

Paper No. _____

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. IPR2025-00368
Patent No. 11,246,024

**PETITION FOR INTER PARTES REVIEW
UNDER 35 U.S.C. §§311-319 AND 37 C.F.R. §42.1 et seq.**

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APPENDIX LISTING OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 11,246,024 (“the ’024 patent”)
1002	Prosecution History of U.S. Patent No. 11,246,024
1003	Declaration of David H. Williams (“Williams-Decl.”)
1004	Curriculum Vitae of David H. Williams
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	RESERVED
1010	RESERVED
1011	RESERVED
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	RESERVED
1017	RESERVED
1018	U.S. Patent No. 6,716,101 (“Meadows”)
1019	U.S. Patent No. 7,366,522 (“Thomas”)
1020	RESERVED
1021	RESERVED
1022	International Patent Application Publication No. WO 01/91486 (“Darling”)
1023	U.S. Patent No. 6,084,951 (“Smith”)
1024	U.S. Patent No. 6,714,793 (“Carey”)
1025	U.S. Patent No. 6,415,224 (“Wako”)

Exhibit	Description
1026	RESERVED
1027	Korean Patent Application Publication No. 10-2001-0091381 (“Han”)
1028	RESERVED
1029	U.S. Patent No. 6,456,854 (“Chern”)
1030	U.S. Patent No. 6,754,665 (“Futagami”)
1031	RESERVED
1032	RESERVED
1033	RESERVED
1034	RESERVED
1035	International Patent Application Publication No. WO 00/22860 (“Degnbol”)
1036	Civil Docket Report in <i>Mullen Industries LLC v. Samsung Electronics Co., Ltd. et al.</i> , Case No. 2:24-cv-00049 (E.D. Tex.) (last checked December 26, 2024)
1037	Federal Court Management Statistics–Profiles, U.S. District Courts–Combined Civil and Criminal (September 30, 2024) (available at https://www.uscourts.gov/file/79291/download)
1038	Docket Control Order in <i>Mullen Industries LLC v. Samsung Electronics Co., Ltd. et al.</i> , Case No. 2:24-cv-00049 (E.D. Tex.) (June 14, 2024) (Dkt. 30)
1039	Plaintiff’s Disclosure of Asserted Claims and Infringement Contentions in <i>Mullen Industries LLC v. Samsung Electronics Co., Ltd. et al.</i> , Case No. 2:24-cv-00049 (E.D. Tex.) (May 15, 2024)
1040	RESERVED
1041	U.S. Patent Application Publication No. 2003/0074209 (“Tobin”)
1042	RESERVED
1043	U.S. Patent No. 6,133,853 (“Obradovich”)
1044	U.S. Patent No. 6,269,369 (“Robertson”)
1045	U.S. Patent Application Publication No. 2002/0169539 (“Menard”)
1046	U.S. Patent No. 7,681,034 (“Lee”)

Exhibit	Description
1047	RESERVED
1048	RESERVED
1049	RESERVED
1050	RESERVED
1051	U.S. Patent No. 6,674,849 (“Froeberg”)
1052	RESERVED
1053	RESERVED
1054	U.S. Patent No. 6,867,733 (“Sandhu”)
1055	U.S. Patent No. 6,532,418 (“Chun”)
1056	U.S. Patent No. 6,049,718 (“Stewart”)
1057	U.S. Patent No. 6,609,005 (“Chern-005”)
1058	RESERVED
1059	RESERVED
1060	RESERVED
1061	RESERVED
1062	RESERVED
1063	RESERVED
1064	RESERVED
1065	RESERVED
1066	RESERVED
1067	U.S. Patent No. 6,127,945 (“Mura-Smith”)
1068	U.S. Patent No. 6,633,813 (“Deworetzki”)
1069	U.S. Patent No. 7,143,443 (“Song”)
1070	U.S. Patent No. 6,107,944 (“Behr”)
1071	U.S. Patent No. 7,203,752 (“Rice”)
1072	RESERVED
1073	RESERVED

Exhibit	Description
1074	U.S. Patent No. 6,285,867 (“Boling”)
1075	U.S. Patent No. 6,208,934 (“Bechtolsheim”)
1076	U.S. Patent Application Publication No. 2003/0040272 (“Lelievre”)
1077	U.S. Patent No. 5,048,117 (“Aisaka”)
1078	U.S. Patent No. 5,212,811 (“Kuge”)

MANDATORY NOTICES

A. Real Party-In-Interest

Google LLC,¹ Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc. are the real parties-in-interest.

B. Related Matters

1. United States Patent & Trademark Office

The application from which U.S. Patent No. 11,246,024 (“the ’024 patent”) issued (U.S. Patent Application No. 11/841,765) is a Continuation of U.S. Patent Application No. 10/400,296 (U.S. Patent No. 9,635,540), filed March 25, 2003.

The following applications are also Continuations of U.S. Patent Application No. 10/400,296 (U.S. Patent No. 9,635,540):

- U.S. Patent Application No. 11/387,384 (U.S. Patent No. 8,374,575), filed March 22, 2006;
- U.S. Patent Application No. 11/462,201 (U.S. Patent No. 9,204,283), filed August 3, 2006;
- U.S. Patent Application No. 11/485,161 (U.S. Patent No. 11,122,418), filed July 12, 2006;

¹ Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.

- U.S. Patent Application No. 11/834,674 (U.S. Patent No. 11,234,117), filed August 6, 2007;
- U.S. Patent Application No. 11/841,734 (U.S. Patent No. 11,109,218), filed August 20, 2007;
- U.S. Patent Application No. 11/841,750 (U.S. Patent No. 11,096,039), filed August 20, 2007.

The following application is a Continuation of U.S. Patent Application No. 11/841,765 (U.S. Patent No. 11,246,024):

- U.S. Patent Application No. 17/665,568 (abandoned), filed February 6, 2022.

U.S. Patent No. 11,246,024 also claims priority to U.S. Provisional Application No. 60/367,967, filed March 25, 2002.

2. USPTO Patent Trial and Appeal Board

The '024 patent was at issue in *Apple Inc. v. Mullen Industries LLC*, Case Nos. IPR2023-00148 and IPR2023-00149.

Petitioners have filed the following copending petitions for *inter partes* review of patents listed above:

- IPR2025-00018 challenging U.S. Patent No. 11,122,418;
- IPR2025-00019 challenging U.S. Patent No. 9,204,283;
- IPR2025-00021 challenging U.S. Patent No. 11,096,039;

- IPR2025-00124 challenging U.S. Patent No. 8,374,575;
- IPR2025-00197 challenging U.S. Patent No. 11,109,218;
- IPR2025-00227 challenging U.S. Patent No. 9,635,540.

Concurrently with the present petition, Petitioners are filing the following petitions for inter partes review of patents listed above:

- IPR2025-00365, IPR2025-00366, and IPR2025-00367 challenging U.S. Patent No. 11,234,117
- IPR2025-00369 challenging U.S. Patent No. 11,246,024

3. U.S. District Court for the Eastern District of Texas

The '024 patent is currently asserted in *Mullen Industries LLC v. Samsung Electronics Co., Ltd. et al*, Case No. 2:24-cv-00049.

4. U.S. District Court for the Northern District of California

The '024 patent was previously asserted in *Mullen Industries LLC v. Apple Inc.*, Case No. 5:23-cv-00437 (terminated).

5. U.S. District Court for the Western District of Texas

The '024 patent was previously asserted in *Mullen Industries LLC v. Apple Inc.*, Case No. 6:22-cv-00145 (transferred and terminated).

C. Counsel and Service Information - §42.8(b)(3) and (4)

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Powers of attorney are submitted with the Petition. Counsel for Petitioners consent to service of all documents via electronic mail.

Petitioners request *inter partes* review and cancellation of claims 1-44 of the '024 patent (EX1001).

I. INTRODUCTION

The '024 patent is one of seven related patents that Patent Owner (“Mullen”) accuses Petitioners’ products of infringing. Previously, Mullen asserted these patents against Apple Inc., and Apple filed IPRs. Apple’s IPR2023-00148 challenging claims 1-44 was instituted and terminated via settlement during trial.

This Petition presents two sets of grounds: one based on Sheha, under which the Board previously found a reasonable likelihood of unpatentability (IPR2023-00148, Paper 8 at 16-34); and a new set of grounds based on Randall, which has not previously been before the Board.

II. STANDING

Petitioners certify that the '024 patent is available for *inter partes* review and that Petitioners are not barred or estopped from requesting *inter partes* review as to the challenged claims. 37 C.F.R. §42.104(a).

III. GROUNDS FOR UNPATENTABILITY

Claims 1-44 are unpatentable under pre-AIA 35 U.S.C. §103 according to the following grounds (independent claims are indicated in **bold**). Declaration of David H. Williams (EX1003, “Williams-Decl.”), [0091].

Ground Number and Reference(s)		Claims
1	Sheha (EX1005), Froeberg (EX1051)	1-8, 18, 20
2	Sheha, Smith (EX1023)	23, ~~24~~ -29, 39, 41, 44
3	Sheha, Froeberg, Smith, Degnbol (EX1035), Wollrab (EX1014), Obradovich (EX1043), Boling (EX1074), Bechtolsheim (EX1075)	9-17, 19, 21-22, 30-38, 40, 42-43
4	Randall (EX1007-EX1008), Froeberg	1-8, 15, 18-20, 23
5	Randall	~~24~~ -29, 36, 39-41, 44
6	Randall, Froeberg, De-Vries (EX1013), Degnbol, Wollrab, Obradovich, Bechtolsheim	9-14, 16-17, 21-22, 30-35, 37-38, 42-43

Each reference above is prior art under at least pre-AIA 35 U.S.C. §102(e). Randall, Bechtolsheim, and Boling are prior art under §102(a). Smith, Degnbol, and Obradovich are prior art under §102(b).

As discussed *infra* §XI.B, none of these references were discussed by the Examiner during prosecution of the '024 patent.

IV. THE '024 PATENT

A. Specification Embodiments

Generally, the '024 patent discusses sharing a wireless device's location (GPS) with others via a remote system. EX1001, 1:16-28, 5:4-31. Williams-Decl., [0055]-[0062].

B. Person of Ordinary Skill in the Art ("POSA")

A 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. Williams-Decl., [0051]-[0054].

C. Prosecution History

The ’024 patent’s claims were allowed because they are “system claims modeled after allowed method claims in Applicant’s other patents.” EX1002, 1416.

D. Challenged Claims

Independent claims 1 and 24 are “system” claims that adapt recitations from method claim 1 of related U.S. Patent No. 8,374,575 and method claim 1 of related U.S. Patent No. 9,204,283, respectively. These claims are challenged below under similar grounds as in Petitioners’ IPR2025-00124 challenging U.S. Patent No. 8,374,575 and IPR2025-00019 challenging U.S. Patent No. 9,204,283, respectively.

V. CLAIM INTERPRETATION

Claim terms are construed herein using the standard used in civil actions under 35 U.S.C. §282(b), in accordance with the ordinary and customary meaning as understood by a POSA and the patent’s prosecution history. 37 C.F.R. §42.100(b).

VI. GROUND 1: SHEHA, WITH OR WITHOUT FROEBERG

A. Sheha (EX1005)

Sheha claims priority to a provisional application filed July 17, 2001. The provisional's disclosure (EX1006) is substantively identical to that of Sheha and provides written description for Sheha's claim 1. Williams-Decl., [0074]-[0079].

Sheha describes a system allowing telephone devices—landline or mobile—to share their locations via an online database and application server (“ODAS”). Sheha, 2:60-4:18, 10:5-16, 10:66-11:54, 7:19-23. The mobile devices may specify groups of authorized users who may obtain their respective location information. Sheha, 11:55-12:7.

A mobile device may request another mobile device's location through a phone call (mobile-to-mobile call embodiment) or “without having to initiate a telephone call” (no-call embodiment). Sheha, 11:10-54, 11:55-58; *see also id.*, 12:1-7. If authorized, the requesting device receives the position from the ODAS, which may include a map illustrating both devices' locations, route information, driving directions, etc. Sheha, 9:23-39. FIG. 3 (below) illustrates an example system. Williams-Decl., [0093]-[0098].

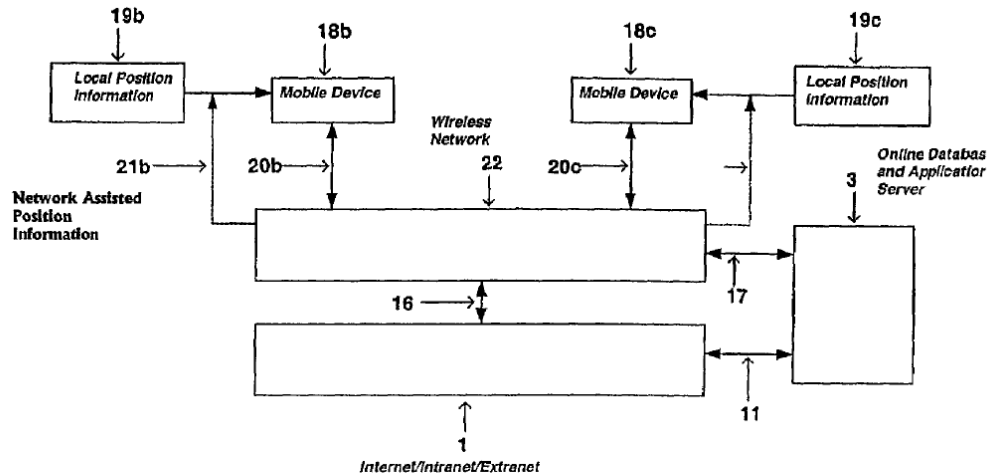


FIG. 3

B. Mapping to Challenged Claims²

1. Claim 1: [1PRE]

Sheha describes a “**system**” for sharing “real-time position information.”

