first** location*” whereas claim 3 refers to “*said location,*” which is the location of the first wireless device (*see* Element [1B]). Thus, it is my opinion that Sheha meets claim 21 for the same reason Sheha meets claim 3 (*supra* §VIII.A.2.c).

- l. **Claim 24: The system of claim 18, wherein said first permission is operable of being removed, by said first wireless device, for said second wireless device to obtain said first location.**

[0197] Claim 24 recites similar limitations as claim 6, except claim 24 refers to “*said **first** permission*” and “*said **first** location*” whereas claim 6 refers to “*said permission*” and “*said location,*” which is the location of the first wireless device (*see* Element [1B]). Thus, it is my opinion that Sheha meets claim 24 for the same reason Sheha meets claim 6 (*supra* §VIII.A.2.d).

- m. **Claim 26: The system of claim 19, wherein said first and second wireless devices are wireless telephones.**

[0198] Claim 26 recites similar limitations as claim 2. Thus, it is my opinion that Sheha meets claim 26 for the same reason Sheha meets claim 2 (*supra* §VIII.A.2.b).

- n. **Claim 27: The system of claim 19, wherein said second wireless device displays a map with a location marker associated with said first location.**

[0199] Claim 27 recites similar limitations as claim 3, except claim 27 refers to “*said **first** location*” whereas claim 3 refers to “*said location,*” which is the location of the first wireless device (*see* Element [1B]). Thus, it is my opinion that Sheha meets claim 27 for the same reasons Sheha meets claim 3 (*supra* §VIII.A.2.c).

- o. **Claim 30: The system of claim 19, wherein said first permission is operable of being removed, by said first wireless device, for said second wireless device to obtain said first location.**

[0200] Claim 30 recites similar limitations as claim 6, except claim 30 refers to “*said **first** permission*” and “*said **first** location*” whereas claim 6 refers to “*said permission*” and “*said location,*” which is the location of the first wireless device (*see* Element [1B], §VIII.A.2.a.ii). Thus, it is my opinion that Sheha meets claim 30 for the same reason Sheha meets claim 6.

B. Ground 2: Claims 4-5, 11, 17, 22-23, and 28-29 Would Have Been Obvious over Sheha in View of Ryden

[0201] As explained in this section below, in my opinion claims 4-5, 11, 17, 22-23, and 28-29 of the '418 patent would have been obvious to a POSA in view of the combined teachings of Sheha (EX1005) and Ryden (EX1009).

[0202] I provided a discussion of Sheha in Section VIII.A.2.1 above.

1. Discussion of Ryden (EX1009)

[0203] Generally, Ryden teaches a location-based communication system in which “[e]mergency features enable the location based communication system to locate and notify the nearest and/or best equipped party for assistance in the event of an emergency, issue warnings to all phones in a specific area of any size, calculate vehicle velocities and control traffic.” Ryden, Abstract. Ryden’s system is able to obtain locations of mobile devices and enable them to identify other nearby local devices and, if desired, to communicate with them. Ryden, 3:61-4:39. Each device in the system may have a conventional telephone number, but each may be contacted using a separate geographical number, referred to in Ryden as its “G#,” which is associated with the target device based on its location. Ryden, 4:40-5:24. For example, Ryden states that “[t]o initiate a call from a first telephone unit to a second telephone unit, the geographic earth location (called G# herein) of the second telephone unit (more precisely, the PLS antenna of the unit) may be identified in the call initiating process.” Ryden, 4:44-48. Each device

“determine[s] its own earth location i.e. G#...using current GPS technology.”

Ryden, 8:41-43.

[0204] A device being “monitored” in Ryden can respond with its “location G#” even when the device “is turned OFF.” Ryden, 16:53-62. Ryden describes many different use cases for its system to enable communications with vehicles, such as aircraft, ships, or cars, that can be located, but whose identity is unknown. Ryden, 13:50-14:40. In addition, Ryden describes determining navigational (movement-based) information about target wireless devices, such as their direction or speed of travel, which can be used to prevent collisions or to assist with routing or driving directions. Ryden, 18:41-50, 19:34-47, 19:49-20:14.

2. Discussion of Sheha-Ryden Combination

[0205] As I discussed above, Sheha (§VIII.A.1) and Ryden (§VIII.B.1) are also related to mobile devices and/or applications for mobile devices (e.g., positioning). As I discussed above in Section VII.A, a POSA would have had a general motivation to combine references, such as Sheha and Ryden based on the 1990s Federal mandate to update wireless devices and carrier network location-based technologies and services years and the possibility of monetizing their heavy investments. As I discussed above in Section VII.A, the device and wireless-network carriers had reason to capitalize on the additional capabilities and associated benefits that I discussed in that section of having location as part of the

data set/app functionality would provide. In my opinion, a POSA would have been motivated to incorporate Ryden's speed and direction determination capabilities, as well as Ryden's location monitoring for a device that is turned OFF, into Sheha's system to provide such functionality and standard navigation information using Sheha's mapping functionality. Sheha describes route and navigation functionality, such as providing driving directions. Sheha, 11:10-54. Thus, a POSA would have looked to a reference like Ryden to determine how to incorporate those kinds of navigation information. As discussed above (§VIII.B.1), Ryden teaches describes determining certain navigational information, such as speed, direction, travel time, approximate location, speed of the target device, or providing a compass. Ryden, 7:25-31, 15:29-56, 18:41-50, 19:34-67.

[0206] Such information complements and enhances the navigational features disclosed in Sheha and improve navigational functionality, so that not only may it be useful in an emergency, as discussed in Ryden (e.g., 19:34-67), but also to people on cellphones who are meeting up with each other. Users of the Sheha system would have wanted to have typical navigational information available to them, such as the speed and direction they are travelling in, the speed of a device they are attempting to meet, as well as visual navigational aids, such as a compass. POSAs would have also known that a person meeting another person who is using a mobile device and who may be moving would want to know about the other

person's movement, such as where they are heading and how fast. Sheha, 11:10-54. POSAs would have understood that such functionality would help mobile device users more quickly and more efficiently meet.

[0207] A POSA would have had a reasonable expectation of success of incorporating Ryden's navigational functionality into Sheha because Sheha already provides navigational capabilities that could be modified to provide the additional data. Moreover, Ryden operates in a similar environment as Sheha using similar location information, a POSA would have had an expectation of success to integrate Ryden's functionality into Sheha's system.

[0208] In addition to these navigational features, POSAs would have also understood location monitoring for a device that is turned OFF to be beneficial for, e.g., providing location services while a mobile device user is conserving battery power, or tracking a stolen device. Ryden, 16:60-62. Thus, a POSA would have looked to Ryden to improve location availability. The ability to provide location information for a phone that is turned off would have been an obvious enhancement for the Sheha system to provide more full-featured location-sharing or tracking capabilities. Ryden describes that such functionality can be used for any purpose, such as monitoring the location of a stolen device without alerting the thief. Ryden, 5:4-14, 16:53-62. A POSA would have had a reasonable expectation of success of incorporating such functionality in a system like Sheha's because

Sheha stores location information in a server, making it available irrespective of whether the wireless device is powered on or not.

3. Mapping of Sheha-Ryden Combination to Claims 4-5, 11, 22-23, and 28-29

[0209] As explained in this section below, in my opinion a POSA would have understood that the Sheha-Ryden combination meets all limitations of claims 4-5, 11, 22-23, and 28-29 of the '418 patent, and therefore renders those claims obvious.

a. Claim 4: The system of claim 1, wherein a speed said first wireless device is traveling is operable of being determined.

Claim 5: The system of claim 1, wherein a direction said first wireless device is traveling is operable of being determined.

[0210] As I discussed above (§VIII.A.1), Sheha discloses that the wireless (mobile) devices in its system can update its ODAS as their positions change. Sheha, 11:36-49. In addition, the ODAS can also periodically update a mobile device with another wireless device's position to enable real-time driving directions and route information. Sheha, 11:49-51. The wireless devices can also calculate "all of the navigational information internally by means of the ODAS 3." Sheha, 12:32-41. A POSA would have understood navigational information to include not only position, but also movement information, like speed and direction of travel, and would expect such information to be determined and displayed by

the Sheha system. Thus, Sheha discloses obtaining multiple positions of another wireless device, which POSAs would have known can be beneficially used to determine speed and direction of travel.

[0211] While calculating speed and determining a direction of travel is straightforward when using GPS (because it provides information that a POSA would have known could be used to perform those calculations) or by simply determining the speed based on a distance travelled over a period of time and heading (direction) based on changes in position, the Ryden reference discloses that it is desirable to determine the speed and direction of travel for a user's device and a target device, which may be cellular devices. Ryden, 19:34-47; Ryden-Prov. (EX1010), 34:3-14, 35:4-11. Ryden teaches that it is desirable to determine the speed and direction of travel of a wireless device (e.g., a cellular device). Ryden, 18:33-50; Ryden-Prov. (EX1010), 16:3-15, 34:3-14. Ryden teaches that travel speed and direction may be extrapolated from received position information. Ryden, 18:41-50; Ryden-Prov., 35:4-11. Ryden also discloses that speed and direction of travel may be directly determined from position changes as a function of time. Ryden, 19:34-47; Ryden-Prov., 35:4-11.

[0212] A user seeking to navigate to a target wireless device would expect to be informed of changes to the target wireless device's positions, and providing speed and direction of travel would help the user to better navigate to the

target device. Thus, a POSA would have been motivated to enhance Sheha's navigational capabilities to determine the remote mobile device's movement, including speed and direction of travel, to provide accurate navigational information, and would have had a reasonable expectation of success because, as Ryden demonstrates, doing so in mobile / wireless devices was conventional in the prior art.

[0213] Thus, it is my opinion that the Sheha-Ryden combination meets claims 4 and 5.

b. Claim 11: The system of claim 1, wherein a direction that said second wireless device is traveling in is operable of being displayed.

[0214] Sheha discloses that the wireless / mobile devices in its system “continually send their updated position information to the ODAS,” which “periodically updates each mobile device with the other's position information, thus providing real-time driving directions and route information.” Sheha, 11:39-51. That is, the ODAS can periodically update a mobile device with another mobile device's position to enable real-time driving directions and route information. Sheha, 11:49-51. The mobile devices can also calculate “all of the navigational information internally by means of the ODAS 3.” Sheha, 12:32-41.

[0215] A POSA would have understood navigational information to include not only position, but also movement information, like speed and direction

of travel, and would expect such information to be determined and displayed by the Sheha system.

[0216] While calculating speed and determining a direction of travel is straightforward when working with GPS, the Ryden reference discloses that direction of travel may be determined for a user's device and a target device using such position updates. Ryden, 18:41-50, 19:34-47; Ryden provisional, 34:3-14, 35:4-11. To the extent that a direction of travel is not disclosed by Sheha's "navigational information," a POSA would have been motivated to modify Sheha to incorporate such functionality from Ryden to provide such navigational information. *See supra* §VIII.B.2 (discussing Sheha-Ryden combination).

[0217] Further, a POSA would have been motivated to provide the direction of travel on Sheha's maps to provide comprehensive navigational information to the user, to inform the user of their progress along a provided route and of how their target destination is moving.

[0218] A POSA would have had a reasonable expectation of success integrating such conventional functionality into Sheha's system, for reasons discussed above. *See supra* §VIII.B.2 (discussing Sheha-Ryden combination).

[0219] Therefore, it is my opinion that the Sheha-Ryden combination meets claim 11.

- c. **Claim 17: The system of claim 1, wherein said first wireless device is OFF when said location is provided to said second wireless device.**

[0220] The Sheha-Ryden combination that I discussed above (§VIII.B.2) incorporates Ryden’s teaching to make a location monitoring feature “programmable to bypass the [*first wireless device*] unit’s ON-OFF switch...and respond with its G#...even when the unit 10 is turned OFF. Thus, the location G#...may be monitored” such as to “allow[] a stolen telephone unit...to be continuously monitored.” Ryden, 16:53-62; Ryden-Prov, 31:4-8. Thus, in my opinion, Sheha in view of Ryden renders obvious claim 17.

- d. **Claim 22: The system of claim 18, wherein a speed of said first wireless device is traveling is operable of being determined.**

[0221] Claim 22 recites similar limitations to claim 4. Thus, it is my opinion that the Sheha-Ryden combination meets claim 22 for the same reason Sheha-Ryden meets claim 4 (*supra* §VIII.B.3.a).

- e. **Claim 23: The system of claim 18, wherein the direction said first wireless device is traveling is operable of being determined.**

[0222] Claim 23 recites similar limitations to claim 5. Thus, it is my opinion that the Sheha-Ryden combination meets claim 23 for the same reason Sheha-Ryden meets claim 5 (*supra* §VIII.B.3.a).

- f. **Claim 28: The system of claim 19, wherein a speed said first wireless device is traveling is operable of being determined.**

[0223] Claim 28 recites similar limitations to claim 4. Thus, it is my opinion that the Sheha-Ryden combination meets claim 28 for the same reason Sheha-Ryden meets claim 4 (*supra* §VIII.B.3.a).

- g. **Claim 29: The system of claim 19, wherein the direction said first wireless device is traveling is operable of being determined.**

[0224] Claim 29 recites similar limitations to claim 5. Thus, it is my opinion that the Sheha-Ryden combination meets claim 29 for the same reasons Sheha-Ryden meets claim 5 (*supra* §VIII.B.3.a).

C. Ground 3: Claims 8-9, 12, 14, and 25 Would Have Been Obvious over Sheha in view of Tanaka

[0225] As explained in this section below, in my opinion claims 8-9, 12, 14, and 25 of the '418 patent would have been obvious to a POSA in view of the combined teachings of Sheha (EX1005) and Tanaka (EX1011).

[0226] I provided a discussion of Sheha in Section VIII.A.1 above.

1. Discussion of Tanaka (EX1011)

[0227] Tanaka describes allowing wireless users to identify other nearby wireless users and providing corresponding alerts: “[a] system enabling mobile wireless users to obtain information on other proximate users both fixed and wireless.” Tanaka, Abstract. More specifically, the Tanaka system discloses

that a “first user is automatically notified if an additional user becomes proximate to said first user wherein said additional user meets criterion established in said search of said database.” Tanaka, 7:61-64 (claim 10). For example, Tanaka’s system monitors for other users coming into range of the user. Tanaka, 6:60-7:5, claim 20. Tanaka’s server will alert the user when another user with a matching profile comes within the search radius. Tanaka, 6:60-7:5, claim 20.

[0228] Tanaka also discloses users creating profiles with “access control features to assign read/write privileges to other users or groups of users.” Tanaka, 5:66-67. Tanaka further discloses a “first user submits a search_request to the system 10 using communications device 2 together with search criterion including keywords and geographic search radius.” Tanaka, 5:56:7:1. “The user_profiles 8,9 that are both geographically close to said first user and contain some of the search_words specified by said first user, are examined for access control restrictions specified in said user_profiles 8,9” and those “that do not have any access control features enabled are relayed to said first user.” Tanaka, 6:60-7:5.

[0229] Tanaka's Figure 4 is flowchart illustrating this process:

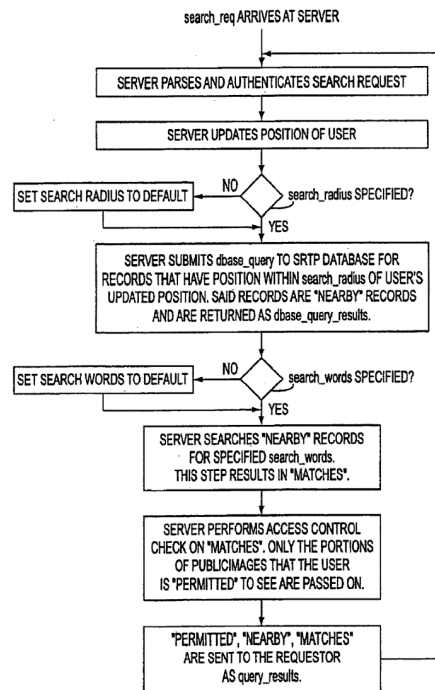


FIG. 4

Tanaka, FIG. 4

2. Discussion of Sheha-Tanaka Combination

[0230] While the Sheha system provides a robust system for sharing locations of wireless devices, POSAs would have understood that there would have been many reasons why one would want to determine another person's location, including to obtain directions or determine if a friend is nearby for a social visit. Thus, users of the Sheha system would have wanted a way to be notified about the locations of other users of interest without needing to repeatedly manually request and receive their locations. In addition, users of the Sheha system would also like to have had a way to identify other people of interest that may be nearby for them

to meet. Thus, a POSA would have looked for ways to use the location-sharing features of the Sheha system to provide that additional functionality, such as by automatically obtaining location information for other users, looking for potential matches – potential good business, social, or romantic matches – between the user and those other users, or providing alerts based on locations of those other users.

[0231] For example, a POSA would have looked to Tanaka, which describes a system that allows a wireless user to establish alerts for other wireless users and then notify the user when one or more of the other wireless users is nearby. Tanaka, Abstract, claim 20; *see also* Tanaka, 1:31-62. This type of functionality was well-known before the priority dates of the challenged patent. A POSA would have sought to incorporate Tanaka’s alerting functionality so that users of the Sheha system do not need to repeatedly manually check the location of another user. Since the location information for the user and others who have authorized the user to obtain their locations is already available to the Sheha system, a POSA would have had a reasonable expectation of success in adding functionality to establish alerts based on proximity between two known locations. In addition, Tanaka provides some specific examples in the case of users who might be good matches, but might not ordinarily be geographically close to each other—one user lives in New York and another in Moscow—might become

geographically close due to the New Yorker travelling to Moscow. Tanaka, 1:44-64.