Sheha, Abstract;³ Williams-Decl., [0099].

a. [1A]

Sheha’s system includes an “online database and application *server* (ODAS).” Sheha, 7:20-23. As FIG. 3 (annotated below) shows, ODAS 3 is a system *remote from and capable of communicating with* mobile devices 18b-18c (*wireless telephones*) over wireless network 22 (*a communications network*).

² See Claim Listing Appendix *infra* for claim language of labeled elements.

³ Emphases are added unless otherwise indicated.

Sheha, 4:43-46 (“mobile” device can be “*wireless telephone*”), 10:66-11:35 (describing communication in FIG. 3); Williams-Decl., [0100]-[0101].

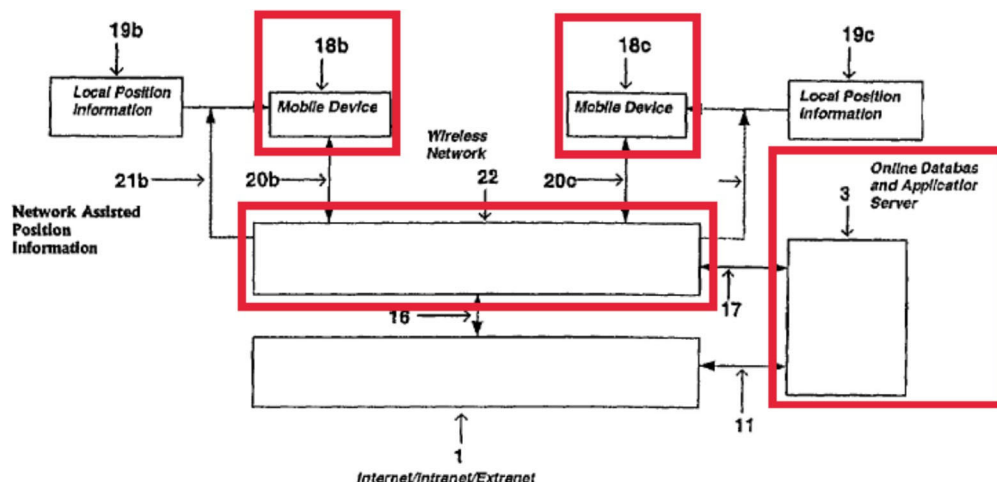


FIG. 3

b. [1B]

Sheha’s ODAS *obtains* each *wireless telephone*’s *location*. Sheha, 10:5-16, 11:3-51 (*e.g.*, 11:3-8, 11:20-24), FIG. 3; Williams-Decl., [0102]-[0103].

c. [1C]

Sheha discloses that each device may have privacy settings, including privacy configuration specifications stored at the server and changed *at the direction of the first wireless telephone*, that “allow the device to prevent or limit other calling devices from obtaining position information.” Sheha, 5:38-46, 11:63-12:7; Williams-Decl., [0104]. Via these privacy settings—also called “permission settings” (Sheha, 5:3-20)—the *first wireless telephone* can specify “*allowance of*

position information transfers...only with the device owner's permission." Sheha, 5:38-46, 4:59-66, 10:17-26; Williams-Decl., [0104]. The *first wireless telephone's* privacy/permissions settings information can include "a group database and authorization and authentication protocols" by which the device's user "can define a group of specific users that have access to" the 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; Williams-Decl., [0104]. The ODAS uses this privacy information to determine whether the *first wireless telephone* has authorized a particular user to obtain its location. Sheha, 3:22-28, 5:21-46, 8:42-53; *see also id.*, 3:4-14, 4:8-18, 9:59-10:4; Williams-Decl., [0104].

In IPR2023-00148 (Paper 7 at 22-24) Mullen argued that Sheha's "privacy settings are installed on, or otherwise associated with, a device, and those settings filter requests for position information regardless of the identity of the requestor." Mullen did not make those arguments about the permissions specified in Sheha's "group database," but instead argued that the group database is only in "a 'landline' version of the 'no telephone call' embodiment" and is not used in a mobile-device embodiment, which Mullen treats as disparate embodiments. IPR2023-00148, Paper 7 at 26-31; *see also id.* at 8-15. Mullen was incorrect.

Sheha does not describe the device-local privacy filters and requester-specific group database of permissions as features of mutually exclusive

embodiments, but rather as complementary privacy/permission specification options available in any embodiment. For example, Sheha describes “utilizing a group database and authorization and authentication protocols to identify users that are permitted to access” position information in the context of having just discussed a “landline-to-landline position request” (11:55-12:1), and then expressly teaches another (mobile) embodiment in which “using the authorization and authentication protocols a user can request the position of a mobile device, similarly to requesting the position of [the] landline device” (12:4-7), as well as using “privacy settings” (12:1-4). POSAs would have understood, therefore, that complementary privacy/permission specification options all can coexist within an embodiment.⁴ Williams-Decl., [0105]-[0106]. This is further corroborated by Sheha’s claims, in which independent claim 47 recites “determining whether the first user is a member of the authorized user *group*” as part of “accessing *privacy* information” for the location of a “communication device,” while in dependent claim 53 the communication device can be a “mobile telephone.” Sheha, 18:65-19:46 (*see* 19:9-15, 19:44-45); Williams-Decl., [0106].

⁴ Sheha interchangeably refers to privacy/permission specification options as “privacy settings,” “permission settings,” “privacy configuration,” “position transfer permissions,” etc. Sheha, 4:35-42, 4:59-5:46, 10:17-26, 10:44-11:9.

Sheha thus discloses and at minimum renders obvious that a mobile-to-mobile 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; Williams-Decl., [0107]. When both are employed, POSAs would have understood that a *first wireless telephone's* location is only provided if the requesting user has permission in the *first wireless telephone's* group database and the *first wireless telephone's* local privacy settings allow location sharing. Sheha, 11:55-12:7, 4:59-5:20; Williams-Decl., [0107]. At minimum, as the Board recognized for institution purposes, Sheha's various disclosures "convey the capabilities of Sheha's remote server." IPR2023-00148, Paper 8 at 19 (noting "the claim language" recites only "*capable of*").

Additionally, allowing a mobile user to specify a group of one or more other mobile users who have permission to access the user's location would have been obvious because it was well-known as a beneficial option with reasonable expectation of success in a system like Sheha's. Williams-Decl., [0107]-[0113] (citing corroborating EX1054 ("Sandhu"), 5:35-50; EX1022 ("Darling"), 3:3-5, 22:23-40; 33:16-32; EX1007 ("Randall"), [0052], [0070], [0136], [0144]-[0148]).

Thus, Sheha's *first wireless telephone* "user[] can define a group of specific users...that are permitted to access" the phone's "position information" (Sheha, 11:63-12:7)—i.e., *a list of users that are allowed to access said location*.

Williams-Decl., [0114]. Each identified *user* in the *list* can be *representative of one of a plurality of wireless telephones* because Sheha references controlling access to position information by “users” and “calling devices” interchangeably (Sheha, 10:66-11:8), and because Sheha describes “defin[ing] [the] group” in the context of “[a] *mobile* or landline device...request[ing] position information of another mobile or landline device” (Sheha, 5:38-46, 11:55-12:7). Alternatively, it would have been obvious per POSA’s above-discussed background knowledge for each identified *user* in Sheha’s *list* to be *representative of one of a plurality of wireless telephones*. Williams-Decl., [0114] (citing Sandhu, Darling, Randall).

In the ’024 patent, a “user profile” can be part of “a login feature” as an “identifier” that is “logged into” via a user’s “device[]” “for [the] user[] to be identified.” EX1001, 9:53-65; Williams-Decl., [0115]. Similarly, in Sheha, “every telephone account user has a username and password for the ODAS” to identify “that a particular user is signed-on to the system on a particular device,” and the ODAS consults “users’ account information” when servicing position-sharing requests. Sheha, 8:38-53, 11:10-35; Williams-Decl., [0115]. Thus, there is *a profile associated with each user and their device (including the first wireless telephone)* that the ODAS consults in determining what settings the user has specified regarding location sharing. Williams-Decl., [0115].

Sheha teaches embodiments where the “authorization and authentication protocols” which involve maintaining (including *changing*, as discussed below) the *list of users* in the “group database” (Sheha, 11:63-12:7) are implemented by the ODAS (*remote system*). See Sheha, 3:4-13, 4:8-18, 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; Williams-Decl., [0116]. Because the *first wireless telephone*’s “user[] can define” the authorized “group” as part of that user’s specified location-sharing settings (Sheha, 11:55-12:7), POSAs would have understood that this *list of users* is for the *profile associated with said first wireless telephone*. Williams-Decl., [0116].

Additionally, implementing the *first wireless telephone*’s list of authorized users *for a profile associated with said first wireless telephone* and managing and *changing* it by the *remote system* would have been obvious because doing so was well-known as a beneficial option with reasonable expectation of success in a system like Sheha’s. Williams-Decl., [0117]-[0122] (citing corroborating EX1054 (“Sandhu”), 5:8-6:22; EX1007 (“Randall”), [0511]-[0514]; EX1015 (“Friedman”), 12:60-13:21; EX1022 (“Darling”), 3:1-5).

Because Sheha’s user can “define” a list of authorized users and can “choose not to reveal its local position to the destination remote mobile device for privacy

purposes at anytime and can conversely enable position transfer permissions at anytime,” POSAs would have understood that the list may be changed *at the direction of said first wireless telephone*. Sheha, 5:9-20; 11:63-12:7; Williams-Decl., [0123]. As the Board recognized for institution purposes, it is “the very nature of a database” that the defined “groups are capable of being changed.” IPR2023-00148, Paper 8 at 20. And Sheha’s disclosures “demonstrate that a user can use their telephone to change settings for the system.” *Id.* at 21 (citing Sheha, 5:11-14).

Additionally, it would have been obvious to allow *changing* the list *at the direction of said first wireless telephone* because it was well-known to POSAs that users commonly desire and were given the ability to change who can access their location rather than being limited to the same list forever. Williams-Decl., [0124]-[0131] (citing corroborating EX1007 (“Randall”), [0509]); EX1022 (“Darling”), 23:3-13, 33:3-34:3; EX1035 (“Degnbol”), 9:34-10:3, 11:16-26; EX1044 (“Robertson”), FIG. 9, 8:11-14; EX1045 (“Menard”), FIG. 10, [0067]-[0068]; EX1046 (“Lee”), FIG. 2D, 16:1-25).

d. [1D]

Sheha’s system “responds with the appropriate position information to the requesting user’s device.” Sheha, 12:1-7, 4:59-5:46. “[T]he wireless network [*communications network*] sends [*transmits*] the position information [*said*

location], obtained from the ODAS [*remote system*],” which “periodically updates each mobile device with the other’s position information” (Sheha, 11:36-51) if the requesting user is among *said list of authorized users* (as discussed *supra* §VI.B.1.c ([1C])). Williams-Decl., [0132]-[0133].

e. [1E]

As discussed *supra* §VI.B.1.b ([1B]), two *wireless telephones* can share their locations via Sheha’s ODAS. Sheha, 4:13-18, FIG. 3, 10:66-11:54; *see* 11:20-23 (“ODAS 3 receives...position information for both mobile devices”), 11:49-50. Thus, the ODAS *determines a second location* (e.g., of device 18c). Williams-Decl., [0134]. As discussed *supra* §VI.B.1.c ([1C]), where a *first wireless telephone*’s (e.g., 18b’s) user has “define[d] a group” of authorized users (Sheha, 11:63-12:7), this two-way location sharing will occur only if device 18c’s user is in that group—i.e., 18c is *one of said plurality of wireless telephones*. Williams-Decl., [0134]-[0135].

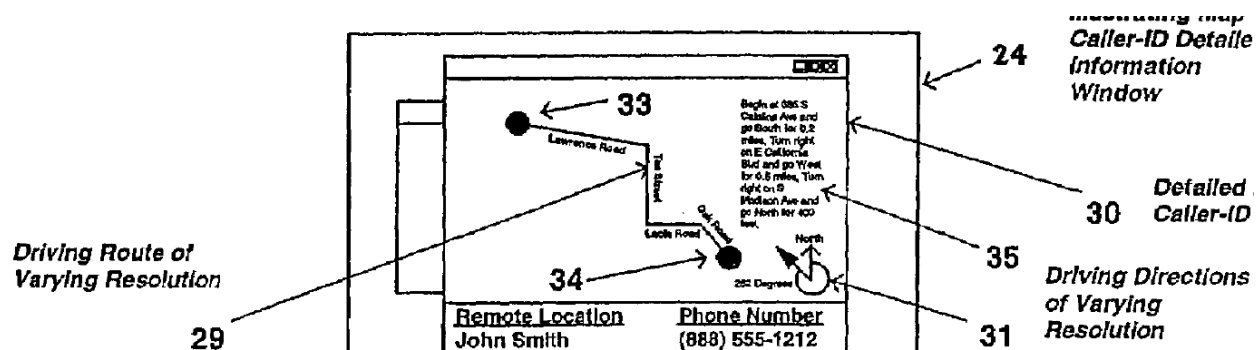
f. [1F]

Sheha discloses using a remote mobile device’s location “to obtain driving *directions* to that device.” Sheha, 5:21-34; Williams-Decl., [0136]. “ODAS 3 periodically updates each mobile device with the other’s position information, thus *providing* real-time driving *directions* and route information.” Sheha, 11:49-51. Sheha thus teaches the remote system *providing directional information* that is

representative of directions between the two devices' locations to said one of said plurality of wireless telephones. Williams-Decl., [0136].

Sheha's FIG. 5 shows this "Map Caller-ID" screen with *directional information representative of directions* ("driving route 29" and "driving directions 35") between *said second location* (location 34) and *said location* (location 33).

Sheha, 9:23-34; Williams-Decl., [0137].



Sheha, FIG. 5 (excerpt).

"Directional information" is a broad term. The '024 patent proposes many possible examples of "directional information"—one is "a map" of "the requested, the requesting user's location or both;" another is simply information allowing display of an "arrow...to indicate where the requested user's location is relative to" the requesting user's location. EX1001, 8:6-21, 7:57-61; Williams-Decl., [0138]. POSAs would have understood the position information Sheha's ODAS provides to be *directional information*. Williams-Decl., [0138].

In IPR2023-00097 regarding related patent 8,374,575, Mullen proposed construing "*directions*" as "instructions indicating how to navigate from one

location to another location.” IPR2023-00097, Paper 13 at 4. Sheha’s “driving directions and route information” that “[t]he ODAS...provid[es]” (Sheha, 11:49-51, FIG. 5) meet that construction. Williams-Decl., [0139].

[1F] only requires “*providing directional information*,” not sending directions to the wireless telephone. Rather than reciting that the provided “*directional information*” is or includes directions, [1F] more broadly only requires the “*directional information*” to be “*representative of directions*.” The ’024 patent’s specification never uses the phrase “representative of,” and thus has no description limiting how provided “*directional information*” can be “*representative of directions*.” Williams-Decl., [0140]. The ’024 patent’s specification also contains no limiting definition of the word “*providing*.” Williams-Decl., [0140]. Sheha teaches that by updating “each mobile device with the other’s position information,” the ODAS is “thus ***providing*** real-time driving ***directions*** and route information.” Sheha, 11:49-51. POSAs would have understood that by providing position information to the wireless telephone for the express purpose of generating directions to that position, Sheha’s ODAS is “*providing directional information...representative of directions*.” Sheha, 11:49-51; Williams-Decl., [0140].

Alternatively, generating *directions* at the ODAS and transmitting them to mobile devices would have been obvious to, e.g., reduce storage and/or processing

requirements at the mobile device, in view of POSAs' background knowledge. Williams-Decl., [0141]-[0148] (citing corroborating EX1051 ("Froeberg"), Abstract, FIG. 1, 1:40-65, 3:30-4:26, 7:5-46; EX1055 ("Chun"), FIG. 4, 2:28-34, 4:30-51, 7:40-8:4; EX1056 ("Stewart"), 8:12-37).

For example, Froeberg (EX1051), like Sheha, relates to "a cellular telephone providing a map and driving directions for a remote location associated with a remote telephone number." Froeberg, 1:6-10; Williams-Decl., [0141]. Like Sheha's mobile devices, Froeberg's "user telephone" provides its "location" via "GPS." Froeberg, 3:46-52. Froeberg teaches that in such a system, "the server" can "reverse geocode[] the geodetic location," "create[] a route and driving directions between the local" location "and the remote" location, and "transmit[] the driving directions...to the user telephone" for "display[]." Froeberg, 4:4-26; Williams-Decl., [0142]. POSAs would have been motivated to implement Sheha's ODAS to generate the claimed *directions* for transmission to the mobile devices in view of, e.g., Froeberg's teachings that doing so allows storage and/or processing requirements for generating *directions* to be implemented at the server-side, reducing such requirements locally at the mobile device. Froeberg teaches to implement driving-directions functionality via a server-side "reverse street segment geocoder" with "a database of geodetic coordinates and street network segments" and a server-side "route generator" (Froeberg, FIG. 5, 7:5-22), that then

need not be implemented locally at the user telephone (Froeberg, FIG. 4, 4:27-6:20). Williams-Decl., [0142]. POSAs would have reasonably expected success because Froeberg teaches how this may be successfully implemented in a system like Sheha's with a server serving client wireless telephones. Williams-Decl., [0142]-[0143].

2. Claim 2

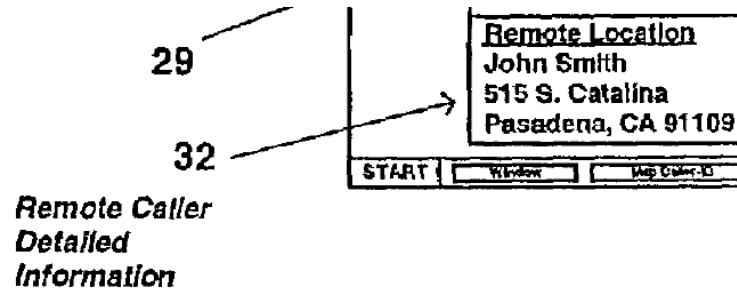
As discussed *supra* §VI.B.1.c ([1C]), it would have been apparent to POSAs that “defin[ing] a group of specific users that have access to” the user's location (Sheha, 11:63-12:7) includes adding users to the group list, and that one way to “enable position transfer permissions at anytime” (Sheha, 5:9-20) for another user is by *adding that user to said list of users*. Williams-Decl., [0149].

Alternatively, in view of POSAs' background knowledge discussed *supra* §VI.B.1.c ([1C]), it would have been obvious to allow *changing* the list by *adding an additional user*. Williams-Decl., [0150]-[0151] (citing corroborating EX1007 (“Randall”), [0509]; EX1022 (“Darling”), 23:3-13, 33:43-34:3; EX1035 (“Degnbol”), 9:34-10:3, 11:16-26; EX1044 (“Robertson”), FIG. 9, 8:11-14; EX1046 (“Lee”), FIG. 2D, 16:1-25).

3. Claim 3

As discussed *supra* §VI.B.1.f ([1F]), Sheha discloses displaying a Map Caller-ID as in FIG. 5, which includes directional information *transmitted* to the

requesting mobile-device user. Sheha, 11:44-51. The Map Caller-ID “may include local **address** position information.” Sheha, 7:27-31; *see also id.*, 2:43-48, 11:34-36, 14:42-46 (claim 7: “caller position information includes...address information”). Williams-Decl., [0152].



Sheha, FIG. 5 (excerpt).

Transmitting the address of a mobile device’s location from the server to another mobile device was also obvious as a well-known beneficial option with reasonable expectation of success. Froeberg, Abstract, 1:40-65, 3:30-4:26, 7:5-46; Williams-Decl., [0153]-[0160] (citing corroborating EX1056 (“Stewart”), 8:12-37; EX1054 (“Sandhu”), 4:34-5:8, 6:22-50; EX1057 (“Chern-005”), 3:7-14; EX1018 (“Meadows”), 4:61-5:19, FIG. 3).

4. Claim 4

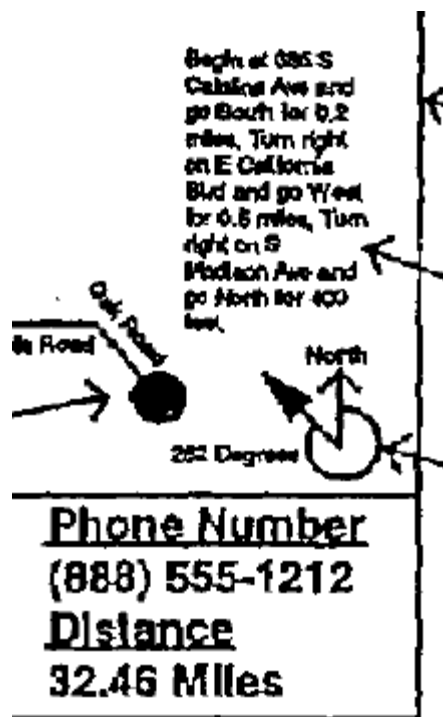
Sheha discloses that two moving mobile devices continuously send their updated positions to the ODAS. Sheha, 11:37-51. After device 18b’s initial *location* (*supra* §VI.B.1.b ([1B])) and device 18c’s initial *second location* (*supra* §VI.B.1.e ([1E])) are determined, the ODAS *determines a third location* when a

subsequent update indicates a new position for device 18c. Williams-Decl., [0161].

Additionally, device 18b's "user[]" can define a group of specific *users* that have access to" 18b's location (Sheha, 11:63-12:7), in which device 18c and another device ("18d," perhaps) may be among *said plurality of wireless telephones* whose users (plural) are in the group. Williams-Decl., [0162]. POSAs would have understood that Sheha's description of two-way location sharing between devices 18b and 18c (Sheha, 10:66-11:54) is a representative example that can also be performed between, e.g., device 18b and another user having device 18d, wherein the ODAS determines *a third location associated with* wireless telephone 18d. Williams-Decl., [0162]-[0163].

5. Claim 5

Sheha discloses "provid[ing]...*distance* measurements[]" between the local and remote positions," and "driving direction *distance* information" between the two *wireless telephones* in the Map Caller-ID. Sheha, 3:29-34, 9:23-39, FIG. 5; Williams-Decl., [0164].



Sheha, FIG. 5 (excerpt).

In the same way discussed *supra* §VI.B.1.f ([1F]), it would have been obvious to *determine the distance* to the destination server-side and provide it to the mobile device, which was well-known background knowledge with reasonable expectation of success. Williams-Decl., [0165]-[0170] (citing corroborating EX1056 (“Stewart”), 8:12-47; EX1041 (“Tobin”), [0018]-[0020], [0028]).

6. Claim 6

Sheha’s *remote system is capable of storing access rights* as discussed *supra* §VI.B.1.c ([1C]). Williams-Decl., [0171].

These *access rights* can allow “specific users [to] have access” to the *first wireless telephone’s location* “without...a telephone call” (Sheha, 11:55-12:7), which allows access *for an indefinite period of time* because the authorized *one of*

said list of users may access the location at any time, untethered to any call.

Williams-Decl., [0172]. Sheha also discloses a wireless telephone instructing the *remote system* to *allow access* to its location until “terminate[d]” by “manual intervention” or for “as long as [a] call is active,” which are both *indefinite periods of time* because their length is not known *a priori*. Sheha, 5:15-46; Williams-Decl., [0172]-[0173].

7. Claim 7

Sheha’s mobile device’s “privacy settings” that the ODAS “quer[ies]” and *stores* (*supra* §VI.B.1.c ([1C])) can “determine[] the ***period*** of the position transfer” as “a ***predetermined length of time***.” Sheha, 4:59-66, 5:9-14, 3:10-13; Williams-Decl., [0174]-[0175].

8. Claim 8

As discussed *supra* §VI.B.7 (claim 7), Sheha’s *remote system receives an indication of said specific period of time from said first wireless telephone* by “query[ing]” its “privacy settings.” Sheha, 4:59-66, 5:9-14, 5:40-46, 3:10-13; Williams-Decl., [0176]-[0177].

9. Claim 18

Sheha’s ODAS *stores and transmits to said first wireless telephone a location of a personal computer*. Sheha, 19:29-31 (“transmitting...position information of the communication device”), 19:41-43 (“communication device...is...a ***personal computer***”), 4:26-42 (landline telephone whose location is

transmitted is at location of “adjacent...*personal computer*”), 10:44-47 (same in “landline-to-mobile example”); Williams-Decl., [0178]-[0179].

10. Claim 20

Sheha describes each “mobile device receiv[ing]” the “other’s position information” from the ODAS, where a mobile device can be in “a motor vehicle” and connected to “an in-vehicle navigational device.” Sheha, 11:40-52, 4:52-58, 10:27-41, 12:8-41. In this scenario, the location of the mobile device that the ODAS (*remote system*) stores and transmits is a location of a car. Williams-Decl., [0180]-[0181].

VII. GROUND 2: SHEHA+SMITH

A. Smith (EX1023)

Smith describes a cellphone user interface, including contact-list functionality providing various information, including location information. Smith, 5:15-18, 6:53-7:3, 7:41-49, 10:29-11:4, FIG. 16; Williams-Decl., [0182]-[0185].

B. Sheha-Smith Combination

POSAs would have been motivated to include in Sheha’s wireless telephones conventional functionality as in Smith, including contact lists and manual input. Williams-Decl., [0186]. POSAs would have reasonably expected success because such functionalities were routine and conventional in wireless devices. Williams-Decl., [0186].

C. Mapping to Challenged Claims

1. Claim 23

Smith teaches that a contact list can contain EBC (Electronic Business Card) fields for each contact, including CLID (Calling Line Identification) information.

Smith, 6:53-7:3, 1:32-34, 8:25-31. The CLID and EBC information can be “*stored* at a central server...from which third party users may *download* the EBCs.”

Smith, 11:24-29, 6:46-52, 8:19-25. Based on these teachings, POSAs would have been motivated and reasonably expected success to implement Sheha-Smith (with or without Froeberg) to allow the *first wireless telephone user* to *download* from the *remote system a phone book corresponding to the user*—i.e., EBCs/CLIDs of contacts of interest to create the user’s contact list—including when the user has *a new wireless telephone* to which they want to import their existing contacts.

Williams-Decl., [0187]-[0193] (citing corroborating EX1007 (“Randall”), [0046], [0062], [0127]-[0129]; EX1069 (“Song”), 14:31-16:55).

2. Claim 24

a. [24PRE]-[24A]

Sheha meets [24PRE]-[24A] as discussed *supra* §§VI.B.1-VI.B.1.a ([1PRE]-[1A]). Williams-Decl., [0194]-[0195].

b. [24B]

In Sheha's system, *each one of a plurality of users is associated to a different one of a plurality of wireless telephones*, as discussed *supra* §VI.B.1.c ([1C]). Sheha, 3:8-10, 4:3-7, 8:25-53, 11:20-23; Williams-Decl., [0196].