[0232] Tanaka also allows users to establish search parameters for users that may be in proximity to them to locate people of interest. Tanaka, 6:10-7:1. For example, users may establish a profile for themselves with various information, such as interests or dating preferences. Tanaka, 5:56-6:3. The users can then perform search queries for other users based on information stored in the other users' profiles and be notified of any matches that are nearby. Tanaka, 6:60-7:5. As discussed above, users of the Sheha system would have desired such functionality as an easy way to meet new people in their area. Further, because the Tanaka system can automatically check for such people without continued manual intervention from the users, a POSA would have found Tanaka's functionality to be suitable to meet the needs of Sheha's users.

[0233] Moreover, because Sheha allows users to establish accounts with their systems, which at least include a login and password, a POSA would have a reasonable expectation of success in allowing users to provide more information for those accounts, such as in the form of a user profile, which were commonly used before the priority date of the challenged patent, and perform queries based on the information in those accounts and the location information that Sheha already receives and stores. Sheha and Tanaka both discuss that their

systems can locate other users based on their mobile devices. Thus, a POSA would have reasonably expect success in incorporating such functionality into Sheha's system. For example, it would have been a relatively straightforward programming effort to store additional user profile information in the Sheha system and to add the search functionality described in Tanaka.

[0234] In addition to the alert and searching functionality, a person would have been motivated to incorporate related user interface functionality described in Tanaka into Sheha to allow a user to easily manually enter data for a user profile, alerts or searches. Users of the Sheha system would have wanted easy and intuitive ways to send location commands or request location information, such as to update the user's location with the Sheha server. Thus, a POSA would have been motivated to add user interface options to streamline the location process, such as Tanaka's disclosure of simply tapping on a map or a location in a table to send the user's location to the server. Tanaka, 3:7-12, 6:17-24, claims 7, 17, 28. For each of these user interface features, a POSA would have had a reasonable expectation of success because user interface functionality was necessary to allow users to interact with the Sheha system, and the types of functionality discussed in Tanaka and the challenged patent were typical types of user interface controls in use before the priority dates of the challenged patent.

3. Mapping of Sheha-Tanaka Combination to Claims 8-9, 12, 14, and 25

[0235] As explained in this section below, in my opinion a POSA would have understood that the Sheha-Tanaka combination meets all limitations of claims 8-9, 12, 14, and 25 of the '418 patent, and therefore renders those claims obvious.

- a. Claim 8: The system of claim 1, wherein said second wireless device is operable of being alerted when said first wireless device is within a distance of said second wireless device.**

[0236] As I discussed above with respect to Elements [1B]-[1E] (§§VIII.A.2.a.iii-vi), a wireless device in Sheha's system may obtain the location of another wireless device from a target device. Tanaka describes that a mobile device can submit a search request and be notified about users of nearby mobile devices that match search terms in the search request and are within a specified proximity of the mobile device (e.g., are within a search radius, which specifies when another device *is within* a specified *distance* that is defined by the search radius). Tanaka, Abstract, 6:10-7:1. In addition, Tanaka discloses that the user can be automatically notified if users of mobile devices later become geographically close to the requesting user and satisfy specified search terms. Tanaka, claim 20.

[0237] As I discussed above (§VIII.C.2), a POSA would have been motivated to incorporate Tanaka’s location alerting functionality into Sheha’s system to notify a requesting user that a user of interest, such as a friend or contact, is nearby so that users of the Sheha system do not need to repeatedly manually check their locations and that a POSA would have had a reasonable expectation of success in doing so.

[0238] I have been informed by counsel that Mullen argued in a prior proceeding that Tanaka’s search request is neither directed to nor is capable of targeting a specific pre-identified user, like “*said first wireless device*” because Tanaka allegedly identifies only “unknown users.” In my opinion, Mullen was incorrect. Tanaka teaches that “*if* Person B is not a member of any access control group previously defined by Person A, Person B accesses” a “limited” version of “Person A’s PublicImage.” Tanaka, 4:27-31. This immediately teaches and would have rendered obvious to POSAs that the user at the *second wireless device* can alternatively be a member of an “access control group previously defined by” the other device’s user—that is, a friend/contact of the *first wireless device* user who has already given the *second wireless device user* permission to access the *first wireless device* user’s location and profile. In this obvious Sheha-Tanaka combination, the *second wireless device* which has permission from the *first wireless device* is alerted when the *first wireless device* is within a set distance; *see*

also infra §VIII.C.3.c (claim 12) (where I discuss the obviousness of device/user-specific alerts).

[0239] Therefore, it is my opinion that the Sheha-Tanaka combination meets claim 8.

b. Claim 9: The system of claim 1, wherein:

- i. Elements [9A]-[9B]: [9A] a first dating matching profile is operable of being provided by said first wireless device; [9B] a second dating matching profile is operable of being provided by said second wireless device**

[0240] The Tanaka system allows users to establish user profiles that may include dating information (i.e., *dating matching profiles*). Tanaka, 2:43-45, 5:56-6:3. In particular, Tanaka discloses that “[a]n object of the invention is to provide matching and/or introduction services between mobile users, and other mobile users or non-mobile users, in response to real-time, proximate positioning and correlated user profiles.” Tanaka, 2:15-18. Tanaka also discloses that users may create and update their profiles (including *dating matching profiles*) using their mobile devices. Tanaka, 2:43-45, 5:56-6:3. Thus, Tanaka teaches all aspects of Elements [9A] and [9B].

[0241] In my opinion, a POSA would have been motivated to incorporate the dating functionality from Tanaka with the Sheha system to improve the location-sharing functionality in Sheha to enable users of wireless devices to identify other users of interest and to navigate to each other. In particular, Tanaka

teaches that users who might ordinarily not be proximate to each other—one user lives in New York and another in Moscow—might become geographically close due to the New Yorker traveling to Moscow. Tanaka, 1:44-64. Thus, Tanaka teaches to identify when such transient matches occur and enable the parties to meet. A POSA would have been motivated to incorporate that Tanaka functionality into the Sheha system to allow users to identify other users that may be of interest to them and who are now nearby, including users that are already friends/contacts but are not normally nearby. *See supra* §VIII.C.2 (discussing Sheha-Tanaka combination). Further, the POSA would have had a reasonable expectation of success based on Sheha’s and Tanaka’s teaching. *See supra* §VIII.C.2 (discussing Sheha-Tanaka combination).

[0242] As I discussed in Section VIII.C.2 above, a POSA would have been motivated to modify Sheha’s system to include Tanaka’s dating matching functionality and would have had a reasonable expectation of success in doing so.

[0243] Therefore, it is my opinion that the Sheha-Tanaka combination meets Elements [9A] and [9B].

ii. Element [9C]: a second location is operable of being obtained, wherein said second location is the location of said second wireless device; and

[0244] As I discussed above with respect to Element [1A] (§VIII.A.2.a.ii), Sheha discloses a system with mobile wireless devices that can

determine their own locations and provide those locations to a remote system.

Sheha, Abstract, 4:13-18; *see also* Sheha, 10:5-16, 11:15-23. Tanaka also discloses that locations of the mobile devices in its system can be obtained.

Tanaka, 2:49-51, 2:58-3:7. Thus, both Sheha and Tanaka disclose that obtaining locations of both wireless devices may be obtained. Thus, Sheha alone and in combination with Tanaka meets Element [9C].

iii. Element [9D]: said location, said second location, said first dating matching profile, and said second dating matching profile is operable of being utilized to provide an alert

[0245] As I discussed above for claim 8 (§VIII.C.3.a), Tanaka discloses that its system can provide alerts to a requesting user if other geographically close users match search parameters or items in the user's own profile. *See* Tanaka, 6:10-15, 6:56-60, claim 20. Tanaka describes that its search requests are compared against other users' profiles to identify matches, and that those user profiles can include dating preferences. Tanaka, 5:56-6:3, 6:46-7:5. If user profiles are found that are geographically close to the requesting user are located, they are provided to the requesting user, thereby alerting the requesting user of the matching user profiles. Tanaka, 6:10-7:5. Tanaka also discloses that the search results can be updated dynamically, so that the requesting user is "automatically notified if an additional user becomes proximate to said first user

wherein said additional user meets criterion established in said search of said database.” Tanaka, Claim 20.

[0246] A POSA would have been motivated to modify Sheha to incorporate such functionalities from Tanaka for the reasons I discussed above (§VIII.C.2, §VIII.C.3.a, §§VIII.C.3.b.i-ii). For example, a POSA would have been motivated to combine the Tanaka functionality into the Sheha system to allow users to identify other nearby users that may be of interest to them, as I discussed above with respect to Elements [9A]-[9C] (§§VIII.C.3.b.i-ii). Further, a POSA would have had a reasonable expectation of success, for the reasons I discussed above. *See supra* §VIII.C.2 (discussing Sheha-Tanaka combination). Thus, it is my opinion that Sheha-Tanaka meets Element [9D].

c. Claim 12: The system of claim 1, wherein said second wireless device is operable of being allowed to set location alerts associated with said first wireless device.

[0247] As I discussed above with respect to claim 8 (§VIII.C.3.a), Tanaka discloses that users can submit search requests and be notified about users of nearby mobile devices that match search terms in the search request. Tanaka’s claim 20 discloses that a user may be “automatically notified if an additional user becomes proximate to said first user wherein said additional user meets criterion established in said search of said database.” A POSA would have understood the automatic proximity notification to be a “*location alert*.”

[0248] Moreover, because the user has established the search radius, the user has established conditions for location alerts (i.e., *set location alerts*) associated with such other wireless devices. Tanaka, 6:46-55. Claim 12 does not require that a location alert be established specifically for the first wireless device, but only that the location alert be “*associated*” with it. By establishing a radius for geographic proximity or establishing search criteria corresponding to the target device, the alerts in Tanaka are associated with any devices that satisfy the search parameters, including the search radius. A POSA would have been motivated to combine Sheha with Tanaka, and have a reasonable expectation of success, for the reasons I discussed above (§VIII.C.2). Therefore, in my opinion, Sheha in view of Tanaka renders claim 12 obvious.

[0249] Alternatively, even if claim 12 did require establishing a location alert specifically for the *first wireless device*, it would have been obvious to implement the Sheha-Tanaka combination to make the *second wireless device* operable to do this. This is because POSAs would have known that users may desire specific alerts when a known contact of interest is nearby, and reasonably expected success because such functionality had been implemented in mobile-device location-tracking systems in the art.

[0250] My testimony as to the POSA’s background knowledge in this regard is corroborated by De-Vries (EX1013), which discloses providing users of

mobile / wireless devices (e.g., “cell phone[s]”) with an “information server” that provides “place-specific people notifications” about “people with whom the user has established relationships.” De-Vries, 2:14-62. De-Vries also discloses that a “user can segregate the other users tracked in his or her people/place state into separate subsets, such as subsets of family, friends,” etc. and “set the rules and/or parameters that control notifications to also be based on the subset of the other user who moved.” De-Vries, 3:5-14. Thus, De-Vries corroborates that it was known that users may desire alerts when a specific known contact of interest is nearby, and that such functionality had been implemented in mobile-device location-tracking systems in the art, thereby corroborating that a POSA would have reasonably expected success using such functionality in a system like Sheha’s.

[0251] Therefore, it is my opinion that the Sheha-Tanaka combination meets claim 12.

d. Claim 14: The system of claim 1, wherein said second wireless device is operable of being alerted when said first wireless device enters a geographic region.

[0252] Tanaka discloses outputting notifications based on a search radius, which establishes a geographic region. Tanaka, 6:46-7:5, claim 20.

Tanaka’s alerts may be employed by any wireless devices, thus both the first and second wireless devices may establish search parameters with a search radius. The *second wireless device* can receive alerts regarding the *first wireless device* as I

discussed above for claim 8 (§VIII.C.3.a), and can “tell the server how often to perform the defined search” and for how long “to continue searches.” Tanaka, 4:6-16. Thus, when the *second wireless device* performs continued, frequent searches over a time interval and the *first wireless device* enters the search radius during that interval, the *second wireless device* will be *alerted when said first wireless device enters [the] geographic region*. A POSA’s motivations to combine and reasonable expectation of success for claim 14 are the same as the motivations and reasonable expectation of success that I discussed above for claims 8-9 (§§VIII.C.3.a-b) and 12 (§VIII.C.3.c). Therefore, it is my opinion that Sheha in view of Tanaka renders obvious claim 14.

- e. **Claim 25: The system of claim 18, wherein said second wireless device is operable of being alerted when said first wireless device is within a distance of said second wireless device.**

[0253] Claim 25 recites similar limitations as claim 8. Thus, it is my opinion that the Sheha-Tanaka combination meets claim 25 for the same reason Sheha-Tanaka meets claim 8 (§VIII.C.3.a).

D. Ground 4: Claims 15-17 Would Have Been Obvious over Sheha in view of Ganesh

[0254] As explained in this section below, in my opinion claims 15-17 of the ’418 patent would have been obvious to a POSA in view of the combined teachings of Sheha (EX1005) and Ganesh (EX1012).

[0255] I provided a discussion of Sheha above (§VIII.A.1).

1. Discussion of Ganesh (EX1012)

[0256] Ganesh discloses “[a] method (36) for providing a current location (35) of a wireless communication device (24) within a wireless communication network (20) calls for activating an automatic location identification (ALI) process in response to a request from an authorized requesting party.” Ganesh, Abstract; *see also* Ganesh, 1:14-18. Ganesh further discloses, “[a]n indicator (106) of the current location (35) is provided to the authorized requesting party via a map-enabled web page (100).” Ganesh, Abstract.

[0257] Ganesh describes applying these techniques for non-emergency uses, while preventing unauthorized access to location information. Ganesh, 2:45-60. In Ganesh’s system, the approximate location of a mobile device can be obtained using call history records to identify cell sites and sectors in communication with the device during a prior call. Ganesh, 4:29-35, 7:3-20. Further, a more accurate location can be obtained using the automatic location techniques for E-911, such as built-in GPS receivers. Ganesh, 7:32-65.

[0258] Ganesh describes that the user accesses a “first web page, or a log-in web page.” Ganesh, 5:1-3; FIG. 3. The user next accesses a “[c]urrent location request web page 66 includ[ing] a dialing number field 68 provided for the

entry of a dialing number 72 of wireless communication device 24.” Ganesh, 6:4-7; FIG. 5.

[0259] For secure location sharing, Ganesh requires requesting parties to submit log-in information and identify the target device, after which the system determines whether the requestor is authorized to locate the target device. Ganesh, 5:1-6:32. Ganesh discloses that if the requestor is not an authorized party, they receive a third web page, the “[a]ccess denial web page 86 [that] may contain various possible explanations 88 describing why access to information location was denied” and a query to request location information at a later time. Ganesh, 6:33-54, FIG. 6 (below).

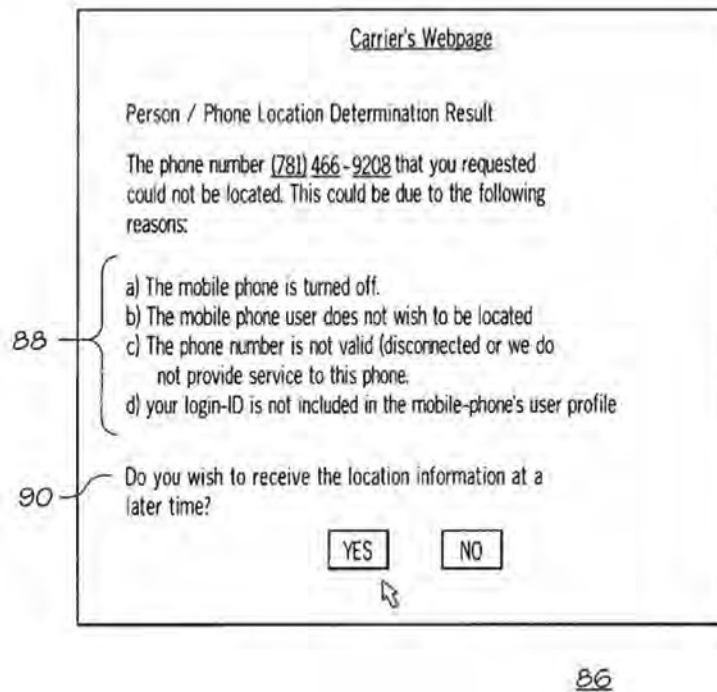


FIG. 6

Ganesh, FIG. 6

[0260] Ganesh further discloses that if a requestor is authorized to receive location information, the target device's location is displayed on a map marked by star 106: "a map web page 100, supplied by the service provider of a map 102 of a geographical area 104 having an indicator 106 of current location 35, in the form of a star, for wireless communication device 24 (FIG. 1) in response to the execution of current location provision process 36 (FIG. 2)." Ganesh, 8:7-12, FIG. 7 (below).

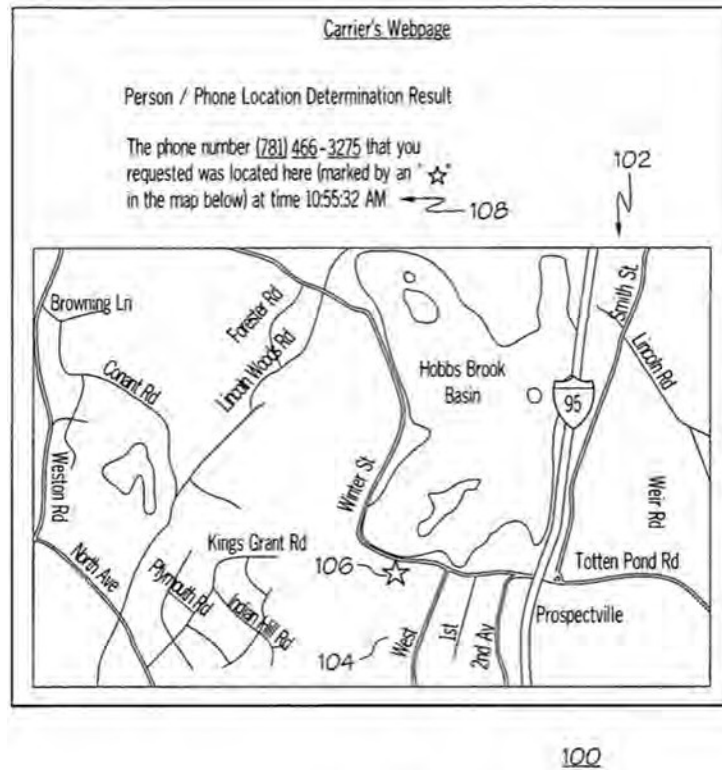


FIG. 7

Ganesh, FIG. 7

[0261] In cases where a device is not online or connected to a wireless network, Ganesh discloses that call records may be accessed to determine a likely location of the device. For example, it describes that “the potential location area of wireless communication device 24 may be ascertained by accessing comprehensive call history database 34 (FIG. 1) and selecting a latest one of call records 32 in date and time of day that is associated with device 24.” Ganesh, 7:3-20. This can enable determining the location of a device after it has been turned off or travelled outside of a service area. Ganesh, 7:62-65.