A mobile-device user can request another mobile-device user's location by "dial[ing] or input[ting]" the other mobile device's "telephone number," which the ODAS "receives" via the "wireless network." Sheha, 10:66-11:51, 11:55-12:7. Thus, Sheha's *remote system receives from a first wireless telephone over said communications network a selection of one of the plurality of users*. Williams-Decl., [0197].

It was well-known to allow a wireless-telephone user to perform this selection using a displayed contacts list. Smith, 5:15-18, 9:42-55, FIGs. 15A-15B (below); Williams-Decl., [0198].

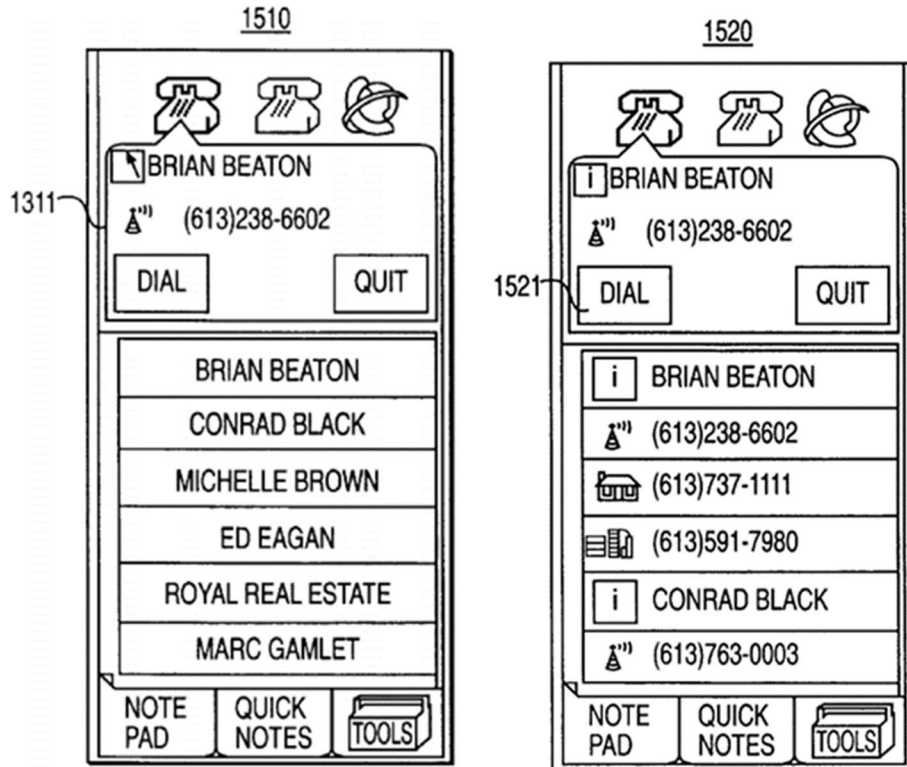


FIG. 15A

FIG. 15B

Sheha's wireless devices allow numeric and alphanumeric input. Sheha, 2:64-3:3; Williams-Decl., [0199]. Smith teaches that a user may manually scroll through a contact list to select a person to contact. Smith, 9:42-61, 10:67-11:3, FIG. 14; Williams-Decl., [0199]. It would have been obvious to include in Sheha's *first wireless telephone* this standard feature of *manually selecting* a user from a *display* of a contact list to allow for easily retrieving and selecting a contact of interest (e.g., to request the contact's location) from among multiple saved contacts. Williams-Decl., [0199]; *supra* §VII.B.

Manually selecting another user from a displayed contacts list was well-known as a suitable option with reasonable expectation of success for selecting a

contact of interest, including to access their location. Williams-Decl., [0200]-[0203] (citing corroborating EX1027 (“Han”), [0033]; EX1018 (“Meadows”), FIG. 4A, 5:30-47; EX1022 (“Darling”), 41:1-15).

c. [24C]

Sheha discloses that “every telephone account user has a username” (i.e., *a login*) “and **password**” that the ODAS *receives from the wireless telephone* and uses to verify that users are signed on to access various available services using authorization and authentication protocols. Sheha, 7:22-23, 8:25-53 (“user identification information” *indicative of* “username and password” is “sent to the ODAS” from the telephone), 11:20-23 (ODAS “**receives**...users’ account information...for both mobile devices” in mobile-to-mobile embodiment as in landline-to-landline embodiment), 11:55-12:7; Williams-Decl., [0204]-[0205].

d. [24D]

“When a mobile device’s position information is requested, [Sheha’s] system, based on privacy settings, responds with the appropriate position information to the requesting user’s device.” Sheha, 12:1-7. For example, permissions can be established by the mobile devices’ privacy information including “a group database and authorization and authentication protocols” by which a user “can define a group of specific users that have access to” the user’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; Williams-Decl., [0206]; *see supra* §VI.B.1.c ([1C]) (discussing Sheha’s permissions disclosures). The ODAS uses this privacy information to determine whether the target device has authorized the requesting device to obtain its location. Sheha, 3:4-14, 3:22-28, 4:8-18, 5:21-46, 8:42-53, 9:59-10:4; Williams-Decl., [0206]-[0207].

e. [24E]

As discussed *supra* §VII.C.2.c ([24C]), Sheha discloses that users provide username and password as part of Sheha’s authorization and authentication protocols to confirm their identity and that “using the authorization and authentication protocols a user can request the position of a mobile device.” Sheha, 8:40-53, 12:1-7; Williams-Decl., [0208]; *see also supra* §VII.C.2.d ([24D]). Using the “username and password,” the ODAS determines which “particular user is signed-on to the system” and whether the “user is genuine.” Sheha, 8:40-53. Thus, the *determination includes identifying said user...using said information indicative of said login and password.* Williams-Decl., [0208]-[0209].

f. [24F]

As discussed *supra* §VI.B.1.c ([1C]), §VII.C.2.d ([24D]), Sheha’s “users can define a group of specific users that have access to” the location of the user who defined the group; this is “accomplished by utilizing a group database and authorization and authentication protocols to identify users that are permitted to

access this information.” Sheha, 11:63-12:1. “When a mobile device’s position information is requested, the system” can use these “authorization and authentication protocols” to determine whether to “respond[] with the appropriate position information to the requesting user’s device.” Sheha, 12:1-7; *see also* Sheha, 3:4-14, 3:22-25, 4:8-18, 4:58-5:46. The “authentication and authorization protocols” use the username and password to “verify the level of authority [that particular] user is granted,” which includes the ODAS *determining whether* that user has permission to obtain the location of a requested device. Sheha, 8:40-50, 5:21-46, 11:63-12:7; Williams-Decl., [0210].

Claim 24 does not require the “*access rights*” provided to the “*user of said first wireless telephone*” to be exclusive to that device, and does not exclude the “*access rights*” from being provided to other devices as well. The ’024 patent itself states that “a user may...assign access rights to [a] group.” EX1001, 13:9-12, 3:22-24. Williams-Decl., [0211].

Alternatively, Sheha renders providing access rights to an individual user obvious because POSAs knew that “defin[ing] a group” (Sheha, 11:63-65) can include defining a group having only one member, even if other defined groups have multiple members. Williams-Decl., [0212] (citing corroborating EX1022 (“Darling”), 41:20-42:2). Additionally, allowing a user to specify access rights for individuals in addition to groups would have been obvious because doing so was

well-known as a beneficial option with reasonable expectation of success in a system like Sheha's. Williams-Decl., [0213]-[0216] (citing corroborating EX1007 ("Randall"), [0052], [0070], [0136], [0144]-[0146]; EX1015 ("Friedman"), 12:60-13:21; EX1022 ("Darling"), 2:10-15, 2:47-3:15, 32:39-33:32).

As discussed *supra* §VI.B.1.c ([1C]), Sheha teaches embodiments where the ODAS implements the "authorization and authentication protocols" and the "group database" described in 11:63-12:7 for *determining whether* the requesting user has *access rights*. See Sheha, 3:4-14, 4:8-18, 7:22-23, 8:42-53, 9:61-10:4; Williams-Decl., [0217]. Alternatively, implementing the group database and its utilization at the server would have been obvious as discussed *supra* §VI.B.1.c ([1C]).

Williams-Decl., [0218]-[0222] (citing corroborating EX1054 ("Sandhu"), 5:8-6:22; EX1007 ("Randall"), [0511]-[0514]; EX1015 ("Friedman"), 12:60-13:21; EX1022 ("Darling"), 3:1-5).

g. [24G]

Sheha teaches that two *wireless telephones* (e.g., 18b-18c) can both provide each other permission for location access. Sheha, 4:62-5:20, 11:3-8, 13:57-14:38; Williams-Decl., [0223]. As discussed *supra* §VI.B.1.c ([1C]), any "users can define a group of specific users that have access to this [location] information" as part of configuring privacy permissions (Sheha, 11:55-12:7). The ODAS *determines whether the first wireless telephone's* (e.g., 18b) *user has assigned*

these *location access rights* to the target device (e.g., 18c) before providing 18b's location to 18c (and vice-versa), in the manner discussed *supra* §VII.C.2.f ([24F]). Sheha, 11:65-12:7, 13:65-14:13; Williams-Decl., [0223]-[0224].

h. [24H]

Sheha's ODAS *transmits* a target wireless device's *location information* to the requesting *first wireless telephone* over wireless network 22. Sheha, 10:66-12:7 (e.g., 11:36-51), FIG. 3 (annotated below); Williams-Decl., [0225]-[0226].

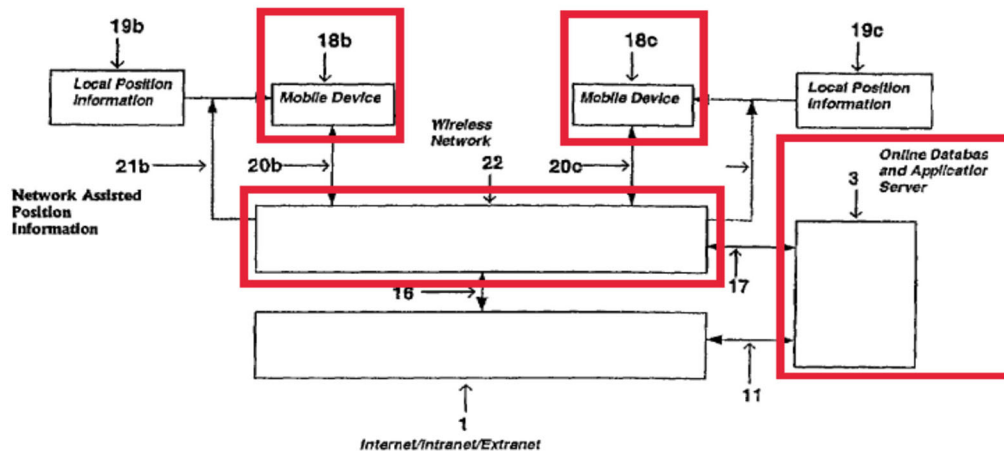


FIG. 3

3. Claim 25

Sheha's mobile device can "terminate" another mobile device's location access "abruptly due to manual intervention," meeting claim 25. Sheha, 5:14-15, 5:34-38; Williams-Decl., [0227].

Additionally, Smith teaches inputting *a selection* of another user in a contact list to modify that user's contact information. Smith, 10:7-16, 6:53-61; Williams-Decl., [0228]. Sheha allows a user to specify to the *remote system* which users are authorized to obtain location information as discussed *supra* §VI.B.1.c ([1C]), §§VII.C.2.d-VII.C.2.g ([24D]-[24G]), and it would have been obvious to do this by selecting users from a contact list like Smith's. Sheha, 4:58-5:20; 11:55-12:7; Williams-Decl., [0228]; *supra* §VII.B. Thus, it would have been obvious to *receive a selection* to allow a user to *modify* the list of authorized users as discussed *supra* §VI.B.1.c ([1C]). Sheha, 2:64-3:3, 5:14-38; Williams-Decl., [0228]. The contact list is where aggregated information about other users is accessed, which POSAs would expect to also include privacy permissions. Williams-Decl., [0228]-[0229].

4. Claim 26

As discussed *supra* §VII.C.2.g ([24G]), Sheha teaches that “both parties have access to each other's position information.” Sheha, 5:32-34, 11:49-50. The ODAS *transmits both wireless telephones' locations* to each other. Sheha, 5:32-34, 11:49-50, 14:11-13; Williams-Decl., [0230]-[0231].

5. Claims 27-29, 39, 41, 44

Claims 27-29, 39, 41, and 44 replicate recitations of claims 6-8, 18, 20, and 23, respectively, but with claim 24's “*first wireless telephone*” in place of claim 1's

“one of said users of said list of users,” and claim 24’s “one of said plurality of wireless telephones” in place of claim 1’s “first wireless telephone.” Williams-Decl., [0232]-[0237]. Sheha-Smith meets the limitations added by the following claims for the reasons discussed in the corresponding sections above because any of Sheha’s mobile devices (e.g., 18b-18c) can be the requesting or target device. Williams-Decl., [0232]-[0237].