2. Discussion of Sheha-Ganesh Combination

[0262] In my opinion, a POSA would have found it desirable and been motivated to enhance Sheha's system to provide more comprehensive location capabilities, including via Ganesh's teachings of providing locations based on call history. A POSA considering additional user needs for the Sheha system would have considered other well-known functionality in the location and navigation technologies, such as those described in Ganesh. As I discussed above (§VIII.D.1), Ganesh describes a system that can determine and provide the location of a mobile device to an authorized requesting party, similar to Sheha. Ganesh, Abstract, 1:14-18. Users of the Sheha system would have wanted an option to locate other users at any time, irrespective of whether their mobile device was turned on or off. For example, while an exact position may be desirable, POSAs would have known that a most-recent position based on a prior call can still provide useful location information for a use. Ganesh, 1:36-2:41. For example, a parent would want to know where their child was at any time of day or night. Similarly, consistent with the already existing focus of E-911 services, emergency services attempting to respond to a person needing assistance would need to know their location, even if the person's mobile device was off, such as due to running out of batteries.

[0263] Ganesh describes several functionalities that a POSA would have been motivated to combine with Sheha, including storing a history of a mobile device's calls and locations, which can allow the mobile device to be located when it is turned off or otherwise outside of a service area. This would allow other users to locate the mobile device, such as based on its apparent movement over time based on the history information, even if it is experiencing communication difficulties or has lost power. It also provides the advantage of providing levels of access to users requesting the location of a wireless device, such as approximate location information when a wireless device is powered off or out of a service area, and more precise location information when the wireless device is on and connected to its wireless service.

[0264] A POSA would have had a reasonable expectation of success in incorporating any of these or other functionalities in Ganesh into the Sheha system. Sheha is directed to very similar subject matter, including determining and sharing the location of a wireless device, and the functionality to be incorporated into the Sheha system would have been straightforward modifications of those systems such that a POSA would have had a reasonable expectation of success. For example, Sheha already is configured to store location information. Thus, storing the call history and corresponding location information would have involved straightforward modifications to the Sheha system to store that additional data

(e.g., a minor upgrade to Sheha's ODAs to store call history and location information). Further, because Sheha provides stored location information, Sheha would already be capable of providing that information irrespective of whether the target device was turned on or off.

3. Mapping of Sheha-Ganesh Combination to Claims 15-17

[0265] As explained in this section below, in my opinion a POSA would have understood that the Sheha-Ganesh combination meets all limitations of claims 15-17 of the '418 patent, and therefore renders those claims obvious.

a. Claim 15: The system of claim 1, wherein said facility stores a history of locations for said first wireless device.

[0266] As I discussed above with respect to claim 1 (§VIII.A.2.a), wireless devices in the Sheha system provide their locations to the ODAS, which stores them. *See* §VIII.A.2.a.ii (Element [1A]), §VIII.A.2..a.v (Element [1D]), §VIII.A.2..a.vi (Element [1E]); Sheha, 11:3-8, 11:44-51, FIG. 3. Ganesh discloses that a server can store call histories that includes locations for wireless devices, such as may be represented by cellular sites that the wireless device has previously connected to. Ganesh, 4:29-35, 6:55-7:20, 7:62-65. A POSA would have been motivated to incorporate such functionality into the Sheha system and would have had a reasonable expectation of success, as I discussed above (§VIII.D.2). Therefore, it is my opinion that the Sheha-Ganesh combination meets claim 15.

- b. Claim 16: The system of claim 1, wherein said server stores a history of locations for said first wireless device and said history is utilized to provide an approximate location of said first wireless device.**

[0267] Claim 16 repeats the language of claim 15, which I discussed above (§VIII.D.3.a) and adds that “said history is utilized to provide an approximate location of said first wireless device.” Ganesh describes that its history feature can be used to provide an approximate location of a wireless device, such as based on the call history and a related cell site. Ganesh, 4:29-35, 6:55-7:20, 7:62-65. A POSA would have been motivated to incorporate such functionality into the Sheha system and would have had a reasonable expectation of success for the same reasons as discussed above with respect to claim 15 (§VIII.D.3.a). *See also supra* §VIII.D.2 (discussing Sheha-Ganesh combination). Therefore, it is my opinion that the Sheha-Ganesh combination meets claim 16.

- c. Claim 17: The system of claim 1, wherein said first wireless device is OFF when said location is provided to said second wireless device.**

[0268] As I have discussed above (§VIII.A.2.a.ii ([1A]), §VIII.A.2.a.v ([1D]), §VIII.A.2.a.vi ([1E])), Sheha discloses that locations of wireless devices are stored at Sheha’s ODAS (a server). Sheha, 11:3-8, 11:44-51, FIG. 3. Because the locations are stored at the ODAS, a POSA would have understood that a requesting device can request a location from the ODAS regardless of whether the target device is on or off. Sheha, 11:3-8, 11:44-51. Ganesh describes this same

functionality because it discusses providing location information from call histories (a call log) for devices that are turned off or otherwise not connected to the network. Ganesh, 7:62-65, 6:55-7:20. A POSA would have been motivated to incorporate such functionality into the Sheha system and would have had a reasonable expectation of success for the same reasons as I discussed above (§VIII.D.2; discussing Sheha-Ganesh combination). Therefore, it is my opinion that the Sheha alone or with Ganesh renders obvious claim 17.

E. Ground 5: Claims 1-3, 6-10, 13-14, 18-21, 24-27, 30 Are Anticipated or Alternatively Obvious over Randall

[0269] As explained in this section below, in my opinion claims 1-3, 6-10, 13 -14, 18-21, 24-27, 30 of the '418 patent are unpatentable over Randall.

1. Discussion of Randall (EX1007)

[0270] Randall is an international (PCT) application filed August 22, 2001, and published in the international stage as EX1008 and in the U.S. national stage as EX1007. Citations herein are to the U.S. publication (EX1007); the identical description is present in the international publication (EX1008). *See supra* §VII.C (where I provide a mapping of paragraph numbers in EX1007 to page numbers of EX1008).

[0271] Randall relates to “enabling a wireless information device to access data services,” using “an extensible framework which handles data passing to and from several applications resident on the device, the framework being

shared by each of the applications.” Randall, [0002], [0006]. The wireless devices can be “radio telephones, smart phones,” etc., which “can access information on” “internet servers hosting extensible databases.” Randall, [0002], [0029].

[0272] Examples of applications on a wireless device that can all access the same server-based database framework and coordinate to provide services include “a directory application (which contains a user’s contacts list...)” and “a location application (which gives a user’s location and includes digital maps).” Randall, [0009], [0012], [0025], [0028] (“applications...share information”), [0080]-[0081], [0086], [0085]-[0115].

[0273] Randall’s framework is a “framework of frameworks’ such that services are tightly integrated in a way that the traditional browser model does not allow.” Randall, [0080]. Specifically, Randall provides a framework that allows for different services to be available from a “centralised location” (Randall, [0080]) such that different applications on the wireless device can work together to provide a service using the same data from the centralized location. Randall, [0025], [0081].

[0274] For example, Randall provides an example of a “Yellow Pages™ data services plug-in” in which different applications on a wireless device can all access data from a “Yellow Pages remote server” to work together to provide a service. Randall, [0009], *see also* Randall, [0089]-[0093] (Randall

describing a “Yellow Pages” service provided by a Directory framework application and a Radar framework). Thus, different applications on the wireless device can be “grouped together” to provide a service using the same Yellow Pages remote server data. Randall, [0025]. In the “Yellow Pages” example, “a search request performed in the directory application (e.g. search: ‘cameras’) could be routed to a Yellow Pages remote server, which responds with the required data, including detailed maps in the location application; special shopping offers are [] pushed into the shopping application; nearby shops/services are shown in the location application.” Randall, [0009]. Accordingly, the Yellow Pages data services plug-in in this example can provide data from the same source to the different applications on the wireless device that work together to provide a service.

[0275] Randall provides another example in which “data sent from a commercial data service provider can automatically populate one or more applications (such as PIM applications) on the wireless information device.” Randall, [0012]. In this example, “sporting fixtures and entertainment listings could be transmitted from a data service provider placed straight into a user’s calendar application” and “[n]ews headlines and weather could be sent straight into a user’s calendar application”. Randall, [0012]. That various data can automatically be provided to different applications on the user’s wireless device

“where it is likely to be looked at and found useful” to provide a service. Randall, [0012].

[0276] Regarding location, “[a]s an example,...a user might choose to subscribe to a service which allowed others to track his or her location—location could be a new attribute” stored in the “database” as “information relating to [the] individual.” Randall, [0021]. “The user’s friends or parents etc who wish to track the user[’]s location...could add a ‘map’ application to their own devices, which could show their position on digital maps and also, by using the location attribute of the user’s data object, it could also show the position of the user.” Randall, [0021]. In this example, the “personal information...and location based information” is “handled by contacts...and map type applications” coordinating together to provide the service. Randall, [0021]-[0022], [0025].

[0277] Randall’s system further provides “[a]ccess control...which allows a user to define which entities have read/write access to any given field in a database of information relevant to that entity.” Randall, [0066]. One such field in a user’s database is their device’s “GPS location.” Randall, [0505], Table 1. When a wireless user Bob requests access to such data belonging to a user Alice, “the server recognis[es] Bob’s device” via “ID number” and “PIN” or other password, “and determin[es] the database access rights which Alice has given

him.” Randall, [0067]. “Once authenticated, the server passes to Bob’s device the information it requests.” Randall, [0067].

[0278] Thus, Randall discloses that various applications in a wireless device can all work together to provide a service using the same server data to support the various functionalities supported by Randall’s service.

2. Mapping of Randall to Claims 1-3, 6-10, 13-14, 18-21, 24-27, 30

[0279] As explained in this section below, in my opinion a POSA would have understood that Randall meets or renders obvious all limitations of claims 1-3, 6-10, 13-14, 18-21, 24-27, and 30 of the ’418 patent, and therefore renders those claims unpatentable.

a. Claim 1

i. Element [1PRE] A system comprising:

[0280] Randall teaches a “*system*” that allows “wireless applications to access and share information.” Randall, [0028], [0052]-[0053], [0071]. As I discussed above (§VIII.E.1), the system provides access control for a wireless device user to track the location of another wireless device user. As demonstrated in the sections below, Randall’s system meets or renders obvious all elements of claim 1.

- ii. **Element [1A] a first wireless device, wherein a location of said first wireless device is operable of being determined and provided to a remote system,**

[0281] Randall's system includes "*wireless* information *device*[s]," which can be "radio telephones, smart phones," etc. Randall, [0002]. Randall discusses some examples involving Alice and Bob, who are both users of wireless information devices. Randall, [0053], [0491] ("Bob's...mobile phone"), [0505] ("Alice's mobile device"). Alice's device is an exemplary *first wireless device* as is Bob's. That is because POSAs would have understood that Randall presents Alice and Bob as arbitrary examples illustrating functionality that is equally available to any wireless information device in Randall's system. For example, Randall posits "[c]onsider Alice, who is publishing some information, and Bob who is accessing it." Randall, [0053]. POSAs would have understood Randall to be posing a hypothetical example in which Alice and Bob are arbitrary users of the ADS system and the only distinction between them is the order in which these arbitrary users are performing operations using the ADS system. POSAs would have understood that, in this example, Bob is interested in accessing Alice's data, but the example could easily be reversed in which Alice is interested in Bob's data. Indeed, Randall teaches such a scenario by providing that "Bob also has stored on the server his own personal information" ([0067]), which POSAs would have understood as Bob storing his own personal information on the server for a

potential use case of another user, e.g., Alice, accessing his information in the same way that Randall provides that Bob can access Alice's information. That understanding is also consistent with Randall's claims (e.g., claim 1), which refer to a user operating a generic "wireless information device."

[0282] "[R]esident on the wireless information device" is a "location application (which gives a user's location and includes digital maps)." Randall, [0009], [0021]. "That location data can be obtained via a GPS wireless information device, which transmits location information to [an] i-server, enabling authorised people to track the location of the GPS wireless information device by polling the server." Randall, p. 24 (Table 4, "People tracking"). The i-server is an "internet server[]"—a "server on the Internet"—which POSAs would have known is a *remote system*. Randall, [0029], [0053]. Randall at [0030] says that the "application resident on the device queries and receives data from the *remote*, extensible database" and in FIG. 4 Randall shows the system's servers located remotely from the wireless devices, in communication over remote-communication networks like GSM and the Internet.

[0283] For example, "Alice stores her data on a server on the Internet." Randall, [0053]. As shown in Table 1, one of the fields in Alice's "i-Data" ("Identity") database on the i-server is her device's "GPS location." Randall,

[0503]-[0512], [0116]-[0136] (“Identity” used for sharing “a whole gamut of information,” including “Location information”).

TABLE 1

<u>Alice’s iData</u>			
Field/Attribute	Category	Details	i-Groups
First name	personal	Alice	all
Family name	personal	Edwards	all
Title	work	European Marketing Manager	all

TABLE 1-continued

Alice's iData			
Field/Attribute	Category	Details	i-Groups
Company Name	work	Wireless Information Device gets R Us	all
Company Address	work	1 Science Park Rd, London, N1	all
Company E-mail	work	alice.edwards@Wireless Information Device getsrus.com	business 1
Company switchboard	work	0207 200 2000	all
Company Direct	work	0207 200 2012	business 1
Mobile Phone	work	0840 1234 567	business 1, friends
Home Phone 1	work	0208 341 1234	friends, family
Home Address	work	25 The Gables, Hampstead, London, NW3	family
My photo	photos		friends
Childhood photo	photos		family
Home note	notice	Sorry about dinner ☹	partner
Work note	notice	In a meeting with Tim till 7pm	work 1
My mood now	mood	Very tired	all
Tel Call Subject		"Dinner Tonight"	
Bluetooth	location	Bluetooth pods 1000–1020 . . . Sentinel room 2 . . .	
GPS	location	London W1, Seymour St.	partner
Hobby	preferences	Photography, travel	friends
Book	preferences	Maverick	friends
AlbumOfTheWeek	InstaPoll		friends

Randall, Table 1 (annotated)

[0284] Thus, Alice's *first wireless device* determines its location and provides it to the i-server (*remote system*). Accordingly, it is my opinion that Randall meets Element [1A].

- iii. **Element [1B] said location of said first wireless device is operable of being requested by a second wireless device outside of a call for communication between said first wireless device and said second wireless device,**

[0285] Randall teaches that Bob's *second wireless device* can request to access Alice's data on the i-server, which includes her *location of said first wireless device* as I discussed above §VIII.E.2.a.ii (Element [1A]). Bob's device does that "by sending to the server an unchanging pointer or key (an 'ADS Number') which is unique to" Alice. Randall, [0049]. Thus, as Alice's data changes (e.g., as "[t]he I-server is up-dated" with Alice's current location), "Bob can pull the new data into his device" by "polling the server." Randall, p. 24 (Table 4, "People tracking"), [0053], [0015] (disclosing that a device "pull[ing]" information from server is the device "request[ing]" the information). "When Bob's device sends Alice's ADS Number to the server, then the server recognises Bob's device and allows that device to read Alice's information held on the database which is specified as being accessible to Bob"—i.e., "the server passes to Bob's device the information it requests." Randall, [0049], [0067], [0512]. Bob's device indicates which "relevant information" it is requesting (which may be, for example, Alice's location information) by "sending various data tags defining its enquiry." Randall, [0067]. "Generally, Alice would prefer Bob's data requests to be routed to the server, rather than utilise the limited resources of her wireless

information device.” Randall, [0069]. Thus, outside of limited “situations...where a connection is being opened up...anyway to support a voice call,” more “[g]enerally” Alice’s *first wireless device*’s location is *requested* by Bob’s *second wireless device outside of a call for communication between Alice’s and Bob’s devices*. Randall, [0069].

[0286] Thus, it is my opinion that Randall meets Element [1B].

iv. Element [1C] a permission is operable of being provided by said first wireless device for said second wireless device to access location information about said location,

[0287] Randall’s “server recognis[es] Bob’s device and determin[es] the database access rights which Alice has given him.” Randall, [0067]. “The database can define which entities can read different fields: Alice can therefore give Bob rights to read only certain fields in her database.” Randall, [0047]. As I discussed above (§VIII.E.2.a.ii, Element [1A]) and as shown in Randall’s Table 1, one of the fields in Alice’s database is information about her device’s “GPS location,” and she has designated that field as only being accessible to users whom she has designated as part of the “i-Group” called “partner.” Randall, [0503]-[0512]. “[S]ensitive information is only available to people in certain i-Groups; allowing Alice to control what data they see.” Randall, [0509], [0136] (“Location information” is “[v]isible to specific people (or groups)”). Randall teaches that “whenever Alice wishes to, she can change the level of access of a current

contact—perhaps promoting Bob from ‘business’ to ‘friend.’” Randall, [0509]. This is a “method[] of making contacts into members of a particular i-Group,” which Alice can use via her *first wireless device* to provide *permission* for Bob’s *second wireless device* to access information about her device’s location. Randall, [0509], [0495]. “Access rights can be associated with individual entities, and can also be associated with groups of entities.” Randall, [0070], [0052]. And “users will be prepared to allow specific people access to more of their data than others.” Randall, [0146]. Thus, in one example, if Alice assigns Bob to the “partner” i-Group having access to Alice’s GPS location and Alice has only one partner (i.e. Bob), then Alice is assigning location access rights only to Bob (and his device). See Randall, Table 1 (annotated below: Alice’s iData includes “location” that is available to the “partner” “i-Group[]”). Thus, it is my opinion that Randall meets Element [1C].