Claim:	Limitation Addressed in Section:
27	§VI.B.6 (claim 6)
28	§VI.B.7 (claim 7)
29	§VI.B.8 (claim 8)
39	§VI.B.9 (claim 18)
41	§VI.B.10 (claim 20)
44	§VII.C.1 (claim 23)

VIII. GROUND 3: SHEHA IN COMBINATIONS WITH FROEBERG, SMITH, DEGNBOL, WOLLRAB, OBRADOVICH, BOLING, BECHTOLSHEIM

A. Degnbol (EX1035)

Degnbol describes notifying a user when another pre-selected user enters a pre-determined area or into proximity of a particular location. Degnbol, Abstract,

FIG. 1 (below). Users can establish various alert parameters, such as preferences specifying that alerts be generated when a buddy enters a predetermined range. Degnbol, 11:5-11. The predetermined range “may be associated with a geographic area” or “a direct distance.” Degnbol, 6:6-17. Williams-Deci., [0238]-[0241].

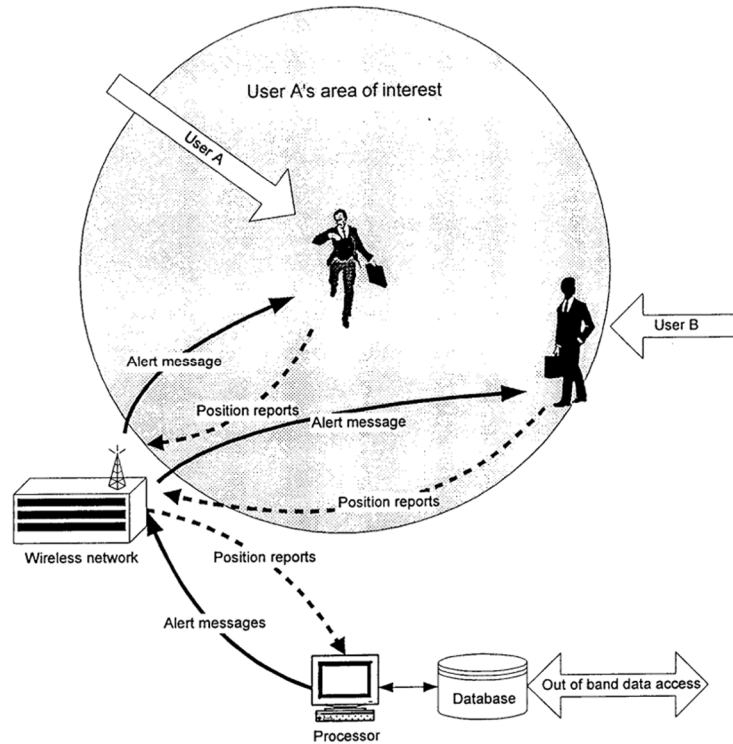


Fig. 1

B. Wollrab (EX1014)

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, 4:40-58, FIG. 4B. Wollrab 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. Williams-Decl., [0242].

C. Obradovich (EX1043)

Obradovich discloses a “system for communicating and retrieving position and position related data” using “Personal Communication Devices (PCDs)” like Sheha’s mobile devices. Obradovich, 1:16-17, 2:18-23, 2:60-63; Williams-Decl., [0243]. Obradovich’s system, like Sheha’s, allows users to request location information for destinations and other individuals. Obradovich, 3:45-47, 4:1-5; Williams-Decl., [0243]-[0244].

D. Boling (EX1074)

Boling describes a “combination personal audio device and emergency phone” that is “an AM/FM radio” that can transmit its “GPS” location to a “private service” via “cellular communications.” Boling, Abstract, 4:5-18, 5:6-7, 7:13-26, 9:30-64. Williams-Decl., [0245].

E. Bechtolsheim (EX1075)

Bechtolsheim describes “improved navigation programming” that assumes the user will drive part of a route, “park[] his/her vehicle[,]. . . and walk[] the

remaining distance to the final destination.” Bechtolsheim, 1:6-10, 9:30-35, 5:66-6:3, 7:44-47, 11:57-61. The programming can compute “the time to travel” each possible “combination driving/walking route” to select the best one.

Bechtolsheim, 19:17-36. The navigation information can be provided “on hand-held computer devices, such as...telephones.” Bechtolsheim, 20:45-47. Williams-Decl., [0246]-[0248].

F. Combinations of Sheha, Sheha-Froeberg, and Sheha-Smith with Degnbol, Wollrab, Obradovich, Boling, Bechtolsheim

Degnbol: POSAs would have been motivated to incorporate various location-based alerts to more effectively share location data in Sheha’s system, which also provides location-related notifications. *See, e.g.*, Sheha, 11:40-51, FIG. 4. POSAs, when considering when to send a location-related notification, would have looked to Degnbol to identify such triggers. Williams-Decl., [0249], [0065]-[0073]; *see, e.g.*, Degnbol, Abstract, 6:6-17, 11:5-11. POSAs would have reasonably expected success incorporating such alert techniques into Sheha/Sheha-Froeberg/Sheha-Smith because Sheha’s system identifies and shares location information and Degnbol illustrates additional examples of when and how to do so, which would easily be applied using Sheha’s hardware with minor software modifications. Williams-Decl., [0249].

Wollrab: POSAs would have been motivated to enhance Sheha/Sheha-Froeberg/Sheha-Smith to incorporate Wollrab’s teachings to store historical

location-tracking records to help trace where a device has been and locate a device whose tracking has been lost, such as for a parent locating a child. Wollrab, 3:21-27, 4:40-58; Williams-Decl., [0250]-[0252] (citing corroborating EX1012 (“Ganesh”), 7:3-20, 1:43-55). POSAs would have reasonably expected success because Sheha’s ODAS receives, stores, and provides updates of a target wireless device’s location. Williams-Decl., [0253].

Obradovich: POSAs would have been motivated and reasonably expected success, based on Obradovich’s teachings, to implement Sheha’s Internet-connected server (ODAS) in Sheha/Sheha-Froeberg/Sheha-Smith to function as a “home site” into which a user requesting another user’s location inputs “an identifier” and “password,” and to utilize a user’s location to validate credit requests. Obradovich, 26:13-56, 4:62-65, 24:50-25:30; Williams-Decl., [0254].

Boling: In light of Sheha’s teachings to share various mobile devices’ locations (Sheha, 12:58-60, 19:41-46, 12:1-7), POSAs would have been motivated and reasonably expected success to share any suitable mobile device’s location, such as a location-transmitting radio per Boling, in Sheha/Sheha-Froeberg/Sheha-Smith. Williams-Decl., [0255].

Bechtolsheim: Bechtolsheim teaches to provide a combination driving-and-walking route to the destination since the “user may not necessarily be able to park at the destination location,” and also to provide public-transportation route options

that may save the user time. Bechtolsheim, 1:27-50, 21:53-56. POSAs would therefore have been motivated to provide such routes in Sheha/Sheha-Froeberg/Sheha-Smith, and would have reasonably expected success based on Bechtolsheim's teachings in a similar system providing navigation functionality on mobile devices. Bechtolsheim, 20:45-47; Williams-Decl., [0256].

G. Mapping to Challenged Claims

1. Claims 9, 30

Claim 9 is obvious over Sheha-Degnbol/Sheha-Froeberg-Degnbol, and claim 30 is obvious over Sheha-Smith-Degnbol, because the "two-way wireless communication devices (e.g., telephones...) [have] the ability to *alert* user 'A's' communication device when a user 'B' enters the proximity of user 'A.'"

Degnbol, 18:27-33, 10:17-33. The users are part of a list of users (a Buddy List).

Degnbol, 9:32-34; Williams-Decl., [0257]. Degnbol teaches that alerts are transmitted by a remote "processor," which is a *remote system* like Sheha's.

Degnbol, FIG. 1 (annotated below), 21:3-6; Williams-Decl., [0257]-[0258].

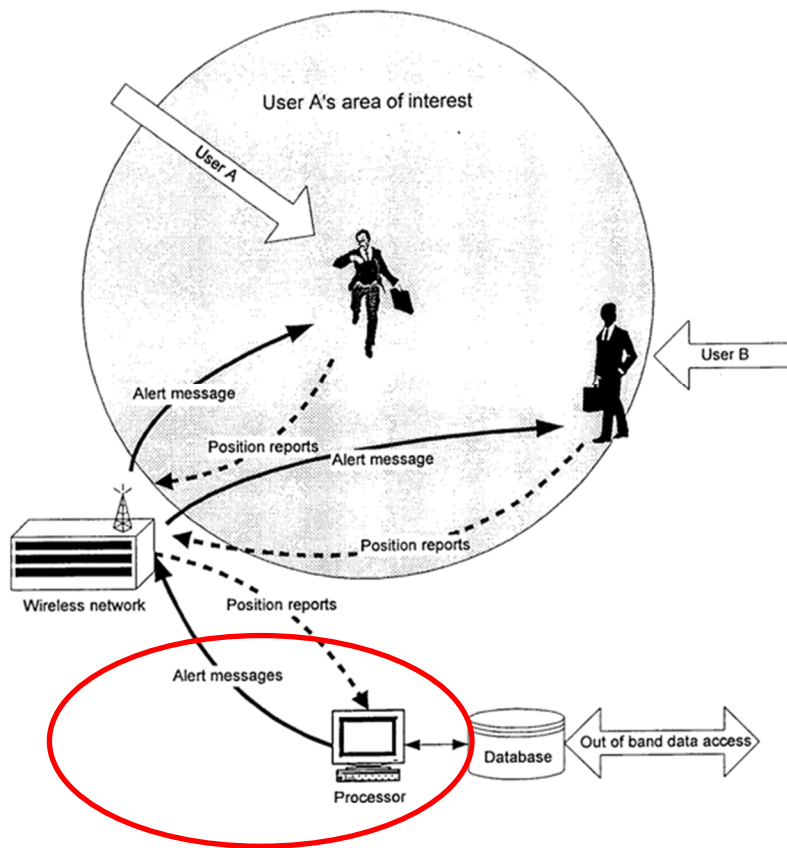


Fig. 1

2. Claims 10, 31

Claim 10 is obvious over Sheha-Degnbol/Sheha-Froeberg-Degnbol, and claim 31 is obvious over Sheha-Smith-Degnbol. Sheha describes the *remote system receiving a request* to provide data based on a device location (Sheha, 6:15-16), and Degnbol teaches to provide alerts by the *remote system* as discussed *supra*

§VIII.G.1 (claims 9, 30). Williams-Decl., [0259]. Thus, in Sheha-Degnbol/Sheha-Froeberg-Degnbol/Sheha-Smith-Degnbol, these *alerts* are provided by the *remote system* based on *a request received* from the user device for an alert based on another device's location. Degnbol, 11:1-14; Williams-Decl., [0259]-[0260].

3. Claims 11, 32

Claim 11 is obvious over Sheha-Degnbol/Sheha-Froeberg-Degnbol, and claim 32 is obvious over Sheha-Smith-Degnbol, based on Degnbol's *geographic-area-based alerts*: "user 'A' may choose to...receive[] alerts" "associated with a *geographic area*." Degnbol, 11:5-11, 6:6-8. The user can "set[] various preferences...directly from the...cellular phone," including to "select[]" a "*geographic area*" to be alerted when another user's *wireless telephone* "arriv[es] at a given area." Degnbol, 9:34-10:2, 11:1-3, 6:1-8, 13:19-21; Williams-Decl., [0261]-[0262].

4. Claims 12, 33

Claim 12 is obvious over Sheha-Degnbol/Sheha-Froeberg-Degnbol, and claim 33 is obvious over Sheha-Smith-Degnbol, based on Degnbol's teaching to "inform[]" a user at his *wireless telephone* "that he has been the subject of an alert to another user" (e.g., when the other user *locates* his *wireless telephone* by being informed that his location is nearby). Degnbol, 21:4-6, 18:27-31; Williams-Decl., [0263]. It would alternatively have been obvious to *transmit an alert* whenever

another user requests to access the *wireless telephone*'s location (whether or not as part of an alert), as this was a known useful option, even when the requesting entity already has location access rights. Williams-Decl., [0264]-[0265] (citing corroborating EX1071 ("Rice"), 9:26-35, 7:40-49, 9:36-51, 12:20-33).

5. Claims 13, 34

Claim 13 is obvious over Sheha-Wollrab/Sheha-Froeberg-Wollrab, and claim 34 is obvious over Sheha-Smith-Wollrab, based on Wollrab's teaching that "multiple sequential sets of remote sensing location coordinates are *stored*...to create a *historical tracking record*" that "can be retrieved later...for...tracking member movements or locating a lost member." Wollrab, 3:20-27, 4:54-58, FIG. 4C; Williams-Decl., [0266]. Wollrab's wireless devices share their locations via a *remote system* ("[s]atellite device 12"). Wollrab, 4:1-23. In Sheha's system, this functionality is performed by the ODAS (discussed *supra* §VI.B.1 (claim 1), §VII.C.2 (claim 24)). Williams-Decl., [0267]. Storing a *history of locations* server-side was also a well-known design option. Williams-Decl., [0268]-[0269] (citing corroborating EX1019 ("Thomas"), 7:34-49, 5:58-6:37; EX1012 ("Ganesh"), 7:3-65, FIG. 1, 4:8-28). POSAs would have reasonably expected success because Sheha's *remote system* already receives, stores, and provides updates of a device's location. Williams-Decl., [0270]-[0271].

6. Claims 14, 35

Claim 14 is obvious over Sheha-Wollrab/Sheha-Froeberg-Wollrab, and claim 35 is obvious over Sheha-Smith-Wollrab. Wollrab teaches that the *remote system transmits* to a member device *a location from the stored history of locations* “for such purposes as...locating a lost member.” Wollrab, 3:21-27, 4:54-58 (“location 44-5”), FIG. 4C:

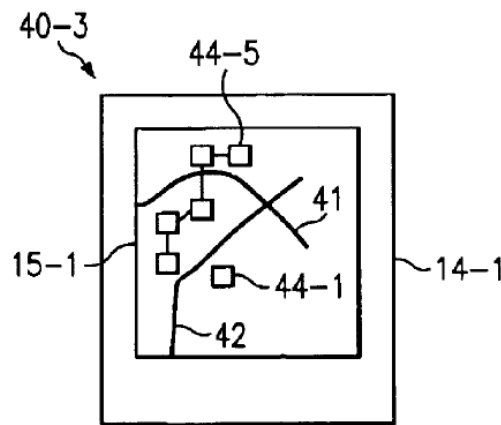


FIG. 4C

From this teaching and background knowledge, POSAs would have understood that in Wollrab’s scenario where the device’s tracking was “lost,” that may often be because the tracked device *is turned off*. Williams-Decl., [0272]-[0276] (citing corroborating EX1012 (“Ganesh”), 7:3-20, 6:55-56).

7. Claims 15, 36

Claim 15 is obvious over Sheha-Obradovich/Sheha-Froeberg-Obradovich, and claim 36 is obvious over Sheha-Smith-Obradovich. Sheha’s *remote system provides said location after* the requesting user *inputs* their *login and password* to

the ODAS, as discussed *supra* §VII.C.2 (claim 24). The ODAS is an Internet-connected server (Sheha, FIG. 1), and Obradovich teaches that such an Internet server functions as a “home site computer system” for the target devices, into which the requesting user inputs “an identifier” and “password” to “authenticate the[ir] identity” for accessing the target user’s information. Obradovich, 26:13-56. Thus, POSAs would have found it obvious to implement Obradovich’s teachings in Sheha/Sheha-Froeberg/Sheha-Smith to accept a user’s *login and password as input into a website* via their *device*. Williams-Decl., [0277]-[0278]. Doing so was well-known for accessing other users’ location information. Williams-Decl., [0278]-[0282] (citing corroborating EX1012 (“Ganesh”), 5:1-6:14; EX1019 (“Thomas”), 5:49-57, 6:53-7:33, FIG. 6).

8. Claims 16, 37

Claim 16 is obvious over Sheha-Degnbol/Sheha-Froeberg-Degnbol, and claim 37 is obvious over Sheha-Smith-Degnbol. Degnbol describes “determining the position of” “communication units,” which include “wireless telephone[s],” “personal digital assistants,” and “*wristwatches*.” Degnbol, 4:1-31, 7:1-17, 6:22-23, 27:14-16; Williams-Decl., [0283]. In light of Sheha’s ODAS *storing and transmitting the location of* various communication devices like those Degnbol lists (Sheha, 9:50-53), it would have been obvious to *store and transmit* any suitable device’s *location*, including *a watch*. Williams-Decl., [0283]-[0284].

9. Claims 17, 38

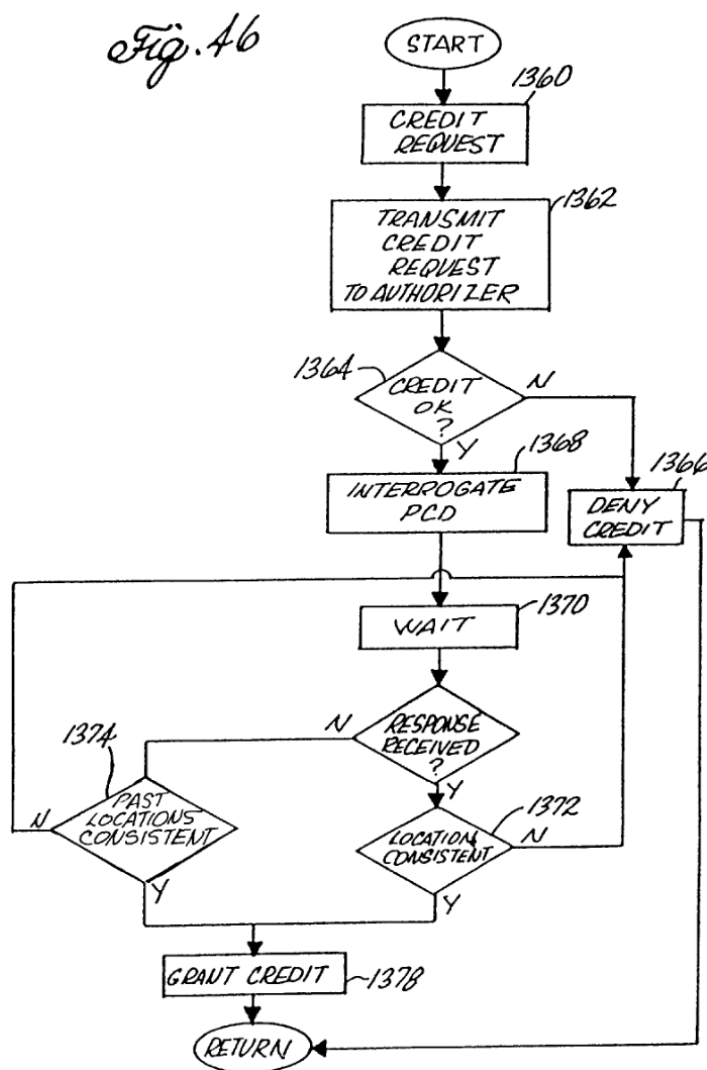
Claim 17 is obvious over Sheha-Degnbol/Sheha-Froeberg-Degnbol, and claim 38 is obvious over Sheha-Smith-Degnbol. Degnbol teaches that the *watch* discussed *supra* §VIII.G.8 (claims 16, 37) is “[a] unit in the set” of “**communication** units” whose “position” is determined by “GPS,” etc. Degnbol, 4:1-5:11, 6:22-7:30. Sheha teaches that such GPS-enabled (Global **Positioning System**) mobile communication devices calculate their position and communicate it to the *remote system* (ODAS) *over said communications network*. Sheha, 10:1-16, 11:12-51; Williams-Decl., [0285]-[0286].

10. Claims 19, 40

Claim 19 is obvious over Sheha-Boling/Sheha-Froeberg/Boling, and claim 40 is obvious over Sheha-Smith-Boling. Boling teaches, and it was background knowledge, that a mobile device having position-reporting capability can be a *radio*. Boling, Abstract, 4:5-18, 5:6-7, 7:13-26, 9:30-64; Williams-Decl., [0287] (citing corroborating EX1076 (“Lelievre”), Abstract, [0047], FIG. 5). In light of Sheha’s *remote system storing and transmitting* various mobile devices’ *locations* to a requesting mobile device (Sheha, 12:58-60, 19:41-46, 12:1-7), it would have been obvious to *store and transmit* any suitable mobile device’s *location*, such as a *radio* per Boling. Williams-Decl., [0288]-[0289].

11. Claims 21, 42

Claim 21 is obvious over Sheha-Obradovich/Sheha-Froeberg-Obradovich, and claim 42 is obvious over Sheha-Smith-Obradovich. Obradovich teaches to *provide the first wireless telephone's "location information" to a "credit authorizer"* to validate its user's "request for credit." Obradovich, 4:62-65, 24:50-25:30, FIG. 46:



POSAs would have been motivated and reasonably expected success to incorporate this into Sheha/Sheha-Froeberg/Sheha-Smith to “make use of [Sheha’s] location monitoring capability” in “determining the validity of credit requests.” Obradovich, 24:51-54; Williams-Decl., [0290]-[0292].

12. Claims 22, 43

Claim 22 is obvious over Sheha-Bechtolsheim/Sheha-Froeberg-Bechtolsheim, and claim 43 is obvious over Sheha-Smith-Bechtolsheim. Bechtolsheim teaches to compute the *time to reach* the destination via various routes *according to two types of travel: walking and driving*, since the “user may not necessarily be able to park at the destination location.” Bechtolsheim, 1:27-50. Bechtolsheim further teaches that the user may wish to “choose one” of the available driving-parking-walking routes from a “displayed list” based on, e.g., “walking distance” (Bechtolsheim, 18:48-19:3), and that the user can “select[]” whether the user cares more about “time to travel” than “distance” (Bechtolsheim, 19:17-36). It would therefore have been obvious to provide the user with travel-time information for a combination driving/walking route to another mobile device’s *location* in Sheha/Sheha-Froeberg/Sheha-Smith to aid the user’s selection. Williams-Decl., [0293]. Bechtolsheim teaches to “***provide[]***” the navigation information to the user’s device from “a ***remote*** location” where it is computed. Bechtolsheim, 5:16-19.

Additionally, Bechtolsheim teaches to “compare[]” the “travel time using public transportation” (which POSAs would have understood typically includes *subway*) “to the travel time using a private vehicle” (*driving*). Bechtolsheim, 21:26-59. It would therefore have been obvious to provide the user with travel-time information for both *subway* and *driving* routes to allow the user to select one, which also meets claims 22 and 43. Williams-Decl., [0294]-[0295].

IX. GROUND 4-5: RANDALL, WITH OR WITHOUT FROEBERG

A. Randall (EX1007-EX1008)

Randall is an international (PCT) application filed August 22, 2001, and published in the international stage on February 28, 2002, as EX1008 (in English, designating the United States) and then in the U.S. national stage as EX1007.

Randall is thus prior art under pre-AIA 35 U.S.C. §102(a) and §102(e). Citations herein are to the U.S. publication (EX1007) paragraph numbers for convenience; the identical description is present in the international publication (EX1008).

Williams-Decl., [0080]-[0082] (mapping paragraph numbers of EX1007 to page numbers of EX1008).

Randall relates to “enabling a wireless information device to access data services,” using “an extensible framework...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]. 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], [0085]-[0115]; Williams-Decl., [0296]-[0300].

“As 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]; Williams-Decl., [0301]-[0304].

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; Williams-Decl., [0305]-[0306]. 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].

B. Mapping to Challenged Claims

1. Claim 1: [1PRE]

Randall’s “**system**” allows “wireless applications to access and share information.” Randall, [0028], [0052]-[0053], [0071]; Williams-Decl., [0307].

a. [1A]

Randall’s system includes an “internet **server**[.]” (“**i-server**”)—a “**server** on the Internet”—which POSAs would have known teaches a *remote system comprising a server*. Randall, [0029], [0046], [0503], [0053], [0030] (“**remote, extensible database**”), FIG. 4 (showing the system’s servers located remotely from the wireless devices); Williams-Decl., [0308].

Randall’s i-server communicates with “**wireless** information device[s],” which can be “radio **telephones**, smart **phones**,” etc. Randall, [0002]. These *wireless telephones* “**communicate...over**” a “**network**, such as GSM or UMTS, CDMA and WCDMA” (i.e., *communications network*) to “access information on the[] databases” hosted on the “internet servers.” Randall, [0002], [0029], [0046],

[0049], [0067] (“server passes...information” to “Bob’s device”), [0105], [0509], p. 24 (“People tracking”). Thus, the *remote system is capable of communicating data with the wireless devices over a communications network*. Williams-Decl., [0309]-[0310].

b. [1B]

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”); Williams-Decl., [0311]. Alice’s device is an exemplary *first wireless telephone* (as is Bob’s). Williams-Decl., [0311].

For example, “Alice stores her data on a server on the Internet.” Randall, [0053]. As shown in Table 1 (highlighted below), 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 “Location information”); Williams-Decl., [0312]-[0313].

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

“That *location data can be obtained* via [Alice’s] GPS wireless information device, which transmits location information to the i-server.” Randall, p. 24 (Table 4, “People Tracking”). Williams-Decl., [0314]-[0315].

c. [1C]

In Randall’s system, each user is “authenticat[ed]...when they access their data” using their “WID and password/passphrase.” Randall, [0380]. “Alice’s i-

Data” is in a “database” on the “i-server” which she can access via her “mobile device to allow her to manage her data.” Randall, [0502]-[0505]; Williams-Decl., [0316]. Alice thus has *a profile associated with her first wireless telephone* in the i-server database. Williams-Decl., [0316].

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 discussed *supra* §IX.B.1.b ([1B]) and shown in Table 1, one field in Alice’s “i-Data” is her device’s “GPS *location*,” which she can designate as accessible to a particular *list of users*—e.g., users whom she has assigned to the “i-Group” called “partner” (Table 1 example), or she could designate it as accessible to a different i-Group, such as “friends” or “family.” Randall, [0503]-[0512], [0021] (“user’s friends or parents etc” can be “allowed...to track his or her location”); Williams-Decl., [0317]. Such “sensitive information” as location 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)”). Such “[a]ccess rights can be associated with individual entities, and can also be associated with groups of entities.” Randall, [0070], [0052], [0146]. Thus, Alice can designate *a list of users for a profile associated with said first wireless*

telephone (Alice’s iData profile) that are allowed to access said location.

Williams-Decl., [0317].

A user’s “contacts database” on Randall’s i-server—called their “Universe”—“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]. “Table 2” is “an example” of “Alice’s Universe, which shows how contacts are assigned to...iGroup[s], thus defining the level of access they get to Alice’s data.” Randall, [0511].

TABLE 2

<u>ALICES UNIVERSE</u>		
NAME	DETAILS	i-GROUP
Aardvark plumbers	Number, email, address etc . . .	contractors
Bently, John	Number, email, address etc . . .	friend
Coppermill Corp	Number, email, address etc . . .	contractors
Davies, Charles	Number, email, address etc . . .	work 1
Entwistle, Peter	Number, email, address etc . . .	partner, friend
Greenfield Ventures	Number, email, address etc . . .	business 1

Randall teaches that at least some of these users in Alice’s Universe have their own wireless information devices. Randall, [0512], p. 25 (user’s “address book” of contacts includes “mobiles you regularly phone”), [0511], Table 2 (showing “Number” of each contact). Thus, Alice can assign wireless-user contacts to the i-Group designated to have access to her GPS location, such that *each user of said list of users is representative of one of a plurality of wireless telephones.* Williams-Decl., [0318]-[0319].