TABLE 1

Alice's iData			
Field/Attribute	Category	Details	i-Groups
First name	personal	Alice	all
Family name	personal	Edwards	all
Title	work	European Marketing Manager	all
[....]			
GPS	location	London W1, Seymour St.	partner
Hobby	preferences	Photography, travel	friends
Book	preferences	Maverick	friends
AlbumOfTheWeek	InstaPoll		friends

Randall, Table 1 (pp. 21-22) (excerpted and annotated)

- v. **Element [1D] said permission is operable of being stored in said remote system, wherein said remote system is located remotely from said first and second wireless devices,**

[0288] Randall's "internet servers host[] extensible databases with attributes." Randall, [0046]. "The database can define which entities can read different fields: Alice can therefore give Bob rights to read only certain fields in her database." Randall, [0047]. Thus, when Alice "specif[ies] the remote database access rights given to different people or groups" including Bob, that *permission* is "stored as an attribute which gives access permissions to data in the database." Randall, [0052]. Thus, the *permission* for Bob to access Alice's location information is *stored in* the i-server, which is a *remote system located remotely*

from Alice’s and Bob’s wireless devices, as I discussed above (§VIII.E.2.a.ii, Element [1A]). Randall, [0501]-[0512] (Alice’s Table 1 database on i-server assigns different permissions to different i-groups, which I discussed above in §VIII.E.2.a.iv, Element [1C])).

[0289] Accordingly, it is my opinion that Randall meets Element [1D].

vi. **Element [1E] said location information about said location is operable of being provided from said remote system to said second wireless device in accordance with said permission outside of said call,**

[0290] “When one of the people in [Alice’s contact] list...looks at Alice’s ADS Number, (using an application on their...wireless information device[])”—e.g., when Bob’s device requests Alice’s location information *outside of said call*, as I discussed above (§VIII.E.2.a.iii, Element [1B])—“they see a view onto Alice’s personal data that is defined by Alice.” Randall, [0512], [0049], [0053], [0067], [0509] (“Bob” is Alice’s “contact” and has “access” to Alice’s “information”). “[T]he server recognis[es] Bob’s device and determin[es] the database access rights which Alice has given him,” and then “[o]nce authenticated, the server passes to Bob’s device the information it requests.” Randall, [0067]. This “enabl[es] authorised people to track the location of the GPS wireless information device by polling the server” which has been “up-dated with the location of” Alice’s device. Randall, p. 24 (Table 4, “People tracking”).

[0291] Thus, Alice’s location information is provided from the i-server to Bob’s device *in accordance with said permission outside of said call*.

Accordingly, it is my opinion that Randall meets Element [1E].

vii. Element [1F] wherein said first wireless device is operable of providing a first map provided with respect to said location.

[0292] “[R]esident on [Randall’s] wireless information device” is a “location application (which gives a user’s location and includes digital maps).” Randall, [0009]. “[Y]our phone can display a map of the area you are standing in.” Randall, p. 29 (“Your map and then some”). Thus, Randall teaches that Alice’s *first wireless device* can provide *a first map with respect to Alice’s location*.

[0293] Additionally, POSAs would have understood Randall’s example of Alice sharing her location with Bob to be a generic example that is equally applicable to Bob sharing his location with Alice. For example, Randall, at [0067] discloses that “Bob also has stored on the server his own personal information,” which would include Bob’s location information. *See also supra* §VIII.E.2.a.ii (explaining that “Alice” and “Bob” are arbitrary examples and every device in Randall has the same capabilities). Randall also teaches that any “user must be able to switch location information on for a person or group of people..., i.e. being able to select the person and allow access” to make the user’s device’s location “[v]isible to specific people (or groups) for a specific period of time”—

e.g., “for the half hour that the group of friends are trying to locate each other in town.” Randall, [0144], [0136], [0143]. Thus, like Alice, Bob can also “choose to subscribe to [the] service which allowed others to track his...location,” and Alice’s “‘map’ application...could show [Alice’s] position on digital maps and...also show the position of” Bob. Randall, [0021]. This is another way Alice’s *first wireless device* can provide a *first map with respect to Alice’s location* (and also showing Bob’s location).

[0294] Thus, it is my opinion that Randall meets Element [1F].

b. Claim 2: The system of claim 1, wherein said first and second wireless devices are wireless telephones.

[0295] Randall’s “*wireless* information device[s]”—including Alice’s and Bob’s devices—can be “radio *telephones*” or “smart *phones*,” which are *wireless telephones*. Randall, [0002], [0491] (“Bob’s...mobile *phone*”), [0495] (“Alice’s *phone*”). Thus, it is my opinion that Randall meets claim 2.

c. Claim 3: The system of claim 1, wherein said second wireless device displays a map with a location marker associated with said location.

[0296] In Randall’s system, once Alice “has subscribed to the location service, then [Alice’s] friends[] [such as Bob] could add a ‘*map*’ application to their own devices, which could show their position on digital *maps* and...also show the position of the user [Alice].” Randall, [0021]. Thus, Bob’s *second wireless device displays a map with Alice’s location*. POSAs would have

understood that “show[ing]” Alice’s “position” on the map (Randall, [0021]) involves displaying *a location marker associated with said location*, because the position is a *location* and showing it would involve displaying a *marker*.

[0297] Alternatively, it would have been an obvious implementation of Randall’s above disclosure to show Alice’s location on the map by displaying *a location marker* at that location on the map, because as I discussed above (with corroboration) displaying a marker was well-known in POSAs’ background knowledge as a beneficial and commonly used option for representing a location of interest (including a current location of a person’s wireless device) on a digital map (e.g., to save screen real estate). *See supra* §VIII.A.2.a.vii (Ground 1, [1F]) (citing Wollrab, 4:40-58, FIG. 4B (markers 44-2 through 44-5); Meadows, FIGs. 4B, 5B; Grube, 4:38-57, 6:14-27, 6:59-7:6; Sheha, 4:52-58, 6:51-56, 9:23-39, FIG. 5); §VIII.A.2.c (Ground 1, claim 3) (same).

[0298] Thus, it is my opinion that Randall meets claim 3.

- d. **Claim 6: The system of claim 1, wherein said permission is operable of being removed, by said first wireless device, for said second wireless device to obtain said location.**

[0299] As I discussed above (§VIII.A.2.a.iv, Element [1C]), Alice’s *first wireless device* provides Bob *permission* to obtain her location by specifying his access rights to the location field in her i-server database. Alice can make this information “[v]isible to specific people (or groups) for a specific period of time.

(i.e. Location information).” Randall, [0136]. Randall teaches that in “a simple step,” Alice can “change a visibility setting, in particular location information.” Randall, [0141]. Alice can “switch location information on for a person” (e.g., for Bob) “for a specific period of time, i.e. for the half hour that the group of friends are trying to locate each other in town,” and “[a]t the end of the pre-defined period the location information” can “again become invisible.” Randall, [0143]-[0144]. Thus, by pre-defining a period of time after which Bob’s access to Alice’s location ends, Alice’s *first wireless device* can remove *said permission* for Bob’s *second wireless device* to obtain Alice’s location.

[0300] Thus, it is my opinion that Randall meets claim 6.

- e. **Claim 7: The system of claim 1, wherein said location is determined by a positioning system that receives signals from a plurality of positioning satellites, said location is updated by said positioning system, and said updated location is provided to said remote system.**¹⁵

[0301] Randall’s wireless device uses “GPS” to determine its location and provide it to the i-server. Randall, p. 24 (Table 4: “People tracking”), p. 22 (Table 1: “GPS location”), p. 29 (“Route finder”). As the ’418 patent admits, it was prior-art “background” knowledge that “GPS” stands for “global positioning

¹⁵ Claim 7 as originally issued referred to a “facility” rather than the “remote system,” but was changed to “remote system” in a certificate of correction. EX1001, p. 29.

system” and is *a positioning system that receives signals from a plurality of positioning satellites*. EX1001, 1:21-27.

[0302] It was part of a POSA’s background knowledge that GPS was a positioning system based on receiving signals from a plurality of positioning satellites. My testimony regarding POSAs’ background knowledge in this regard is corroborated by evidence discussed below:

[0303] For example, Sandhu (EX1016) describes that a position of a GPS receiver is determined using triangulation. Sandhu, [0004] (“A **GPS** receiver retrieves the **positioning information from the GPS satellites** and **triangulates the information** [i.e., uses signals received from multiple satellites] to obtain the position of the receiver.”), [0020] (“Processor 16-i uses triangulation to convert the GPS code sequences to preliminary location data”).

[0304] In another example, Thomas (EX1019) describes using GPS to determine a location of a mobile unit by obtaining “distances [of the mobile unit] to **a plurality of global positioning satellites** or can be a determined location from processing of the distances.” Thomas, 3:26-29.

[0305] As another example, Murphy (EX1020) discloses that GPS uses “**multiple satellites [to] transmit position and time information** which is ... processed to determine the time and location at the user station.” Murphy, 1:9-13.

[0306] As another example, Divakaruni (EX1021) discusses as background information that GPS receivers receive transmissions from multiple satellites from which location information is computed “using known triangulation techniques.” Divakaruni, 1:29-59.

[0307] Randall’s “I-server [*remote system*] is ***up-dated with the location***” which is “obtained via a GPS wireless information device [*said positioning system*], which transmits location information to the i-server,” allowing the updated location to be “track[ed]” as it changes, as is “useful for tracking children and pets.” Randall, p. 24 (Table 4, “People tracking”). Thus, Alice’s GPS location in Randall *is updated by said positioning system, and said updated location is provided to said remote system.*

[0308] Thus, it is my opinion that Randall meets claim 7.

- f. **Claim 8: The system of claim 1, wherein said second wireless device is operable of being alerted when said first wireless device is within a distance of said second wireless device.**

[0309] Randall provides an “Old buddy finder” service by which Bob’s “[w]ireless information device ***alerts*** Bob when a contact happens to be ***within a defined proximity*** (e.g. Bob and Alice are both in the same foreign city and didn’t know it).” Randall, p. 24. As I discussed above (§§VIII.A.2.a.ii-vii), Bob’s and Alice’s locations are provided through the i-server; thus POSAs would have understood that the i-server is involved in alerting Bob’s *second wireless device*

that the location of Alice’s *first wireless device* is within the defined *distance* of Bob’s device’s location, or at least it would have been obvious to implement the system to alert Bob’s device this way because the i-server receives and provides location data. Thus, it is my opinion that Randall meets claim 8.

g. Claim 9:

i. Element [9A] a first dating matching profile is operable of being provided by said first wireless device;

[0310] Randall’s system enables any user, including Alice, to provide via her *first wireless device* a virtual profile to share information about herself. Randall, [0118] (“Identity allows people *to share information about themselves using their wireless information devices*—i.e. it is a mechanism for establishing a virtual identity by posting information onto an extensible database.”). Via Randall’s “New buddy finder” service, “[c]ompatible personal profiles stored on the I-server can be readily identified and the corresponding individuals alerted to their mutual presence at a party, club etc.” Randall, p. 24 (Table 4). In this context where personal profiles are shared and matched based on whether they are “compatible,” POSAs would have understood that Alice’s profile functions as *a first dating matching profile*. Thus, it is my opinion that Randall meets Element [9A].

- ii. **Element [9B] a second dating matching profile is operable of being provided by said second wireless device;**

[0311] For the same reasons I discussed above for Element [9A] (§VIII.E.2.g.i) that Alice’s personal profile is *a first data matching profile* that is *operable of being provided by Alice’s first wireless device*, Bob’s personal profile is *a second dating matching profile provided by said second wireless device* in Randall’s “New buddy finder” application. Randall, p. 24 (Table 4). Thus, it is my opinion that Randall meets Element [9B].

- iii. **Element [9C] a second location is operable of being obtained, wherein said second location is the location of said second wireless device; and**

[0312] As I discussed above for Element [1F] (§VIII.E.2.a.vii), Bob’s *second wireless device*, like Alice’s device, can provide its location for sharing via the i-server. Thus, it is my opinion that Randall meets Element [9C].

- iv. **Element [9D] said location, said second location, said first dating matching profile, and said second dating matching profile is operable of being utilized to provide an alert.**

[0313] Via Randall’s “New buddy finder” service, “[c]ompatible personal profiles stored on the I-server can be readily identified and the corresponding individuals *alerted* to their mutual presence at a party, club etc.” Randall, p. 24 (Table 4). *Said location* and *said second location* are utilized to determine that Alice and Bob are mutually present at a place, and their two *dating*

matching profiles (said first and second dating matching profile) are utilized to determine that they are compatible, to provide the alert to their devices. POSAs would have understood that this can be done whether or not Alice and Bob are already contacts of each other, as even people who are contacts may not realize how compatible their profiles are, and/or may appreciate an alert that a compatible contact is nearby for meeting up. Thus, it is my opinion that Randall meets Element [9D].

- h. Claim 10: The system of claim 1, wherein a second location is associated with said second wireless device and said location of said first wireless device is displayed relative to said second location of said second wireless device.**

[0314] As I discussed above for Element [1F] (§VIII.E.2.a.vii) and claim 3 (§VIII.E.2.c), Bob’s *second wireless device* can “show [Bob’s] position on digital maps and...also show the position of” [Alice]. Randall, [0021]. In this map, *said location of Alice’s first wireless device is displayed relative to said second location of Bob’s second wireless device*. Thus, it is my opinion that Randall meets claim 10.

- i. Claim 13: The system of claim 1, wherein said permission is assigned for a period of time.**

[0315] As I discussed above for claim 6 (§VIII.E.2.d), Alice can specify that the *permission* provided by her *first wireless device* makes her “[l]ocation information” “[v]isible to specific people” (e.g., to Bob) “*for a specific*

period of time” such as “the half hour that the group of friends are trying to locate each other in town.” Randall, [0136], [0143]. “At the end of the pre-defined period the location information” can “again become invisible.” Randall, [0144]. Thus, it is my opinion that Randall meets claim 13.

j. Claim 14: The system of claim 1, wherein said second wireless device is operable of being alerted when said first wireless device enters a geographic region.

[0316] In Randall’s “Old buddy finder” service, Bob’s “[w]ireless information device *alerts* Bob when a contact happens to be within a defined proximity (e.g. Bob and Alice are both *in the same foreign city* and didn’t know it).” Randall, p. 24. As I discussed above §VIII.E.2.d, Bob’s and Alice’s locations are provided through the i-server; thus POSAs would have understood that the i-server is involved in alerting Bob’s *second wireless device* that the location of Alice’s *first wireless device* has entered the same *geographic region* (e.g., city) as Bob’s device’s location, or at least it would have been obvious to implement the system to alert Bob’s device this way because the i-server receives and provides location data. Thus, it is my opinion that Randall meets claim 14.

k. Claim 18

[0317] As explained in this section below, in my opinion a POSA would have understood that Randall meets all limitations of claim 18 of the ’418 patent, and therefore renders claim 18 unpatentable. Claim elements [18B], [18C],

[18E], [18G], [18H], and [18J] repeat limitations of other elements of claim 18, but with the perspective of the “*second wireless device*” replacing that of the “*first wireless device*” and vice-versa. Thus, claim 18 adds that, like the *first wireless device*, the *second wireless device* has a location operable of being determined, provided to a server, requested by and provided to the *first wireless device* as a result of a permission provided by the *second wireless device* and stored on the server. As I discussed above (§VIII.E.2.a.ii, §VIII.E.2.a.vii) a POSA would have understood that in Randall’s system, any of the functionality that Randall discloses and/or renders obvious for performance by one wireless device (e.g., Alice’s device) can equally be performed by any other wireless device (e.g., Bob’s device), and that Randall discusses Alice and Bob as arbitrary and generic examples of wireless device functionality in Randall’s system. *See, e.g.*, Randall, [0053] (“Consider Alice...and Bob”—language introducing Alice and Bob as generic examples), [0510] (“Bob’s details” are downloaded to “Alice’s...device” just as “Alice’s contact” is provided to “Bob’s device[.]”), [0144] (“The user” (generic to Alice or Bob) “must be able to switch location information on for a person or group of people”). Even if Randall had not explicitly taught this, it would have been an obvious implementation option to allow any wireless device users to subscribe to the same functionality (including contacts functionality and location functionality) in Randall’s system, to provide flexibility and allow each subscriber

to choose and access the functionality that appeals to them. Randall meets the Elements of Claim 18 for the reasons explained below.

i. Element [18PRE]: A system comprising:

[0318] Claim 18’s preamble simply recites “A system comprising.” I understand that the preamble is not necessarily limiting. In this case, whether or not it is limiting does not affect my opinion as Randall discloses the preamble. Randall discloses a system that provides access control for a wireless device user to track the location of another wireless device user. Thus, Randall meets [18PRE] for the same reasons I discussed in relation to [1PRE]. *See supra* §VIII.E.2.a.i ([1PRE]).

ii. Element [18A]: a first wireless device, wherein a first location of said first wireless device is operable of being determined,

[0319] Both Elements [1A] and [18A] involve a “*first wireless device* wherein a “*location of said first wireless device is operable of being determined.*” Thus, it is my opinion that Randall meets Element [18A] for the same reasons Randall meets Element [1A], as discussed above (§VIII.E.2.a.ii).

iii. Element [18B]: a second location of a second wireless device is operable of being determined,

[0320] As I discussed above for claim 10 (§VIII.E.2.h), Randall meets “*a second location is associated with said second wireless device*” and thus that location “*is operable of being determined.*” *See also supra* §VIII.E.2.a.vii

(Element [1F]: where I demonstrate that Randall meets “said first wireless device is operable of providing a first map provided with respect to said location”); §VIII.E.2.g.iii (Element [9C]: where I demonstrate that Randall meets “a second location is operable of being obtained, wherein said second location is the location of said second wireless device”). As I discuss above (§VIII.E.2.k), a POSA would have understood that in Randall’s system, any of the functionality that Randall discloses and/or renders obvious for performance by one wireless device (e.g., Alice’s device) can equally be performed by any other wireless device (e.g., Bob’s device), and that Randall discusses Alice and Bob as arbitrary and generic examples of wireless device functionality in Randall’s system and, alternatively, it would have been an obvious implementation option to allow any wireless device users to subscribe to the same functionality (including contacts functionality and location functionality) in Randall’s system.

[0321] Thus, it is my opinion that Randall meets Element [18B] for the same reasons Randall meets claim 10.

iv. Element [18C]: said first and second locations are operable of being provided to a server, wherein said server is located remotely from said first and second wireless devices,

[0322] As I discussed above for Element [1A] (§VIII.E.2.a.ii), Randall meets the location of the first wireless device (“*first...location[]*”) is “*provided to a remote system,*” which is Randall’s i-server. The location of the second wireless

device is provided to Randall's i-server for the same reason. Randall, [0009], [0021], [0028], [0030], [0053], [0116]-[0136], [0503]-[0512], p. 24 (Table 4, "People Tracking"). Indeed, as I discuss above (§VIII.E.2.k), a POSA would have understood that in Randall's system, any of the functionality that Randall discloses and/or renders obvious for performance by one wireless device (e.g., Alice's device) can equally be performed by any other wireless device (e.g., Bob's device), and that Randall discusses Alice and Bob as arbitrary and generic examples of wireless device functionality in Randall's system and, alternatively, it would have been an obvious implementation option to allow any wireless device users to subscribe to the same functionality (including contacts functionality and location functionality) in Randall's system.

[0323] As I discussed above for Element [1D] (§VIII.E.2.a.v), Randall's i-**server** is "*located remotely from said first and second wireless devices.*"

[0324] Thus, it is my opinion that Randall meets Element [18C] for the same reasons Randall meets Element [1A] (*supra* §VIII.E.2.a.ii) and Element [1D] (*supra* §VIII.E.2.a.v).

- v. **Element [18D]: said first location is operable of being requested by said second wireless device outside of a call for communication between said first wireless device and said second wireless device,**

[0325] Element [18D] recites similar limitations as Element [1B], but refers to “*said first location*” rather than “*said location of said first wireless device*.” Thus, it is my opinion that Randall meets Element [18D] for the same reasons as Element [1B] (*supra* §VIII.E.2.a.iii).

- vi. **Element [18E]: said second location is operable of being requested by said first wireless device**

[0326] Element [18E] is similar to Element [18D] except Element [18E] is about the “*second location*” “*being requested by said first wireless device*” whereas Element [18D] is about the “*first location*” “*being requested by said second wireless device*.” In other words, Element [18E] is from the perspective of the “*second wireless device*” replacing that of the “*first wireless device*.” As I discussed above (§VIII.E.2.k), a POSA would have understood that any of the functionality that Randall discloses and/or renders obvious for performance by one wireless device (e.g., Alice’s device) can equally be performed by any other wireless device (e.g., Bob’s device), and that Randall discusses Alice and Bob as arbitrary and generic examples of wireless device functionality in Randall’s system and, alternatively, it would have been an obvious implementation option to allow any wireless device users to subscribe to the same

functionality (including contacts functionality and location functionality) in Randall's system. E.g., Randall, [0067] ("Bob also has stored on the server his own personal information"). Thus, it is my opinion that Randall meets Element [18E] for the same reasons as Element [18D] (*supra* §VIII.E.2.k.vi), applied to the "second location" and "first wireless device."

vii. Element [18F]: a first permission is operable of being provided by said first wireless device for said second wireless device to obtain said first location

[0327] While Element [1C] recites "*a permission*" "*to access location information about said location,*" Element [18F] recites "*a first permission*" "*to obtain said first location.*" Thus, it is my opinion that Randall meets Element [18F] for the same reasons as Element [1C] (*supra* §VIII.E.a.iv).

viii. Element [18G]: a second permission is operable of being provided by said second wireless device for said first wireless device to obtain said second location

[0328] Element [18G] is similar to Element [18F] except Element [18G] is about "*a second permission*" "*provided by said second wireless device*" for the "*first wireless device to obtain said second location*" whereas Element [18F] is about the "*first permission*" "*to obtain said first location.*" In other words, Element [18G] is from the perspective of the "*second wireless device*" replacing that of the "*first wireless device*" and vice-versa. As I discussed above (§VIII.E.2.k), a POSA would have understood that any of the functionality that

Randall discloses and/or renders obvious for performance by one wireless device (e.g., Alice’s device) can equally be performed by any other wireless device (e.g., Bob’s device), and that Randall discusses Alice and Bob as arbitrary and generic examples of wireless device functionality in Randall’s system and, alternatively, it would have been an obvious implementation option to allow any wireless device users to subscribe to the same functionality (including contacts functionality and location functionality) in Randall’s system. E.g., Randall, [0067] (“Bob also has stored on the server his own personal information”). Thus, it is my opinion that Randall meets Element [18G] for the same reasons as Element [18F] (*supra* §VIII.E.2.k.vii), applied to a “*second permission*” and “*said second location*.”

ix. Element [18H]: said first and second permissions are operable of being stored on said server,

[0329] While Element [1D] refers only to Element [1C]’s “*permission*” is “*operable of being stored on said server*,” Element [18H] recites the “*first and second permissions are operable of being stored on said server*.” As I discussed above (§VIII.E.2.k), a POSA would have understood that any of the functionality that Randall discloses and/or renders obvious for performance by one wireless device (e.g., Alice’s device) can equally be performed by any other wireless device (e.g., Bob’s device), and that Randall discusses Alice and Bob as arbitrary and generic examples of wireless device functionality in Randall’s system and, alternatively, it would have been an obvious implementation option to allow any

wireless device users to subscribe to the same functionality (including contacts functionality and location functionality) in Randall’s system. E.g., Randall, [0067] (“Bob also has stored on the server his own personal information”). Thus, it is my opinion that Randall meets Element [18H] for the same reasons as Element [1D] (*supra* §VIII.E.2.a.v), applied to both “*first and second permissions*.”

- x. **Element [18I]: said first location from said server is operable of being provided to said second wireless device as a result of said first permission outside of said call,**

[0330] While Element [1E] recites “*said location information about said location is operable of being provided from said remote system to said second wireless device **in accordance with** said permission outside of said call,*” Element [18I] similarly recites “*said first location from said server is operable of being provided to said second wireless device **as a result of** said first permission outside of said call.*” Thus, it is my opinion that Randall meets Element [18I] for the same reasons as Element [1E] (*supra* §VIII.E.2.a.vi).

- xi. **Element [18J]: and said second location is operable of being provided from said server to said first wireless device as a result of said second permission,**

[0331] Element [18J] is similar to Element [18I] except Element [18J] is about “***second** location*” “*provided... to said **first** wireless device as a result of said **second** permission*” whereas Element [18F] is about “***first** location*” “*provided... to said **second** wireless device as a result of said **first** permission.*” In

other words, Element [18J] is from the perspective of the “second wireless device” replacing that of the “first wireless device” and vice-versa. As I discussed above (§VIII.E.2.k), a POSA would have understood that any of the functionality that Randall discloses and/or renders obvious for performance by one wireless device (e.g., Alice’s device) can equally be performed by any other wireless device (e.g., Bob’s device), and that Randall discusses Alice and Bob as arbitrary and generic examples of wireless device functionality in Randall’s system and, alternatively, it would have been an obvious implementation option to allow any wireless device users to subscribe to the same functionality (including contacts functionality and location functionality) in Randall’s system. E.g., Randall, [0067] (“Bob also has stored on the server his own personal information”). Thus, it is my opinion that Randall meets Element [18J] for the same reasons as Element [18I] (*supra* §VIII.E.2.k.x), applied to the “*second location*” and “*second permission*.”

xii. Element [18K]: wherein said first wireless device is operable of providing a first map from a perspective of said first wireless device.

[0332] While Element [1F] recites “*said first wireless device is operable of providing a first map provided **with respect to said location***” (which is the “*location of said first wireless device*,” see Element [1A]), Element [18K] recites the map is “***from a perspective of said first wireless device***” recites similar

limitations as Element [1F]. Thus, it is my opinion that Randall meets Element [18K] for the same reason Shema meets Element [1F] (*supra* §VIII.E.2.a.vii).

I. Claim 19

[0333] As explained in this section below, in my opinion a POSA would have understood that Randall meets all limitations of claim 19 of the '418 patent, and therefore renders claim 19 unpatentable.

i. Element [19PRE]: A system comprising:

[0334] Claim 19's preamble simply recites "A system comprising". I understand that the preamble is not necessarily limiting. In this case, whether or not it is limiting does not affect my opinion as Randall discloses the preamble. Randall discloses a system that provides access control for a wireless device user to track the location of another wireless device user. Thus, Randall meets [19PRE] for the same reasons I discussed with respect to [1PRE]. *See supra* §VIII.E.2.a.i ([1PRE]).

ii. Element [19A]: a first wireless device operable of determining a first location of said first wireless device,

[0335] Element [19A] is similar to Element [1A] except Element [19A] says the "*first wireless device operable of determining*" a location of the "*first wireless device.*" As I discussed above for Element [1A] (§VIII.E.2.a.ii), Randall discloses that wireless devices determine their location and provide it to Randall's i-server. E.g., Randall, p. 24 (Table 4, "People tracking"). Thus, it is

my opinion that Randall meets Element [19A] for the same reasons Randall meets Element [1A] (*supra* §VIII.E.2.a.ii).

iii. Element [19B]: a second location of a second wireless device, is operable of being determined,

[0336] Element [19B] recites the same limitation as recited in Element [18B]. Thus, it is my opinion that Randall meets Element [19B] for the same reason Randall meets Element [18B] (*supra* §VIII.E.2.k.iii).

iv. Element [19C]: said first and second locations are operable of being provided to a server, said server is located remotely from said first and second wireless devices,

[0337] Element [19C] recites the same limitation as recited in Element [18C]. Thus, it is my opinion that Randall meets Element [19C] for the same reason Randall meets Element [18C] (*supra* §VIII.E.2.k.iv).

v. Element [19D]: said first location is operable of being requested by said second wireless device outside of a call for communication between said first wireless device and said second wireless device,

[0338] Element [19D] recites similar limitations as Element [1B]. Thus, it is my opinion that Randall meets Element [19D] for the same reason Randall meets Element [1B] (*supra* §VIII.E.2.a.iii).

vi. Element [19E]: said second location is operable of being requested by said first wireless device,

[0339] Element [19E] recites the same limitation as recited in Element [18E]. Thus, it is my opinion that Randall meets Element [19E] for the same reason Randall meets Element [18E] (*supra* §VIII.E.2.k.vi).

vii. Element [19F]: a first permission is operable of being provided by said first wireless device for said second wireless device to obtain said first location,

[0340] Element [19F] recites similar limitations as Element [1C], but Element [19F] refers to “*a **first permission***” “*to **obtain** said first location*” whereas Element [1C] refers to “*a permission*” “*to **access** said location,*” which is a location obtained by the second wireless device. Thus, it is my opinion that Randall meets Element [19F] for the same reason Randall meets Element [1C] (*supra* §VIII.E.2.a.iv).

viii. Element [19G]: a second permission is operable of being provided by said second wireless device for said first wireless device to obtain said second location,

[0341] Element [19G] recites the same limitation as Element [18G]. Thus, it is my opinion that Randall meets Element [19G] for the same reasons Randall meets Element [18G] (*supra* §VIII.E.2.k.viii).

- ix. Element [19H]: said first and second permissions are operable of being stored on said server,**

[0342] Element [19H] recites the same limitation as Element [18H].

Thus, it is my opinion that Randall meets Element [19H] for the same reasons

Randall meets Element [18H] (*supra* §VIII.E.2.k.ix).

- x. Element [19I]: said first location is operable of being provided from said server to said second wireless device as a result of said first permission outside of said call,**

[0343] Element [19I] recites similar limitations as Element [1E], but

Element [19I] refers to “*said **first** location*” “*provided...to said **second** wireless*

*device as a result of said **first** permission*” whereas Element [1E] refers to “*said*

location” “*provided...to said **second** wireless device in accordance with **said***

permission.” Thus, it is my opinion that Randall meets Element [19I] for the same

reason Randall meets Element [1E] (*supra* §VIII.E.2.a.vi).

- xi. Element [19J]: said second location is operable of being provided from said server to said first wireless device as a result of said second permission,**

[0344] Element [19J] recites similar limitations as Element [18J].

Thus, it is my opinion that Randall meets Element [19J] for the same reason

Randall meets Element [18J] (*supra* §VIII.E.2.k.xi).

xii. Element [19K]: updates of said first location are operable of being provided to said second wireless device as a result of said first permission, and

[0345] As I discussed above (§VIII.E.2.a.iii, [1B]), as Alice’s data changes (e.g., as “[t]he I-server is up-dated” with Alice’s current location), “Bob can pull the new data into his device” by “polling the server.” Randall, p. 24 (Table 4, “People tracking”), [0053]. Alternatively, “the new data can be automatically pushed to Bob” at his *second wireless device*. Randall, [0053]. This “enabl[es] *authorised people* to track the location of” Alice’s device. Randall, p. 24 (Table 4, “People tracking”). As I discussed above for Elements [1C]-[1E] (§§VIII.E.2.a.iv-vi), Alice’s location information is only provided to Bob’s device *as a result of said first permission* having been provided by Alice. Thus, it is my opinion that Randall meets Element [19K].

xiii. Element [19L]: updates of said second location are operable of being provided to said first wireless device as a result of said second permission

[0346] Randall meets [19L] for the same reasons as Element [19K] because, as I discussed above §VIII.E.2.k, a POSA would have understood that in Randall’s system, any of the functionality that Randall discloses and/or renders obvious for performance by one wireless device (e.g., Alice’s device) can equally be performed by any other wireless device (e.g., Bob’s device), and that Randall discusses Alice and Bob as arbitrary and generic examples of wireless device functionality in Randall’s system. Thus, it is my opinion that Randall meets

Element [19L]. *See, e.g.,* Randall, [0053], [0144], [0510] (all of which I discussed above for claim 18 (§VIII.E.2.k)).

xiv. Element [19M]: wherein said first wireless device is operable of providing a first map from a perspective of said first location.

[0347] Element [19M] recites similar limitations as Element [1F], except Element [19M] refers to “*said first location*” whereas Element [1F] refers to “*said location.*” Thus, it is my opinion that Randall meets Element [19M] for the same reasons as Element [1F] (*supra* §VIII.E.2.a.vii).

m. Claim 20: The system of claim 18, wherein said first and second wireless devices are wireless telephones.

[0348] Claim 20 recites similar limitations as claim 2. Thus, it is my opinion that Randall meets claim 20 for the same reason Randall meets claim 2 (*supra* §VIII.E.2.b).

n. Claim 21: The system of claim 18, wherein said second wireless device displays a map with a location marker associated with said first location.

[0349] Claim 21 recites similar limitations as claim 3, except claim 21 refers to “*said **first** location*” whereas claim 3 refers to “*said location,*” which is the location of the first wireless device (*see* Element [1B]). Thus, it is my opinion that Randall meets claim 21 for the same reason Randall meets claim 3 (*supra* §VIII.E.2.c).

- o. Claim 24: The system of claim 18, wherein said first permission is operable of being removed, by said first wireless device, for said second wireless device to obtain said first location.**

[0350] Claim 24 recites similar limitations as claim 6, except claim 24 refers to “*said **first** permission*” and “*said **first** location*” whereas claim 6 refers to “*said permission*” and “*said location,*” which is the location of the first wireless device (*see* Element [1B]). Thus, it is my opinion that Randall meets claim 24 for the same reason Randall meets claim 6 (*supra* §VIII.E.2.d).

- p. Claim 25: The system of claim 18, wherein said second wireless device is operable of being alerted when said first wireless device is within a distance of said second wireless device.**

[0351] Claim 25 recites similar limitations as claim 8. Thus, it is my opinion that Randall meets claim 25 for the same reason Randall meets claim 8 (§VIII.E.2.f).

- q. Claim 26: The system of claim 19, wherein said first and second wireless devices are wireless telephones.**

[0352] Claim 26 recites similar limitations as claim 2. Thus, it is my opinion that Randall meets claim 26 for the same reason Randall meets claim 2 (*supra* §VIII.E.2.b).

- r. **Claim 27: The system of claim 19, wherein said second wireless device displays a map with a location marker associated with said first location.**

[0353] Claim 27 recites similar limitations as claim 3, except claim 27 refers to “*said **first** location*” whereas claim 3 refers to “*said location,*” which is the location of the first wireless device (*see* Element [1B]). Thus, it is my opinion that Randall meets claim 27 for the same reasons Randall meets claim 3 (*supra* §VIII.E.2.c).

- s. **Claim 30: The system of claim 19, wherein said first permission is operable of being removed, by said first wireless device, for said second wireless device to obtain said first location.**

[0354] Claim 30 recites similar limitations as claim 6, except claim 30 refers to “*said **first** permission*” and “*said **first** location*” whereas claim 6 refers to “*said permission*” and “*said location,*” which is the location of the first wireless device (*see* Element [1B]). Thus, it is my opinion that Randall meets claim 30 for the same reason Randall meets claim 6.

F. Ground 6: Claim 12 Would Have Been Obvious over Randall in View of De-Vries

[0355] As explained in this section below, in my opinion claim 12 of the '418 patent would have been obvious to a POSA in view of the combined teachings of Randall (EX1007) and De-Vries (EX1013).