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’” (or, POSAs would have understood, another i-Group—e.g., “partner”). Randall, [0509]. This is a “method[] of making contacts into members of a particular i-Group”—i.e., *changing the list of users*—which Alice can direct the *remote system* to do via her device (i.e., *at the direction of said first wireless telephone*) to provide permission for Bob’s device to access her device’s location, making Bob one of the *users* of the *list of users*. Randall, [0509], [0495]; Williams-Decl., [0320]-[0321].

d. [1D]

“When one of the people in [Alice’s contact] list...looks at Alice’s ADS Number, (using...their...wireless information device[])”—e.g., when Bob’s device requests Alice’s location information—“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”); Williams-Decl., [0322]. “[T]he 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.” Randall, [0049]. “Once 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”); Williams-Decl., [0322]-[0324].

e. [1E]

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. Williams-Decl., [0325]; Randall, [0067] (“Bob also has stored on the server his own personal information”), [0510] (“Bob’s details” are downloaded to “Alice’s...device” just as “Alice’s contact” is provided to “Bob’s device[]”), [0053] (“Consider Alice...and Bob”—language introducing Alice and Bob as generic examples). Randall 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).” Randall, [0144], [0136], [0143]. Thus, Bob can also “choose to subscribe to [the] service which allowed others to track his...location” (Randall, [0021]), wherein the *remote system determines a second location associated with Bob’s wireless telephone*. Williams-Decl., [0325]-[0326].

f. [1F]

Randall provides a “Route finder” service, “similar to GPS tracking in cars, but for mobile phones. You identify where you want to go, the phone knows where you are already. It can therefore give you *step by step instructions* on how to get

there (eg. Turn left at the next lights. Carry on 100 metres. Go straight over the roundabout).” Randall, p. 29. These “instructions” meet Mullen’s proposed construction of *directions* in IPR2023-00097 on related patent 8,374,575 as “instructions indicating how to navigate from one location to another location” (IPR2023-00097, Paper 13 at 4). Williams-Decl., [0327]-[0328].

Further, Randall provides a “Rendezvous” service “on your mobile phone to help you meet friends and family” by “hav[ing] your location visible to others” on “your phones.” Randall, p. 29. Randall teaches that “your phone can display a map of the area you are standing in” (Randall, p. 29) and also “show [your] position” and “the position of [another] user” (Randall, [0021]). POSAs would have understood and found it obvious from these disclosures that another user’s position (e.g., Alice’s location) can be “where [Bob] want[s] to go” in Randall’s “Route finder” (Randall, p. 29). Williams-Decl., [0329]-[0330]; *see supra* §IX.A (discussing Randall’s teachings that applications share information and coordinate to provide services).

Thus, Randall teaches, or at minimum renders obvious, *providing directional information to Bob’s wireless telephone, representative of directions between Bob’s second location and Alice’s location*. Williams-Decl., [0331]-[0332].

To the extent [1F] requires the *remote system* to calculate the *directions* and send them to the *wireless telephone* (which [1F] does not require, as discussed *supra* §VI.B.1.f), generating the *directions* between Bob's and Alice's locations at the i-server's *remote system* and transmitting them to Bob's device would have been obvious to, e.g., reduce storage and/or processing requirements at the wireless device[s], in view of POSAs' background knowledge of the well-known design choice and reasonable expectation of success to do so. Williams-Decl., [0333] (citing corroborating EX1051 ("Froeberg"), Abstract, FIG. 1, 1:40-65, 3:30-4:26, 7:5-46; EX1055 ("Chun"), FIG. 4, 2:28-34, 4:30-51, 7:40-8:4; EX1056 ("Stewart"), 8:12-37).

For example, Froeberg (EX1051), like Randall, relates to "a cellular telephone providing a map and driving directions for a remote location associated with a remote telephone number." Froeberg, 1:6-10; Williams-Decl., [0334]. Like Randall's wireless devices, Froeberg's user telephone provides its "location" using GPS. Froeberg, 3:46-52. Froeberg teaches that in such a system, "the server" can "reverse geocode[] the geodetic location," "create[] a route and driving directions," and "transmit[] the driving directions...to the user telephone" for "display[]." Froeberg, 4:4-26; Williams-Decl., [0334]. POSAs would have been motivated to implement Randall's *remote system* to generate the claimed *directions* for transmission to Bob's wireless device in view of, e.g., Froeberg's teachings that

doing so can reduce storage and/or processing requirements at the mobile device, as discussed *supra* §VI.B.1.f. Froeberg, FIGs. 4-5, 4:27-6:20, 7:5-22; Williams-Decl., [0334]. POSAs would have reasonably expected success because Froeberg teaches how this may be successfully implemented in a system like Randall's with a server serving client wireless telephones. Williams-Decl., [0334]-[0335].

2. Claim 2

As discussed *supra* §IX.B.1.c ([1C]), Randall teaches that *said changing comprises* Alice “promoting Bob from” one i-Group to another that has access to Alice's location, thus *adding an additional user to said list of users*. Randall, [0503]-[0512]; Williams-Decl., [0336]-[0337].

3. Claim 3

When Bob accesses Alice's data on the i-server, he “see[s] a view onto Alice's personal data” (i.e., the *remote system transmits* Alice's data to Bob) that is a subset of, e.g., Table 1. Randall, [0512], *compare* Table 3 ([0512]) *with* Table 1 ([0505]); Williams-Decl., [0338]. In Table 1, an example “GPS location” is “London W1, Seymour St.,” which is *the address of Alice's location*. Randall, [0505]; Williams-Decl., [0338].

Additionally, *transmitting the address* of a wireless device's *location* from the server to another wireless-device user who is accessing that location would have been obvious as a well-known beneficial option with reasonable expectation

of success in a system like Randall's. Froeberg, Abstract, 1:40-65, 3:30-4:26, 7:5-46; Williams-Decl., [0339]-[0340] (citing corroborating EX1056 ("Stewart"), 8:12-37; EX1054 ("Sandhu"), Abstract, 4:34-5:8, 6:22-50; EX1057 ("Chern-005"), 3:7-14; EX1018 ("Meadows"), 4:61-5:19, FIG. 3).

4. Claim 4

As discussed *supra* §IX.B.1.c ([1C]), Alice can set her *list of users* to include any number of users corresponding to *a plurality of wireless telephones*. One example may be Bob; another may be "Peter" in exemplary Table 2. Randall, [0505] (Table 1), [0511] (Table 2); Williams-Decl., [0341].

Randall teaches that any wireless-device user's "location data can be...transmit[ted]...to the i-server." Randall, p. 24 ("People tracking"). Thus, the *remote system* can *determine a third location associated with, e.g., Peter's one of said plurality of wireless telephones*. Williams-Decl., [0342].

Randall's *remote system* also *determines a third location* when Bob's device "up-date[s]" the i-server with a new location subsequent to the *second location* discussed *supra* §IX.B.1.e ([1E]). Randall, p. 24 ("People tracking"); Williams-Decl., [0343]-[0344].

5. Claim 5

Randall's "Old buddy finder...alerts Bob when a contact happens to be *within a defined proximity*." Randall, p. 24. POSAs would have understood that

one of a finite number of known options for determining whether Alice's and Bob's devices are within a defined proximity involves *determining the distance between the two wireless telephones*. Williams-Decl., [0345].

Additionally, as discussed *supra* §IX.B.1.f ([1F]), POSAs would have understood that Alice's location can be "where [Bob] want[s] to go" in Randall's "Route finder," which can "give [Bob] step by step instructions on how to get there (eg. Turn left at the next lights. Carry on 100 metres....)." Randall, p. 29. POSAs would have understood that once Bob is on the final leg of the route, the system will determine the distance between Alice's and Bob's devices to tell Bob how many more "metres" to "[c]arry on." Williams-Decl., [0346]. As discussed *supra* §IX.B.1.f ([1F]), it would have been obvious for these directions, including the distance, to be *determined* at the *remote system* for providing to the *wireless telephones*. Williams-Decl., [0346].

Alternatively, it would have been obvious to implement Randall's "Route finder" to *determine the distance between Alice's and Bob's wireless telephones* because it was conventional for "system[s] similar to GPS tracking in cars" (Randall, p. 29) to determine the distance to the desired destination to aid the user in planning their trip. Williams-Decl., [0347]-[0353] (citing corroborating EX1056 ("Stewart"), 8:12-37; EX1025 ("Wako"), FIG. 7, 9:18-28, 2:12-34;

EX1067 (“Mura-Smith”), 8:45-61, FIGs. 8A-8B; EX1068 (“Deworetzki”), 4:55-5:7, FIG. 2; EX1041 (“Tobin”), [0028], FIG. 1C).

Determining the distance to the destination server-side and providing it to the wireless device was well-known background knowledge with reasonable expectation of success. Williams-Decl., [0354]-[0355] (citing corroborating EX1056 (“Stewart”), 8:12-47; EX1041 (“Tobin”), [0018]-[0020], [0028]).

6. Claim 6

Randall teaches that the *access rights* Alice provides Bob (which the *remote system stores* as discussed *supra* §IX.B.1.c ([1C]) can allow Bob to *access* Alice’s *location* for a time period that Alice can “extend...to ‘forever’”—*i.e., an indefinite period of time*. Randall, [0144]; Williams-Decl., [0356]-[0357].

7. Claim 7

Randall teaches that Alice can “select the person and allow access” (as discussed *supra* §IX.B.6 (claim 6)) for only “a pre-defined *period of time*.” Randall, [0144], [0143] (allowing location access for “*specific period of time*”); Williams-Decl., [0358]-[0359].

8. Claim 8

Randall teaches that “[t]he user” can “change a visibility setting” for “location information” “for a *specific period of time*” which is “easily extensible by the user.” Randall, [0141]-[0144]. Thus Alice can use her *first wireless telephone* to indicate *said specific period of time* to be applied by the *remote*

system (as discussed *supra* §§IX.B.6-IX.B.7 (claims 6-7)). Williams-Decl., [0360]-[0361].

9. Claim 15

Randall teaches that the *remote system* can *provide Alice's location* to any *device user* on Alice's authorized *list* (discussed *supra* §§IX.B.1.c-IX.B.1.d ([1C]-[1D])), *after* that user *inputs a login and password* as Randall explains using Bob as a generic example (as discussed *infra* §IX.B.14 (claim 24)). Randall teaches that “a variety of terminals and devices” and “**web browsers**[.]” “access an entity's database” on the “server.” Randall, [0365], [0049]. POSAs would have found it obvious that an authorized user logging in to access Alice's data from a “web browser” will be authenticated by *inputting their login and password into a website*, which is what web browsers access. Williams-Decl., [0362]-[0363]; *see also* Randall, [0046] (“web page” representing user's “database” on “internet server[.]”).

10. Claim 18

Randall's “wireless information devices” can “include[.]...**personal computers**.” Randall, [0002]. Randall teaches that any user's “GPS wireless information device” can “transmit[.] location information to the i-server” for *transmitting* to “authorised people” (Randall, p. 24 “People tracking”), thus teaching that the *remote system* can *store and transmit* to Alice's *first wireless*

telephone a location of a personal computer if that device's user has authorized Alice. Williams-Decl., [0364]-[0366] (citing EX1070 ("Behr"), 8:20-49, FIG. 1, corroborating POSAs' background knowledge of wireless laptop personal computers being GPS-enabled for location tracking).

11. Claim 19

Randall's "wireless information device[s]" include "**radio** telephones," and any wireless information device's *location* can be *stored and transmitted* by the i-server *to said first wireless telephone* as discussed *supra* §IX.B.10 (claim 18).

Randall, [0002], p. 24 ("People tracking"). Randall's *remote system* can thus *store and transmit a location of a radio*. Williams-Decl., [0367]. It would alternatively have been obvious to *store and transmit a location of* any type of location-transmitting *radio*, which were well-known in POSAs' background knowledge. Williams-Decl., [0368]-[0371] (citing corroborating EX1074 ("Boling"), Abstract, 4:5-18, 5:6-7, 7:13-26, 9:30-64; EX1076 ("Lelievre"), Abstract, [0047], FIG. 5); *supra* §VIII.G.10.

12. Claim 20

Because Randall teaches to provide a "Route finder" service "similar to GPS tracking in cars, but for mobile phones" (Randall, p. 29), it would have been apparent to POSAs that a user may be using the mobile phone in *a car*, as users would benefit from such instructions while driving. Williams-Decl., [0372]. The

mobile phone's location is then *a location of a car*, which can be *stored* by Randall's *remote system* and *transmitted* to Alice's device if Alice is authorized by that user. Williams-Decl., [0372].

Additionally, POSAs would have understood that a typical implementation of a "radio telephone[]" (Randall, [0002]) as discussed *supra* §IX.B.11 (claim 19) was a car phone, whose location is *a location of a car*. Williams-Decl., [0373]-[0376] (citing corroborating EX1077 ("Aisaka"), 1:14-23; EX1078 ("Kuge"), 1:1-34).