[0356] Above, I provided a discussion of Randall (§VIII.E.1).

1. Discussion of De-Vries (EX1013)

[0357] De-Vries relates to “notifications to inform when certain people (e.g., friends, family, business contacts, etc.) are nearby” based on “devices carried by the people” such as “cell phone[s].” De-Vries, Abstract, 2:21-26. In De-Vries, a device’s “user can set rules and/or parameters to control when notifications are generated”—“[f]or example, a user may set a proximity parameter designating that notifications are provided only when the other users on his or her buddy list are within a certain proximity.” De-Vries, 2:52-59. “[T]he user can segregate” their contacts “into separate subsets, such as subsets of family, friends, business contacts, co-workers, etc.” and “set the rules and/or parameters that control notifications to also be based on the subset of the other user who moved.” De-Vries, 3:5-14.

2. Randall-De-Vries Combination

[0358] As I discussed above (§VIII.E.1), Randall, like De-Vries, provides notifications via wireless devices when certain contacts are nearby, including via Randall’s “Old buddy finder” service. To the extent that Randall does not specify that the user receiving these location alerts can set the rules/parameters for receiving the alerts with respect to the proximity of particular other device users, a POSA would have been motivated to implement Randall’s service that way based on De-Vries’s teachings, to provide the user with control

over what alerts they receive and about whom they receive alerts. A POSA would have reasonably expected success based on De-Vries's teachings of successfully implementing such functionality in a system similar to Randall's where wireless device users are accessing each other's locations. *See supra* §VIII.F.1 (discussing De-Vries).

3. Mapping of Randall-De-Vries Combination to Claim 12

- a. Claim 12: The system of claim 1, wherein said second wireless device is operable of being allowed to set location alerts associated with said first wireless device.**

[0359] The Randall-De-Vries combination implements De-Vries's teachings allowing the alert recipient to set the rules/parameters for being alerted when a particular other user's location is in proximity. De-Vries, Abstract, 2:21-26, 2:52-59, 3:5-14. Thus, in the Randall-De-Vries combination, the *second wireless device is allowed to set location alerts associated with said first wireless device*. Accordingly, it is my opinion that Randall-De-Vries meets claim 12.

G. Ground 7: Claims 3, 10, 15-17, 21, 27 Would Have Been Obvious over Randall in View of Wollrab

[0360] As explained in this section below, in my opinion claims 3, 10, 15-17, 21, and 27 of the '418 patent would have been obvious to a POSA in view of the combined teachings of Randall (EX1007) and Wollrab (EX1014).

[0361] Above, I provided a discussion of Randall (§VIII.E.1).

1. Wollrab (EX1014)

[0362] Wollrab relates to “members of an identified family, work, or other group” tracking each other’s wireless device GPS locations “as coordinates on a graphic map.” Wollrab, 5:50-61, 6:28-31. The tracked device locations are “shown simultaneously relative to one another” as “symbols” on the map on each wireless device. Wollrab, 4:40-58, FIG. 4B (symbols 44-1 through 44-5). Wollrab further describes storing and displaying on the graphic map “a historical tracking record of movement for” a tracked device. Wollrab, 3:21-27, 4:54-58.

2. Randall-Wollrab Combination

[0363] Like Wollrab, Randall teaches that users can “add *a ‘map’ application* to their own devices, which could show their position on digital maps and also, by using the location attribute of the user's data object, it could also show the position of the user.” Randall, [0021]. A POSA would have recognized Wollrab’s techniques as beneficial for implementing Randall’s teaching of showing the positions of the tracking and tracked users on a map, in an intuitive manner that would be easily comprehensible to the tracking user, and in a way that allows historical tracking records to be used to help trace where a device has been and locate a device whose tracking has been lost as Wollrab describes. Wollrab, 3:21-27, 4:40-58. The POSA would have had a reasonable expectation of success in the combination because Wollrab teaches a system operating in the proposed

manner in the same context as Randall’s – that is, the contact of wireless devices tracking and mapping each other’s locations. *See supra* §VIII.G.1 (discussing Wollrab).

3. Mapping Randall-Wollrab Combination to Claims 3, 10, 15-17, 21, 27

a. Claim 3: The system of claim 1, wherein said second wireless device displays a map with a location marker associated with said location.

[0364] In the Randall-Wollrab combination (*supra* §VIII.G.2), the map displayed on Bob’s *second wireless device* (discussed *supra* §VIII.E.2.c (Ground 5, claim 3)) uses *a location marker* to show Alice’s location, based on Wollrab’s teaching to provide “symbols” on the map to indicate both the tracking wireless device’s location (44-1, annotated green below) and the locations of other wireless devices being tracked (44-2 to 44-5, annotated red below). Wollrab, 4:40-58, FIG. 4B (below with annotations to symbols 44-1 through 44-5). Thus, it is my opinion that Randall-Wollrab meets claim 3.

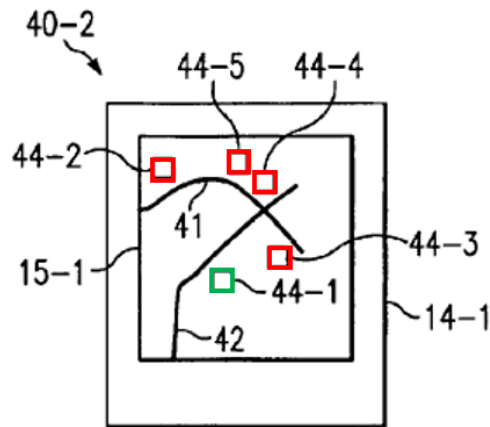


FIG. 4B

Wollrab, FIG. 4B (annotated)

- b. **Claim 10: The system of claim 1, wherein a second location is associated with said second wireless device and said location of said first wireless device is displayed relative to said second location of said second wireless device.**

[0365] In the Randall-Wollrab combination, the map displayed on Bob's *second wireless device* (which I discussed above (§VIII.E.2.c)) shows Alice's location relative to Bob's location, based on Wollrab's teaching to display on the map the locations of other wireless devices being tracked (44-2 to 44-5, annotated red below) relative to the tracking wireless device's location (44-1, annotated green below). Wollrab, 4:40-58, FIG. 4B (symbols 44-1 through 44-5). Thus, it is my opinion that Randall-Wollrab meets claim 10.

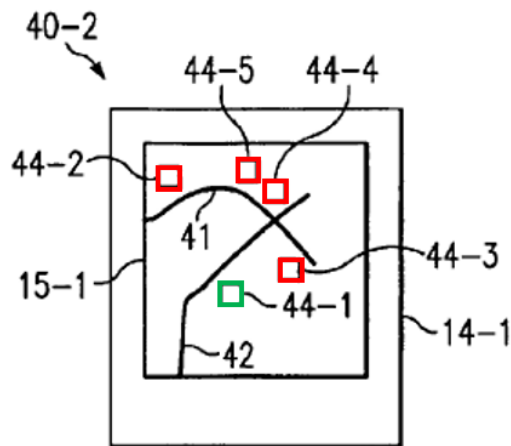


FIG. 4B

Wollrab, FIG. 4B (annotated)

- c. **Claim 15: The system of claim 1, wherein said facility stores a history of locations for said first wireless device.**

[0366] The Randall-Wollrab combination implements Wollrab's teaching that "multiple sequential sets of remote sensing location coordinates are stored...to create a *historical tracking record of movement*" that "can be retrieved later to determine where a [wireless] device has been physically located over time for such purposes as tracking member movements or locating a lost member." Wollrab, 3:21-27, 4:54-58 ("In map image 40-3 symbols interconnected with location 44-5 depict *sequential historical locations* of...device 14-5 relative to location 44-1 of...device 14-1...."). POSAs would have reasonably expected success because Randall's i-server already receives, stores, and provides updates of a device's location, as I discussed above (§§VIII.E.2.a.ii-vii).

[0367] Wollrab's wireless devices share their locations with each other via a remote system ("[s]atellite device 12"), which "receives, processes and *stores* information sent from individual" devices, including their "physical location" data. Wollrab, 4:1-23. In Randall's system, this functionality is performed by the i-server, as I discussed above ([1A], §VIII.E.2.a.ii; [1B], §VIII.E.2.a.iii; [1E], §VIII.E.2.a.vi). Therefore, a POSA would have been motivated to implement the Randall-Wollrab combination to store the *history of locations* at the i-server, additionally or alternatively to storing it locally at a tracking device, e.g., to offload storage requirements, provide data backup, and/or allow a user to access data from multiple local devices. Moreover, storing a *history of locations* at server-side was a well-known design option.

[0368] My opinion that POSAs would have found storing a *history of locations* at server-side to be a well-known design option is corroborated by Thomas (EX1019), which discloses a history of locations being stored (7:34-49) and that locations are stored and provided "server-side" (5:58-6:37). My opinion is also corroborated by Ganesh (EX1012), which discloses storing a history of location in a call database (7:3-65) and, as shown in Ganesh, FIG. 1, the call database is at a remote server (4:8-28).

[0369] POSAs would have reasonably expected success because Randall's i-server already receives, stores, and provides updates of a device's location, as discussed I discussed above (*supra* [1A]-[1F], §§VIII.E.2.a.ii-vii).

[0370] Thus, it is my opinion that Randall-Wollrab meets claim 15.

- d. **Claim 16: The system of claim 1, wherein said server stores a history of locations for said first wireless device and said history is utilized to provide an approximate location of said first wireless device.**

[0371] As I discussed above (Claim 15, §VIII.G.3.c), the Randall-Wollrab combination implements at the i-server Wollrab's teaching to *store a history of locations* for Alice's *first wireless device* so that the history of locations "can be retrieved later to determine where [the wireless] device has been physically located over time for such purposes as tracking member movements or locating a lost member." Wollrab, 3:21-27, 4:54-58, FIG. 4C.

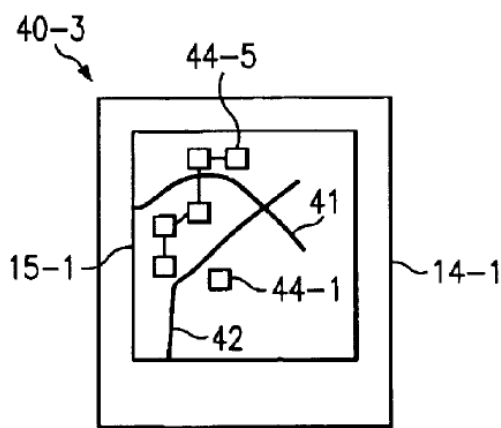


FIG. 4C

Wollrab, FIG. 4C

[0372] POSAs would have understood that the most recent historical location 44-5 and/or an extrapolation of the device's trajectory based on the history *is utilized to provide an approximate location of said first wireless device*, particularly in the scenario Wollrab describes where the device's tracking was "lost" following that trajectory. Wollrab, 3:21-27, 4:54-58, FIG. 4C. Thus, it is my opinion that Randall-Wollrab meets claim 16.

- e. **Claim 17: The system of claim 1, wherein said first wireless device is OFF when said location is provided to said second wireless device.**

[0373] Wollrab teaches that a device's "historical tracking record of movement...can be retrieved later to determine where a...device has been physically located over time for such purposes as...locating a lost member." Wollrab, 3:21-27; *see also* 4:54-58. POSAs would have understood that one typical such "lost member" scenario involves the member's device being "OFF," such as the user intentionally turning the device OFF or the device being off due to a drained battery or other issue. Further, POSAs would have known that when a *second wireless device* obtains the location of a *first wireless device* that is stored at a server as in Randall's system, that enables the *second wireless device* user to determine the location of another user even when that other user is not online or when their mobile telephone or other device is switched off.

[0374] My opinion in that regard is corroborated by Darling (EX1022), which discloses the location of a *first wireless device* that is stored at a server and allows the *second wireless device* “user to determine the location of another user even when that other user is not online or when their mobile telephone or other device is switched off.” Darling, 2:1-12.

[0375] My opinion is further corroborated by Ganesh (EX1022), which discloses obtaining the location of a wireless device from a call records database of a remote MTSO (mobile telephone switching office), based on “the time, date, and identifiers for one of cell sites” and “the section (i.e., directional antenna)” that was “in communication with [a] wireless device” for a previously routed telephone call (thereby allowing the location of an “OFF” device to be obtained from these call records). Ganesh, 6:55-7:20.

[0376] Thus, it is my opinion that Randall-Wollrab meets claim 17.

f. Claim 21: The system of claim 18, wherein said second wireless device displays a map with a location marker associated with said first location.

[0377] Claim 21 recites similar limitations as claim 3, except claim 21 refers to “*said **first** location*” whereas claim 3 refers to “*said location*,” which is the location of the first wireless device (*see* Element [1B]). Thus, it is my opinion that Randall-Wollrab meets claim 27 for the same reason Randall-Wollrab meets claim 3 (*supra* §VIII.G.3.a).

- g. Claim 27: The system of claim 19, wherein said second wireless device displays a map with a location marker associated with said first location.**

[0378] Claim 27 recites similar limitations as claim 3, except claim 27 refers to “*said **first** location*” whereas claim 3 refers to “*said location*,” which is the location of the first wireless device (*see* Element [1B]). Thus, it is my opinion that Randall-Wollrab meets claim 27 for the same reasons Randall-Wollrab meets claim 3 (*supra* §VIII.G.3.a).

H. Ground 8: Claims 4-5, 11, 17, 22-23, 28-29 Would Have Been Obvious over Randall in View of Ryden

[0379] As explained in this section below, in my opinion claims 4-5, 11, 17, 22-23, and 28-29 of the ’418 patent would have been obvious to a POSA in view of the combined teachings of Randall (EX1007) and Ryden (EX1009).

[0380] I provided a discussion of Randall in Section VIII.E.1 above and a discussion of Ryden in Section VIII.B.1 above.

1. Randall-Ryden Combination

[0381] A POSA would have been motivated to incorporate Ryden’s speed and direction determination capabilities, as well as Ryden’s location monitoring for a device that is turned OFF, (both of which I discussed above §VIII.B.1) into Randall’s system to provide such functionality and standard navigation information using Randall’s mapping functionality. Randall teaches that its wireless device can show its own “position on digital maps” and “also show

the position of” another wireless device user. Randall, [0021]. Randall further teaches that this functionality can be used by a “group of friends [who] are trying to locate each other in town.” Randall, [0143]. POSAs would have known that a person meeting another person who is using a mobile device and may be moving would want to know about the other person’s movement, such as where they are heading and how fast, as I discussed above (§VIII.B.2). POSAs would have understood that such functionality would help mobile device users more efficiently meet. Further, because Ryden operates in a similar environment as Randall using similar location information, a POSA would have had a reasonable expectation of success to integrate Ryden’s functionality into Randall’s system.

2. Mapping of Randall-Ryden Combination to Claims 4-5, 11, 17, 22-23, 28-29

[0382] As explained in this section below, in my opinion a POSA would have understood that the Randall-Ryden combination meets all limitations of claims 4-5, 11, 22-23, and 28-29 of the ’418 patent, and therefore renders those claims obvious.

- a. **Claim 4: The system of claim 1, wherein a speed said first wireless device is traveling is operable of being determined.**

Claim 5: The system of claim 1, wherein a direction said first wireless device is traveling is operable of being determined.

[0383] POSAs would have known that speed is determined based on a distance traveled over time, while a direction is determined based on changes in position. As I discussed above for claim 7 (§VIII.E.2.e) and Elements [19K]-[19L] (§§VIII.E.2.1.xii-xiii), Randall teaches that each of its wireless devices can request and receive the position of another wireless device and receive updates to that device's position information. Randall, p. 24 (Table 4, "People tracking"). Thus, Randall discloses obtaining multiple positions of another wireless device, which POSAs would have known can be used to determine speed and direction of travel.

[0384] While calculating speed and determining a direction of travel is straightforward when using GPS (because it provides information that a POSA would have known could be used to perform those calculations) or by simply determining the speed based on a distance travelled over a period of time and heading (direction) based on changes in position, the Ryden reference discloses that it is desirable to determine the speed and direction of travel for a user's device and a target device, which may be cellular devices. Ryden, 19:34-47; Ryden-Prov., 34:3-14, 35:4-11. Ryden teaches that it is desirable to determine the speed

and direction of travel of a mobile device, which may be a cellular device. Ryden, 18:33-50; Ryden-Prov. (EX1010), 16:3-15, 34:3-14. Ryden teaches that travel speed and direction may be extrapolated from received position information. Ryden, 18:41-50; Ryden-Prov., 35:4-11. Ryden also discloses that speed and direction of travel may be directly determined from position changes as a function of time. Ryden, 19:34-47; Ryden-Prov., 35:4-11.

[0385] A user seeking to navigate to a target device would expect to be informed of changes to the target device's positions, and providing speed and direction of travel would help the user to better navigate to the target device. Thus, a POSA would have been motivated to enhance Randall's navigational capabilities to determine the remote mobile device's movement, including speed and direction of travel, to provide accurate tracking information and inform users who are trying to meet up, and would have had a reasonable expectation of success because, as Ryden demonstrates, doing so in mobile / wireless devices was conventional in the prior art. *See supra* §VIII.B.1 (discussing Ryden).

[0386] Thus, it is my opinion that the Randall-Ryden combination meets claims 4 and 5.

b. Claim 11: The system of claim 1, wherein a direction that said second wireless device is traveling in is operable of being displayed.

[0387] Randall discloses that its system can provide a service “similar to GPS tracking in cars, but for mobile phones,” where “[y]ou identify where you want to go, the phone knows where you are already,” so it can “give you step by step instructions on how to get there.” Randall, p. 29 (“Route finder”). Ryden discloses that direction of travel may be determined for a user’s device and a target device. Ryden, 19:34-47; Ryden-Prov., 34:3-14, 35:4-11. A POSA would have recognized that a user of Randall’s system seeking to navigate to a target device would have benefited from being informed of their progress along a route, to be informed of changes to the target device’s positions, and that knowing the direction of travel would help the user better navigate to the target device. Being apprised of “continuously known locations” of devices was well-known as disclosed by Ryden. Ryden, 19:51-56; Ryden-Prov., 35:12-16. Therefore, Ryden corroborates that it was well-known in POSAs’ background knowledge that a direction in which a wireless device is traveling could be displayed on another wireless device, and its utilization was a useful and obvious variation implementation of Randall’s navigation system to inform the user of their progress along a provided route. Because displaying a direction of travel to a wireless device was well-known in the prior art, as demonstrated by Ryden, a POSA would have had a reasonable

expectation of success integrating such functionality into Randall's system. *See supra* §VIII.H.1 (discussing Randall-Ryden combination).

[0388] Thus, it is my opinion that Randall-Ryden meets claim 11.

c. **Claim 17: The system of claim 1, wherein said first wireless device is OFF when said location is provided to said second wireless device.**

[0389] As I discussed above (§VIII.B.3.c), Ryden teaches to program a wireless device's location reporting feature "to bypass the unit's ON-OFF switch" so the device "respond[s] with its...location G#" even "when the unit 10 is turned OFF," so as to "allow[] a stolen telephone unit" to be located. Ryden, 16:53-62; Ryden-Prov, 31:4-8. A POSA would have been motivated to incorporate this feature in Randall's system to allow a contact (e.g., friend or family member) to locate a lost or stolen *first wireless device*, and would have reasonably expected success in view of Ryden's teachings that use the technique in a system similar to Randall's where wireless device GPS locations are being tracked. Providing the location of a device even when it is turned off was part of a POSA's background knowledge. My opinion in this regard is corroborated by Meadows (EX1018), which discloses that making "the device continue[] to transmit" "even when the wireless device operator turns off the wireless device" is "useful for monitoring other individuals" and "useful for tracking devices such as misplaced cellular telephones." Meadows, 7:20-33.

[0390] In Randall's system, the *first wireless device* reports its location to the i-server, which provides it to the *second wireless device*, as I discussed above (*see* §§VIII.E.2.a.ii-iii ([1A]-[1B]), §VIII.E.2.a.vi ([1E])). Therefore, a POSA would have been motivated to implement the Randall-Ryden combination to perform that location reporting even when the wireless device is off, such that *said first wireless device* can be *OFF* when *said location* is *provided* to *said second wireless device*. Thus, it is my opinion that Randall-Ryden combination meets claim 17.

- d. **Claim 22: The system of claim 18, wherein a speed of said first wireless device is traveling is operable of being determined.**

[0391] Claim 22 recites similar limitations to claim 4. Thus, it is my opinion that the Randall-Ryden combination meets claim 22 for the same reason Randall-Ryden meets claim 4 (*supra* §VIII.H.2.a).

- e. **Claim 23: The system of claim 18, wherein the direction said first wireless device is traveling is operable of being determined.**

[0392] Claim 23 recites similar limitations to claim 5. Thus, it is my opinion that the Randall-Ryden combination meets claim 23 for the same reason Randall-Ryden meets claim 5 (*supra* §VIII.H.2.a).

- f. **Claim 28: The system of claim 19, wherein a speed said first wireless device is traveling is operable of being determined.**

[0393] Claim 28 recites similar limitations to claim 4. Thus, it is my opinion that the Randall-Ryden combination meets claim 28 for the same reason Randall-Ryden meets claim 4 (*supra* §VIII.H.2.a).

- g. **Claim 29: The system of claim 19, wherein the direction said first wireless device is traveling is operable of being determined.**

[0394] Claim 29 recites similar limitations to claim 5. Thus, it is my opinion that the Randall-Ryden combination meets claim 29 for the same reasons Randall-Ryden meets claim 5 (*supra* §VIII.H.2.a).

I. Ground 9: Claims 15-17 Would Have Been Obvious over Randall in View of Ganesh

[0395] As explained in this section below, in my opinion claims 15-17 of the '418 patent would have been obvious to a POSA in view of the combined teachings of Randall (EX1007) and Ganesh (EX1012).

[0396] I provided a discussion of Randall in Section VIII.E.1 above and a discussion of Ganesh in Section VIII.D.1 above.

1. Randall-Ganesh Combination

[0397] As I discussed above §§VIII.D.1-3, Ganesh teaches benefits of having a server store a history of locations of a wireless device, including using histories to determine the approximate location of the wireless device and

providing location information from a historical location log when the target device is turned off. Ganesh, 4:29-35, 6:55-7:20, 7:62-65. A POSA would have found it desirable and been motivated to enhance Randall's system to provide more comprehensive location capabilities, including via Ganesh's teachings of techniques for providing locations based on a history. Users of the Randall system would have wanted an option to locate other users at any time, irrespective of whether their mobile device was turned on or off. For example, while an exact position may be desirable, POSAs would have known that a most-recent position based on a prior call can still provide useful location information for a use. Ganesh, 1:36-2:41. For example, a parent would want to know where their child was at any time of day or night. Similarly, consistent with the already existing focus of E-911 services, emergency services attempting to respond to a person needing assistance would need to know their location, even if the person's mobile device was off, such as due to running out of batteries.

[0398] Ganesh describes several functionalities that a POSA would have been motivated to combine with Randall, including storing a history of a mobile device's calls and locations, which can allow the mobile device to be located when it is turned off or otherwise outside of a service area. This would allow other users to locate the mobile device, such as based on its apparent movement over time based on the history information, even if it is experiencing

communication difficulties or has lost power. It also provides the advantage of providing levels of access to users requesting the location of a wireless device, such as approximate location information when a wireless device is powered off or out of a service area, and more precise location information when the wireless device is on and connected to its wireless service.

[0399] A POSA would have had a reasonable expectation of success in incorporating any of these or other functionalities in Ganesh into the Randall system. Randall is directed to very similar subject matter, including determining and sharing the location of a wireless device, and the functionality to be incorporated into the Randall system would have been straightforward modifications of those systems such that a POSA would have had a reasonable expectation of success. For example, Randall's i-server already receives, stores, and provides updates of a target wireless device's location as I discussed above §§VIII.E.1.a.ii-vii. Thus, storing the call history and corresponding location information would have involved straightforward modifications to the Randall system to store that additional data (e.g., a minor upgrade to Randall's i-server). Further, because Randall provides stored location information, Randall would already be capable of providing that information irrespective of whether the target device was turned on or off.

2. Mapping of Randall-Ganesh to Claims 15-17

[0400] The Randall-Ganesh combination incorporates the same teachings of Ganesh as the Sheha-Ganesh combination that I discussed above §§VIII.D.2-3 does, which meet the limitations added by claims 15-17 for the same reasons I discussed above §§VIII.D.3.a-c and explain again below.

a. **Claim 15: The system of claim 1, wherein said facility stores a history of locations for said first wireless device.**

[0401] As I discussed above with respect to claim 1 (§VIII.E.2.a), wireless devices in the Randall system provide their locations to the i-server, which stores them. *See* §VIII.E.2.a.ii (Element [1A]), §VIII.E.2.a.iv (Element [1D]), §VIII.E.2.a.vi (Element [1E]); Randall, [0009], [0021], [0067], p. 24 (Table 4, “People tracking”). Ganesh discloses that a server can store call histories that includes locations for wireless devices, such as may be represented by cellular sites that the wireless device has previously connected to. Ganesh, 4:29-35, 6:55-7:20, 7:62-65. A POSA would have been motivated to incorporate such functionality into the Randall system and would have had a reasonable expectation of success, as I discussed above (§VIII.I.1). Therefore, it is my opinion that the Randall-Ganesh combination meets claim 15.

- b. Claim 16: The system of claim 1, wherein said server stores a history of locations for said first wireless device and said history is utilized to provide an approximate location of said first wireless device.**

[0402] Claim 16 repeats the language of claim 15, which I discussed above (§VIII.I.2.a) and adds that “said history is utilized to provide an approximate location of said first wireless device.” Ganesh describes that its history feature can be used to provide an approximate location of a wireless device, such as based on the call history and a related cell site. Ganesh, 4:29-35, 6:55-7:20, 7:62-65. A POSA would have been motivated to incorporate such functionality into the Randall system and would have had a reasonable expectation of success for the same reasons as discussed above with respect to claim 15 (§VIII.I.2.a). *See also supra* § VIII.I.1 (discussing Randall-Ganesh combination). Therefore, it is my opinion that the Randall-Ganesh combination meets claim 16.

- c. Claim 17: The system of claim 1, wherein said first wireless device is OFF when said location is provided to said second wireless device.**

[0403] As I have discussed above (§VIII.E.2.a.ii (Element [1A]), §VIII.E.2.a.iv (Element [1D]), §VIII.E.2.a.vi (Element [1E])), Randall discloses that locations of wireless devices are stored at Randall’s i-server. Randall, [0009], [0021], [0067], p. 24 (Table 4, “People tracking”). Because the locations are stored at the i-server, a requesting device can request a location from the i-server regardless of whether the target device is on or off. Randall, [0009], [0021],

[0067], p. 24 (Table 4, “People tracking”). Ganesh describes this same functionality because it provides location information from call histories for devices that are turned off or otherwise not connected to the network. Ganesh, 7:62-65, 6:55-7:20. A POSA would have been motivated to incorporate such functionality into the Randall system and would have had a reasonable expectation of success for the same reasons as I discussed above (§VIII.I.1; discussing Randall-Ganesh combination). Therefore, it is my opinion that the Randall-Ganesh combination meets claim 17.

IX. COMMENTS ON MULLEN’S CHARACTERIZATIONS OF MY DEPOSITION TESTIMONY CITED IN IPR2023-00090, PAPER 15

[0404] I am aware that in IPR2023-00090 (283 Patent), Mullen argued that I “conceded” “at deposition” that “Sheha does not disclose user-specific privacy settings for mobile devices.” IPR2023-00090, Paper 15, at 4 (citing IPR2023-00090, Ex. 2003, 17:6-12, 114:12-25). I did not concede that. What I said at 17:6-12 of Ex. 2003 of IPR2023-00090 was that Sheha discusses privacy “at the group level.” And I testified that, in Sheha, “a group *can be a group of one* or it can be a group of many.” IPR2023-00090, Ex. 2003, 17:19-20. I testified that “you can have a group of one” because “in my experience, particularly in the location world, the way group has been used it is not required to have at least two. It can have at least one. It can be just one.” IPR2023-00090, Ex. 2003, 18:11-24. I testified that, “[f]or example, if you have a friend section in your contact list, you

just have one friend as your group of friends, sadly for you, but it's still just one person." IPR2023-00090, EX2003, 18:21-24. At 114:12-25 of Ex. 2003 of IPR2023-00090, I testified similarly. I said that Sheha's "privacy settings, as well as the group database settings, are not individual by individual," because they are not *only* set individual by individual, but I reiterated again that "the group permutation, in my view, can have a group of one." IPR2023-00090, Ex. 2003, 114:22:15-3. When a privacy setting or group permission setting is set for a group of one (i.e., there is one individual in the group), it is set exclusively for that individual.

[0405] I am aware that in IPR2023-00090 (418 Patent), Mullen argued that I "admitted...at [my] deposition" that Sheha does not "describe[] ways for a mobile device to provide permission to another mobile device to request its location." IPR2023-00090, Paper 15, at 14 (citing IPR2023-00090, Ex. 2003, 97:15-98:20) (emphasis omitted). At 97:15-98:20 of Ex. 2003 in IPR2023-00090, all that I "admitted" was that there was a sentence in my declaration in IPR2023-00090 that "could have been worded better." The intent of the sentence was that Sheha's system allows one user to *access* the location of another user's wireless device so long as the requesting user has permission to receive the location. That is what is relevant to the claim limitation that was being discussed at page 97 of the deposition – "determining whether to allow access of location information." For

example, I explained that Sheha's ODAS will evaluate "whether location can be sent to the requester or not." IPR2023-00090, Ex. 2003, at 99:8-14.

[0406] I am aware that in IPR2023-00090 (418 Patent), Mullen argued that I "conceded at [my] deposition that the privacy settings are not user specific and apply to any position request received from any device logged into the ODAS." IPR2023-00090, Paper 15, at 16-18 (citing IPR2023-00090, Ex. 2003, 17:6-12, 20:13-21:9, 23:22-24:7, 24:20-25:11, 114:12-25, 116:2-7, 154:2-5). As explained below, that is not what I said in any of the cited portions of my deposition.

[0407] At 17:6-12 of Ex. 2003 of IPR2023-00090, as discussed above, what I said was that Sheha discusses privacy "at the group level." And I testified that, in Sheha, "a group *can be a group of one* or it can be a group of many." IPR2023-00091, Ex. 2003, 17:19-20.

[0408] At 20:13-21:19 of Ex. 2003 of IPR2023-00090, I was asked whether "anybody that has access to the ODAS database can access the location mobile device 18a based on that sentence" at 10:17-26 of Sheha, and I answered that "[t]hat passage is not specific to that kind of question." I said "I think that's one of the embodiments that Sheha enables," but that enabled embodiment is not specifically discussed in "[t]hat passage" (*id.*), and it would not negate other

embodiments Sheha teaches where “users can define a group of specific users that have access to” their location information (Sheha, 11:63-12:7).

[0409] At 23:22-24:7 of Ex. 2003 of IPR2023-00090, I was asked “who, in the ODAS system, may receive device 18a’s position information,” and I responded, “Just in that narrow sentence, that would *potentially* be anybody who was calling or being called by the phone.” It is only “potentially,” because it also depends in part on whether that person/device has permission to receive the position information.

[0410] At 24:20-25:11 of Ex. 2003 of IPR2023-00090, I testified that “[w]ithin...the scope of that sentence” at 10:20-25 of Sheha, “*notwithstanding any of the other group or authentication kinds of information discussion that Sheha discusses*,...in theory, that would be anybody who...is signed up, essentially, to get that information from that phone.” I said that because the person has to be “signed up” and authenticated to receive the information, *and* the “other group or authentication kinds of information...that Sheha discusses” *add to* what is discussed at 10:20-25 of Sheha, resulting in embodiments that only provide location information when the receiving has permission based on “a group database and authorization and authentication protocols” (Sheha, 11:63-12:7) and other privacy settings.

[0411] At 114:12-25 of Ex. 2003 of IPR2023-00090, as discussed above, I testified that Sheha’s “privacy settings, as well as the group database settings, are not individual by individual,” because they are not *only* set individual by individual, but I reiterated again that “the group permutation, in my view, can have a group of one.” IPR2023-00091, Ex. 2003, 114:22:15-3.

[0412] At 116:2-7 of Ex. 2003 of IPR2023-00090, I said it was “accurate” that “privacy settings” that “are stored on the devices” (which is just “*one* of the ways” Sheha describes “establish[ing] permission rights”) “indicate under what conditions a target device with those privacy settings will send out its own position information.” IPR2023-00090, Ex. 2003, 115:15-116:7. That does not negate the other ways Sheha describes establishing permission rights via other types of privacy configurations, such as “utilizing a group database and authorization and authentication protocols to identify users that are permitted to access” location information. Sheha, 11:63-12:7.

[0413] At 154:2-5 of Ex. 2003 of IPR2023-00090, I said it “would be fair” to say that “privacy settings apply to the users that are signed in to the ODAS system.” I did not say that no access permissions are user-specific. My statement merely reflects that each user signs on to the ODAS in order to access its services.

[0414] I consistently testified in my deposition in IPR2023-00090 that “the mere fact that [a user is] logged in to the ODAS and there’s a video call by

itself may not be – wouldn't necessarily be sufficient to get the location. There would also have to be a privacy setting saying, 'Okay, this caller can receive the location information.'" IPR2023-00090, Ex. 2003, 16:24-17:4. I consistently testified that "there is a group capability within Sheha that you can say, For the people in this group, I will allow location information to be provided. And a group can be a group of one or it can be a group of many." IPR2023-00090, Ex. 2003, 17:16-20. I consistently testified that the capability to specify permissions to a group of one or more users is complementary to and used with other types of privacy settings in Sheha. For example, I testified that Sheha "has a group capability by which if you're on that group, then you would be able to have these permutations that we just went through applied to you, meaning if you're on the group and you are -- have a particular time period that's also there, then you would be able to get the location information. *If you're not on the group, you would not be allowed to do that.*" IPR2023-00090, Ex. 2003, 25:16-24.

[0415] I am aware that in IPR2023-00090 (418 Patent), Mullen argued that I "confirmed...at [my] deposition that Sheha's privacy settings "are maintained on mobile devices, not on a remote system." IPR2023-00090, Paper 15, at 18 (citing IPR2023-00090, Ex. 2003, 26:7-8, 156:21-157:13). I disagree. At 26:7-8 of Ex. 2003 in IPR2023-00090, I explained that while some privacy settings are "stored on the phone generally," the "group delineation" in particular would

“generally be stored on the ODAS to provide a permissions capability to filter out people who the original phone doesn’t want to have their location information.”

IPR2023-00090, EX2003, at 26:7-8. At 156:21-157:13 of Ex. 2003 in IPR2023-00090, I was asked, “[S]itting here now, *without looking*, you don’t know whether Sheha explicitly teaches privacy settings stored on a system server...?” and I said, “I don’t know for certain in terms of a particular passage.” I did not know for certain in that moment simply because the questioning attorney specifically instructed me *not to look* at Sheha. Nonetheless, I testified that storing privacy and permission settings on the server would have been at minimum obvious because “it would make more sense in embodiments where a fresh location is not needed to store privacy and permission settings on the server to avoid needing to ping the device each time you’re wanting that information.” IPR2023-00090, Ex. 2003, 157:14-21. I consistently testified that Sheha’s system “encompasses the various privacy and permissions aspects associated with the invention” and “it would be a far more efficient design to” have “privacy settings or groups” “stored on the server” “as opposed to having to constantly access that information on the target’s [sic] device itself.” IPR2023-00090, Ex. 2003, at 156:1-19. In any event, as discussed above in my declaration for this matter, Sheha discloses that the group database is stored in the ODAS server, which teaches or at least renders obvious having privacy settings stored on Sheha’s remote ODAS server.

[0416] I am aware that in IPR2023-00090 (418 Patent), Mullen argued that I “conceded at [my] deposition that” Sheha’s reference to “this information” at Sheha’s 11:55-12:4 is “in the landline description [and] ties the ‘define a group of specific users’ and ‘group data’ disclosures to the ‘landline-to-landline position request.’” IPR2023-00090, Paper 15, at 20-21 (citing IPR2023-00090, Ex. 2004, 185:14-188:5). I did not concede that the cited portion of Sheha “ties the ‘define a group of specific users’ and ‘group database’ disclosures to the ‘landline-to-landline position request.’” At 187:22-188:5 of Ex. 2004 of IPR2023-00090, I was asked whether “this information” in Sheha’s sentence at 11:65-12:1 is “referring to this information that’s been discussed in the previous three sentences – four sentences,” and I said, “Right.” And I subsequently testified that “this information” in one of the previous sentences is “referring to the telephone number and its associated position information.” IPR2023-00090, Ex. 2004, 189:2-14. Sheha makes clear that mobile telephones and landline telephones can both have position information associated with their numbers. E.g., Sheha, 9:66-10:4, 10:44-47, 10:66-11:8. I did not at all testify that Sheha’s “define a group of specific users” and “group database” disclosures are tied to the “landline-to-landline position request.” As I discussed at deposition and in my declaration for this matter, Sheha discloses that mobile-to-mobile, mobile-to-landline/landline-to-

mobile, and landline-to-landline embodiments operate similarly. E.g., Sheha, 4:13-18, 4:59-62, 10:44-47.

[0417] I am aware that in IPR2023-00090 (418 Patent), Mullen argued that I “admitted” at deposition that Sheha’s disclosure that “using the authorization and authentication protocols a user can request the position of a mobile device, similarly to requesting the position of a landline device” (Sheha, 12:4-7) “merely indicates that requesting position information for a landline or mobile device may both involve using a login and password, i.e., authorization and authentication protocols.” IPR2023-00090, Paper 15, at 21-22 (citing IPR2023-00090, EX2003, at 73:13-22). I understand that Mullen further argued that I “attempt[ed] to change this testimony on redirect” in a way that “contradicts” my “initial understanding and the plain text of Sheha.” IPR2023-00090, Paper 15, at 22 (citing IPR2023-00090, Ex. 2004, at 205:17-206:5). As explained below, I disagree with Mullen’s characterization of my testimony.

[0418] At 73:13-22 of Ex. 2003 in IPR2023-00090, I was asked, “What is your understanding of the language ‘similarly to’ in the context of that sentence” in Sheha at 12:4-7. I responded that “[o]ne way to look at it,...if you view...authorization and authentication as equating to log-on and password submission, then...the need for a log-on and password wouldn’t be any different or much different between landline and mobile.” That is, “[o]ne way” in which

landline and mobile embodiments are “similar” is that they have the same “need for a log-on and password.” That “need for a log-on and password” is to access various services provided by the ODAS and to verify what access permissions the requesting user has, including to other users’ location information, “similarly” in landline and mobile embodiments, as I have explained elsewhere in this declaration.

[0419] That is what I explained at deposition as well at the testimony Mullen cited at IPR2023-00090, Ex. 2004, at 205:17-206:5. There I testified that Sheha at 11:55-12:7 says that “A user can request the position of a mobile device, similarly to requesting the position of a landline device,” which I agreed means that if a user requests the position of a mobile device, that will involve the use of that group database and authorization and authentication protocol. IPR2023-00090, Ex. 2004, at 205:17-206:5.

[0420] Thus, I disagree with Mullen that I changed my testimony and deposition and I disagree that my testimony contradicts any of my other testimony or Sheha’s disclosure. My testimony was, in fact, consistent with Sheha’s disclosure, as I explained above.

[0421] I am aware that in IPR2023-00091 (283 Patent), Mullen argued that I “conceded” that Sheha’s “No Phone Call embodiment descriptions were ambiguous.” IPR2023-00090, Paper 15, at 23 (citing IPR2023-00090, Ex. 2003,

28:16-29:7, 29:19-30:14, 31:19-32:4). I did not concede that. At 28:16-29:10 of Ex. 2003 in IPR2023-00090, I stated that the “in one embodiment” phrase in Sheha’s sentence at 11:61-63 is “potentially a little more ambiguous” *in isolation*, but that “given the overall scope of Sheha,” that “sentence is applicable to both mobile and landline.” At 29:19-30:18 of Ex. 2003 in IPR2023-00090, I gave substantially the same testimony—that the sentence is “ambiguous” in isolation, but “given the full scope context of this whole paragraph and the whole patent itself – is also applicable to mobile embodiments.” As I’ve discussed, Sheha at 11:58-12:7 makes clear that the paragraph’s discussion that follows also applies to mobile-to-mobile, which Sheha elsewhere says works similar to landline-to-landline and mobile-to-landline, which has “the same” “objectives” (Sheha, 4:13-17), as I’ve discussed above. And at 31:19-32:4 of Ex. 2003 in IPR2023-00090, I was only asked whether Sheha at 11:58-61 makes “reference to the ODAS database,” and I said that *particular* paragraph of Sheha was “not getting into” that level of detail on “any specific system component.” Sheha discusses such details elsewhere. *See supra* §VIII.A.2.a.v.

[0422] I am aware that in IPR2023-00090 (418 Patent), Mullen argued that I was “speculating about how the ‘group database’ of Sheha could have been used to exchange position information between mobile devices without initiating a phone call” and that I “went beyond the disclosures in Sheha, was not able to

articulate how the technology at the time would have supported using a group database for mobile device position exchanges and admitting that such methodology would have been costly ('\$500 data bill') and impractical ('impact battery power')." IPR2023-00090, Paper 15, at 24-25 (citing IPR2023-00090, Ex. 2003, 69:3-71:20). I disagree that my testimony went beyond Sheha's disclosure and in the cited testimony I was not asked to "articulate how the technology at the time would have supported using a group database for mobile device position exchanges." However, I explained that there would have been many "different embodiments" within the POSA's ordinary skill that are consistent with Sheha's disclosure where the "location would be stored on the ODAS." IPR2023-00090, Ex. 2003, 70:17-71:12. I also did not testify that any such methodology would be "costly" or "impractical." I explained that a POSA would have known to implement "different ways of kind of calibrating or controlling" the frequency of location reporting using "location settings" because the frequency "[c]ould impact batter power" and "you wouldn't necessarily want to just say, Hey, I'm going to keep my data fresh every two minutes, and wind up with a \$500 data bill at the end of the month." IPR2023-00090, Ex. 2003, 70:17-71:20. *Some* users, however, might find such costs worth paying to have near real-time location monitoring. POSAs would have known how to provide settings to allow each user to balance trade-offs of freshness of location reporting vs. power consumption and

commercial service costs, all of which were well within a POSA's level of ordinary skill to address, and none of which were non-obvious. The challenged patent's claims recite no requirements about cost, battery-power, or how "fresh" the location data must be.

[0423] I am aware that in IPR2023-00090 (418 Patent), Mullen argued that I could not "clearly or sufficiently explain why [Sheha's] No Phone Call embodiment teaches 'a permission ... being stored in said remote system' as recited in Claim 1" and that my testimony that "'Sheha discloses maintaining privacy settings at the system or at the wireless device' contradict[ed]" my "own testimony and Sheha's clear disclosures that 'privacy settings' are maintained on the mobile devices." IPR2023-00090, Paper 15, at 25 (citing IPR2023-00090, Ex. 2003, 26:7-8, 156:21-157:13). As explained below, I disagree that I could not explain why Sheha's "No Phone Call embodiment" teaches "a permission ... being stored in said remote system" and I disagree that my testimony is contradicted by any of my other testimony or Sheha's disclosure.

[0424] At 26:7-8, I testified that, in Sheha, "privacy setting would be stored on the phone generally" and explained that it would be done "to provide some of the[] permutations" of Sheha's disclosure that I had been testifying to at deposition. IPR2023-00090, Ex. 2003, at 26:7-13. However, I did not testify at

26:7-8 that Sheha does not also disclose storing permission information on a remote server. As I discussed above,

[0425] At 156:21-157:6, I was asked whether I was admitting that Sheha does not explicitly disclose storing privacy settings at the system server and I testified that I was “not certain that’s true for the [Sheha] patent as a whole” and “would have to go back through Sheha in its entirety.” IPR2023-00090, EX2003, at 157:1-5. At 157:7-13, I was asked “without looking” at Sheha “whether Sheha explicitly teaches privacy settings stored on a system server.” I merely testified that, sitting there, *without looking at Sheha*, I could not identify “a particular passage” entirely from memory. IPR2023-00090, Ex. 2003, at 157:7-13. However, Sheha teaches embodiments where the ODAS (remote system) implements the “authorization and authentication protocols” and the “group database” described in Sheha, 11:63-12:7 for storing permissions for specific users. *See* Sheha, 3:4-14 (“networked server system utilizing authentication and authorization procedures”), 4:8-18 (“online database and/or networked authentication and authorization connection server”), 7:22-23 (“online database and application server (ODAS)”), 8:42-53 (“ODAS 3 us[es] authentication and authorization protocols” to “verify the level of authority each user is granted”). Thus, Sheha does disclose storing privacy settings at the ODAS (server).

[0426] Moreover, I also explained at deposition in IPR2023-00090 that “Sheha is a collection of functionality as opposed to particular physical location of specific elements” and that “it would make more sense in embodiments where a fresh location is not needed to store privacy and permission settings on the server to avoid needing to ping the device each time you’re wanting that information.” IPR2023-00090, Ex. 2003, at 157:14-21. Furthermore, as I explained above (§VIII.A.2.a.v), with respect to any privacy settings set locally at the target device, POSAs would have understood that an obvious implementation would have been for the remote system to store those settings after verifying them by querying the device (Sheha, 4:64-66), so the remote system can then apply them to determine whether to release the device’s location to a requesting use.

[0427] Thus, I disagree that my deposition testimony at IPR2023-00090, Ex. 2003, at 26:7-13 and/or 157:7-13, contradicts any of my other testimony or Sheha’s disclosures about where privacy settings are maintained.

[0428] I am aware that in IPR2023-00090 (418 Patent), Mullen argued that I “confirmed that” Sheha’s disclosure at 4:52-58 “does not refer to Figure 5.” IPR2023-00090, Paper 15, at 30 (citing IPR2023-00090, Ex. 2003, 85:6-9). I did not confirm that Sheha’s disclosure at 4:52-58 does not refer to Figure 5. Instead, all I agreed was that Sheha at 4:52-58 “does not contain the words ‘Figure 5.’” IPR2023-00090, Ex. 2003, 85:6-9. To the extent Mullen is characterizing my

deposition testimony as being that Sheha at 4:52-58 is unrelated to Sheha's Figure 5, that was not my testimony and I disagree with Mullen's characterization. Sheha at 4:52-58 says that embodiments include "the mobile telephone" "be[ing] able to provide navigation information, such as route information in the form of real-time driving directions, or else a map and address of the destination telephone number can be displayed on the mobile telephone." Sheha's FIG. 5 is consistent with that disclosure as it illustrates an "information window 30" that displays "a map location 33 of the caller, and the user's location position information" and "can also provide a driving route 29." Sheha, 9:23-39. Thus, in my opinion, Sheha at 4:52-58 is related to Sheha's FIG. 5.

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

I declare under penalty of perjury that the foregoing is true and correct.

Dated: 10-07-2024



Robert A. Miller

X. CLAIM LISTING

The following claim listing assigns element labels (e.g., [1A], [1B], etc.) to certain claims for clarity.

Claim 1
[1PRE] A system comprising:
[1A] a first wireless device, wherein a location of said first wireless device is operable of being determined and provided to a remote system,
[1B] said location of said first wireless device is operable of being requested by a second wireless device outside of a call for communication between said first wireless device and said second wireless device,
[1C] a permission is operable of being provided by said first wireless device for said second wireless device to access location information about said location,
[1D] said permission is operable of being stored in said remote system, wherein said remote system is located remotely from said first and second wireless devices,
[1E] said location information about said location is operable of being provided from said remote system to said second wireless device in accordance with said permission outside of said call,
[1F] wherein said first wireless device is operable of providing a first map provided with respect to said location.
Claim 2
The system of claim 1, wherein said first and second wireless devices are wireless telephones.
Claim 3
The system of claim 1, wherein said second wireless device displays a map with a location marker associated with said location.
Claim 4
The system of claim 1, wherein a speed said first wireless device is traveling is operable of being determined.
Claim 5

The system of claim 1, wherein a direction said first wireless device is traveling is operable of being determined.
Claim 6
The system of claim 1, wherein said permission is operable of being removed, by said first wireless device, for said second wireless device to obtain said location.
Claim 7
The system of claim 1, wherein said location is determined by a positioning system that receives signals from a plurality of positioning satellites, said location is updated by said positioning system, and said updated location is provided to said remote system. ¹⁶
Claim 8
The system of claim 1, wherein said second wireless device is operable of being alerted when said first wireless device is within a distance of said second wireless device.
Claim 9
[9PRE] The system of claim 1, wherein:
[9A] a first dating matching profile is operable of being provided by said first wireless device;
[9B] a second dating matching profile is operable of being provided by said second wireless device;
[9C] a second location is operable of being obtained, wherein said second location is the location of said second wireless device; and
[9D] said location, said second location, said first dating matching profile, and said second dating matching profile is operable of being utilized to provide an alert.
Claim 10
The system of claim 1, wherein a second location is associated with said second wireless device and said location of said first wireless device is displayed relative to said second location of said second wireless device.
Claim 11

¹⁶ Claim 7 originally recited “said facility,” and was changed by Certificate of Correction to recite “said remote system.” EX1001, p. 29; EX1002 at 724.

The system of claim 1, wherein a direction that said second wireless device is traveling in is operable of being displayed.
Claim 12
The system of claim 1, wherein said second wireless device is operable of being allowed to set location alerts associated with said first wireless device.
Claim 13
The system of claim 1, wherein said permission is assigned for a period of time.
Claim 14
The system of claim 1, wherein said second wireless device is operable of being alerted when said first wireless device enters a geographic region.
Claim 15
The system of claim 1, wherein said facility stores a history of locations for said first wireless device.
Claim 16
The system of claim 1, wherein said server stores a history of locations for said first wireless device and said history is utilized to provide an approximate location of said first wireless device.
Claim 17
The system of claim 1, wherein said first wireless device is OFF when said location is provided to said second wireless device.
Claim 18
[18PRE] A system comprising:
[18A] a first wireless device, wherein a first location of said first wireless device is operable of being determined,
[18B] a second location of a second wireless device is operable of being determined,
[18C] said first and second locations are operable of being provided to a server, wherein said server is located remotely from said first and second wireless devices,
[18D] said first location is operable of being requested by said second wireless device outside of a call for communication between said first wireless device and said second wireless device,

[18E] said second location is operable of being requested by said first wireless device
[18F] a first permission is operable of being provided by said first wireless device for said second wireless device to obtain said first location
[18G] a second permission is operable of being provided by said second wireless device for said first wireless device to obtain said second location
[18H] said first and second permissions are operable of being stored on said server,
[18I] said first location from said server is operable of being provided to said second wireless device as a result of said first permission outside of said call, and
[18J] said second location is operable of being provided from said server to said first wireless device as a result of said second permission,
[18K] wherein said first wireless device is operable of providing a first map from a perspective of said first wireless device.
Claim 19
[19PRE] A system comprising:
[19A] a first wireless device operable of determining a first location of said first wireless device,
[19B] a second location of a second wireless device, is operable of being determined,
[19C] said first and second locations are operable of being provided to a server, said server is located remotely from said first and second wireless devices,
[19D] said first location is operable of being requested by said second wireless device outside of a call for communication between said first wireless device and said second wireless device,
[19E] said second location is operable of being requested by said first wireless device,
[19F] a first permission is operable of being provided by said first wireless device for said second wireless device to obtain said first location,
[19G] a second permission is operable of being provided by said second wireless device for said first wireless device to obtain said second location,
[19H] said first and second permissions are operable of being stored on said server,

[19I] said first location is operable of being provided from said server to said second wireless device as a result of said first permission outside of said call,
[19J] said second location is operable of being provided from said server to said first wireless device as a result of said second permission,
[19K] updates of said first location are operable of being provided to said second wireless device as a result of said first permission, and
[19L] updates of said second location are operable of being provided to said first wireless device as a result of said second permission,
[19M] wherein said first wireless device is operable of providing a first map from a perspective of said first location.
Claim 20
The system of claim 18, wherein said first and second wireless devices are wireless telephones.
Claim 21
The system of claim 18, wherein said second wireless device displays a map with a location marker associated with said first location.
Claim 22
The system of claim 18, wherein a speed of said first wireless device is traveling is operable of being determined.
Claim 23
The system of claim 18, wherein the direction said first wireless device is traveling is operable of being determined.
Claim 24
The system of claim 18, wherein said first permission is operable of being removed, by said first wireless device, for said second wireless device to obtain said first location.
Claim 25
The system of claim 18, wherein said second wireless device is operable of being alerted when said first wireless device is within a distance of said second wireless device.
Claim 26

The system of claim 19, wherein said first and second wireless devices are wireless telephones.

Claim 27

The system of claim 19, wherein said second wireless device displays a map with a location marker associated with said first location.

Claim 28

The system of claim 19, wherein a speed said first wireless device is traveling is operable of being determined.

Claim 29

The system of claim 19, wherein the direction said first wireless device is traveling is operable of being determined.

Claim 30

The system of claim 19, wherein said first permission is operable of being removed, by said first wireless device, for said second wireless device to obtain said first location.

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