13. Claim 23

As discussed *supra* §IX.B.1.c ([1C]), Alice's "Universe" is her "contacts database" which lists "all the entities known to" Alice with their contact information—i.e., *a phone book corresponding to Alice*. Randall, [0511], Table 2, [0509]-[0510], [0060], p. 25 ("your phone's address book"); Williams-Decl., [0377]. As discussed *infra* §IX.B.14.b ([24B]), the "Universe" is stored in a "database" at the i-server (*remote system*) and also "cached on" the user's "wireless information devices." Randall, [0511], p. 23 ("Auto-entering address book"), [0062]-[0063], [0069]. Alice's data on the i-server is "a 'master' version" of which "local copies" can be "made available to any *new devices* that a user adds." Randall, [0046], [0062], [0129]. Thus, the *remote system* can *store and*

download Alice's phone book to a new wireless telephone of Alice. Williams-Decl., [0377]-[0379].

14. Claim 24

a. [24PRE]-[24A]

Randall meets [24PRE]-[24A] as discussed *supra* §§IX.B.1-IX.B.1.a ([1PRE]-[1A]). Williams-Decl., [0380]-[0381].

b. [24B]

As discussed *supra* §IX.B.1.b ([1B]), Bob's wireless information device in Randall's system is an exemplary *first wireless telephone* (as is Alice's). Williams-Decl., [0382].

Randall's wireless device can have "a directory application" that "contains a user's contacts list." Randall, [0009]. As discussed *supra* §IX.B.1.c ([1C]), a user's "contacts database" is called their "Universe," and "Table 2" is "an example" of "Alice's Universe." Randall, [0511].

TABLE 2

<u>ALICES UNIVERSE</u>		
NAME	DETAILS	i-GROUP
Aardvark plumbers	Number, email, address etc . . .	contractors
Bently, John	Number, email, address etc . . .	friend
Coppermill Corp	Number, email, address etc . . .	contractors
Davies, Charles	Number, email, address etc . . .	work 1
Entwistle, Peter	Number, email, address etc . . .	partner, friend
Greenfield Ventures	Number, email, address etc . . .	business 1

As Table 2 shows, a user's Universe displays *a plurality of users*. Williams-Decl., [0383]-[0384]. As discussed *supra* §IX.B.1.c ([1C]), at least some of these users have their own wireless information devices. Randall, [0512], Appendix 1 p. 25, [0511], Table 2. Thus, *each one of said plurality of users is associated to a different one of a plurality of wireless telephones*, where the claimed "*plurality of users*" can be a user's whole contact list or the subset of the contact list wherein each of those users has a wireless telephone. Williams-Decl., [0384].

The Universe contacts database is both "stored on the i-server" and "cached on" the user's "wireless information device[]." Randall, p. 23 Table 4 ("Auto-entering address book"), [0062]-[0063], [0069]. Like other server-stored data, the copy of the user's contacts list on the wireless device is for "*display* in an appropriate application." Randall, [0013], [0021] ("contacts application" on user's device "allow[s] them to see" their contacts' information), [0179] ("Buddy view"), [0222], [0400]; Williams-Decl., [0385].

Table 2 shows "Alice's Universe" as an example; POSAs would have understood or found it obvious that Bob similarly has his own "Universe" contacts list, and Bob and Alice can each be included as contacts displayed in each other's contacts lists. Randall, [0509]-[0510] ("Bob's details" are in "Alice's Universe" and "downloaded to Alice's mobile device," and likewise "Alice's contact" is provided to "Bob's device[.]"), [0060] (Bob "view[s]" "Alice's contact

information” on his device), p. 24 Table 4 (“Data freshness”: “visual indication” regarding “Alice’s contact information can be shown on Bob’s wireless information device”); Williams-Decl., [0386]-[0387].

Taking Bob as an example, Randall teaches that “[w]hen one of the people in [Alice’s] list...looks at Alice[]...on their...wireless information device[]...in their contacts application” (e.g., when Bob selects Alice in his contacts list on *a display of his first wireless telephone*), “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”); Williams-Decl., [0388]. That view is of a subset of Alice’s “Identity” information which contains data “objects” that are “information relating to an individual.” Randall, [0180]-[0187], [0118], [0505]-[0508], [0021]; Williams-Decl., [0388]. Bob’s device can “display an icon or other shorthand” for such an object, which Bob can “select[]” to view “attributes of the object.” Randall, [0022], [0060] (“Bob’s device” can display “icon appearing next to Alice’s contact information”). A “user’s data object” in “a contacts application” can have a “location attribute” used to “show the position of the user.” Randall, [0021].

Thus, Randall teaches, or at minimum renders obvious, that an entry representing Alice (by icon or other shorthand) can be displayed in Bob’s contacts list, and Bob can select that entry to view Alice’s location attribute. Williams-

Decl., [0388]-[0389]. POSAs would have understood this to disclose *manually selecting one of the plurality of users*, or at minimum to render such *manually selecting* obvious as a well-known way to input such a selection. Williams-Decl., [0389]; Randall, [0012] (“user could click on” data displayed on wireless device “to perform...actions”), [0146]-[0151] (user can take “action” on a “specific contact” in “their buddy list”).

Additionally, *manually selecting* another user from a displayed contacts list would have been obvious as a well-known suitable option with reasonable expectation of success for “look[ing] at [another user’s] ADS Number” to “see a view onto [that user’s] personal data” (Randall, [0512]) such as location. Williams-Decl., [0390] (citing corroborating EX1023 (“Smith”) (*see supra* §VII.C.2.b); EX1027 (“Han”), [0033]; EX1018 (“Meadows”), FIG. 4A, 5:30-47; EX1022 (“Darling”), 41:1-15).

Randall’s *remote system receives this selection* from Bob’s *first wireless telephone over said communications network* “[w]hen Bob’s device sends Alice’s ADS Number to the server” in order “to read Alice’s information.” Randall, [0049], p. 24 (“People tracking”); Williams-Decl., [0391]-[0392].

c. [24C]

Randall teaches that “an entity seeking information,” such as Bob seeking Alice’s location, must be “[a]uthenticat[ed] (i.e. identif[ied]...)” by “the server

recognising Bob’s device and determining the database access rights which Alice has given him.” Randall, [0067]. The user “Bob (as opposed merely to Bob’s device)” may be “authenticated” by inputting “a PIN” or “correctly” “select[ing] [his] favourite colour/restaurant/recent film etc.[.]” Randall, [0067]. Information indicative of these is “transmit[ted] to the server” from Bob’s *wireless telephone*. Randall, [0067]. In some examples, this authentication can be “relevant...where Bob borrows someone else’s wireless information device or uses a public device.” Randall, [0067]; Williams-Decl., [0393].

Because Bob can be authenticated as “Bob the person, rather than Bob’s device,” even when using “someone else’s” device or “a public device,” POSAs would have understood that Bob submits a *login* (i.e., an identifier “identifying an entity seeking information” as purporting to be “Bob the person”) via the *first wireless telephone* he is using. Randall, [0067]; Williams-Decl., [0394]. The “PIN” or “select[ed] answer[.]” is a *password* that authenticates that the user is truly Bob. Williams-Decl., [0394]; Randall, [0380] (“authentication can use...a basic WID and password/passphrase”).

Alternatively, it would have been obvious to implement Randall’s *remote system* to receive *login and password information from said first wireless telephone* to authenticate Bob. Using these inputs to authenticate a device user seeking another user’s information (including location) was well-known as a

beneficial and commonly used option with predictable results. Williams-Decl., [0395]-[0402] (citing corroborating EX1019 (“Thomas”), 2:58-3:6, 5:49-54, 6:53-7:49; EX1029 (“Chern”), 6:55-7:20; EX1054 (“Sandhu”), 5:9-51; EX1030 (“Futagami”), 8:56-67, 10:9-17; EX1022 (“Darling”), 2:1-12, 8:32-34).

d. [24D]

Randall’s *remote system determines whether to allow access of Alice’s wireless telephone’s location information* when “the server recognis[es] Bob’s device and determin[es] the database access rights which Alice has given him,” as discussed *supra* §§IX.B.1.c-IX.B.1.d ([1C]-[1D]). Randall, [0067], Table 1 (highlighted below), [0047], [0128], [0503]-[0512], [0116]-[0136], p. 24 (“People tracking”); Williams-Decl., [0403]-[0405].

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

<u>Alice's iData</u>			
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

e. [24E]

As discussed *supra* §IX.B.14.c ([24C]), Randall’s server uses an input *login and password* to *identify* Bob as the *user* of the *first wireless telephone*. Williams-Decl., [0406]. This “[a]uthentication (i.e. identifying an entity seeking information)” is part of “the server recognising Bob’s device” (including “[a]uthentication of Bob the person”) “and determining the database access rights which Alice has given him” (Randall, [0067])—which can include “authoris[ing] [Bob] to track the location of [Alice’s] GPS wireless information device by polling the server” (Randall, p. 24)—and, thus, is part of [24D]’s “*determining*” (*supra* §IX.B.14.d). Williams-Decl., [0406]-[0407].

f. [24F]

As discussed *supra* §§IX.B.14.d-IX.B.14.e ([24D]-[24E]), Randall’s “*determining*” of [24D] includes “determining the database access rights which Alice has given [Bob],” including *determining whether Alice has provided access rights for said location information to Bob*. Randall, [0067], [0503]-[0512], [0116]-[0136], p. 24 (“People tracking”); Williams-Decl., [0408]-[0411].

g. [24G]

As discussed *supra* §IX.B.1.e ([1E]), Randall teaches that Bob can *assign location access rights* to Alice’s device *for obtaining a location* of Bob’s *first wireless telephone* by “switch[ing] location information on” for her. Randall, [0144], [0136], [0143]; Williams-Decl., [0410].

Randall’s teaching that “Alice...can change the level of access of a current contact” (Randall, [0509]) to give them location access as discussed *supra* §IX.B.1.c ([1C]), §IX.B.14.d ([24D]) is also a generic example that POSAs would have understood is equally applicable to Bob as to Alice. Williams-Decl., [0411]; Randall, [0067] (“Bob also has stored on the server his own personal information”); *see supra* §IX.B.1.e. “***Access rights*** can be associated with individual entities, and can also be associated with groups of entities;” thus, Bob can *assign location access rights* exclusively to Alice. Randall, [0070]; Williams-Decl., [0411].

Randall’s *remote system determines whether* the above have occurred when it stores Bob’s current i-Data access specifications (Randall, [0503]-[0509]), and in the manner discussed *supra* §IX.B.14.f ([24F]), e.g., when Alice seeks to access Bob’s location. Williams-Decl., [0412]-[0413].

h. [24H]

Randall teaches that “[o]nce [Bob is] authenticated” as being truly Bob and as having been given “database access rights” by Alice, “the ***server passes to Bob’s device the information*** it requests,” which can include Alice’s *location information*. Randall, [0067]; Williams-Decl., [0414]-[0415].

15. Claim 25

Bob's device can provide to Randall's *remote system a selection that modifies said location access rights* (which he assigned as discussed *supra* §IX.B.14.g ([24G])) by, e.g., changing the period of time for which Alice has access to his location. Randall, [0144]; Williams-Decl., [0416]. Another way Bob can *modify said location access rights* is by "chang[ing] [Alice's] level of access" by changing her i-Group membership in his contacts database on the i-server. Randall, [0509] (Bob's "device will report this to the server"); Williams-Decl., [0416]-[0417].

16. Claim 26

Randall teaches that any user can "authorise[] people to track" their device's "location...by polling the server," and that multiple *wireless telephones* can concurrently share their locations with each other. Randall, p. 24 ("People tracking"), p. 29 ("Rendezvous"); Williams-Decl., [0418]. Thus, Randall's *remote system can transmit Bob's first wireless telephone's location to Alice's one of said plurality of wireless telephones*, e.g., the same way discussed *supra* §IX.B.14.h ([24H]). Williams-Decl., [0418]-[0419].

17. Claims 27-29, 36, 39-41, 44

Randall meets the limitations added by the following claims for the reasons discussed in the corresponding sections above, with Bob's device being an exemplary "*first wireless telephone*" and Alice's device being an exemplary "*one*

of said plurality of wireless telephones” in claim 24’s dependents (as discussed *supra* §IX.B.14.b). Williams-Decl., [0420]-[0431].

Claim:	Limitation Addressed in Section:
27	§IX.B.6 (claim 6)
28	§IX.B.7 (claim 7)
29	§IX.B.8 (claim 8)
36	§IX.B.9 (claim 15)
39	§IX.B.10 (claim 18)
40	§IX.B.11 (claim 19)
41	§IX.B.12 (claim 20)
44	§IX.B.13 (claim 23)

X. GROUND 6: RANDALL IN COMBINATIONS WITH FROEBERG, DE-VRIES, DEGNBOL, WOLLRAB, OBRADOVICH, BECHTOLSHEIM

A. De-Vries (EX1013)

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. 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” in “the form of a geographic distance threshold” or “same city/town/neighborhood,” etc. De-Vries, 2:52-59, 9:1-22. “[T]he user can segregate” their contacts “into separate subsets” 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. Williams-Decl., [0432]-[0434].

B. Combinations of Randall/Randall-Froeberg with De-Vries, Degnbol, Wollrab, Obradovich, Bechtolsheim

De-Vries: Randall, like De-Vries, provides notifications via wireless devices when certain contacts are nearby, including via an “Old buddy finder” service that, e.g., “alerts Bob when a contact happens to be within a defined proximity.” Randall, p. 24. To the extent that Randall does not specify how the server transmits these alerts or that the user can set the rules/parameters for what triggers notifications with respect to particular other device users, POSAs would have been motivated to implement Randall’s service (with or without Froeberg) that way based on De-Vries’s teachings to provide the user control over what alerts they receive. Williams-Decl., [0435]. POSAs would have reasonably expected success based on De-Vries’s teachings of successfully implementing such functionality in a system like Randall’s with wireless-device users accessing each other’s locations. Williams-Decl., [0435].

Degnbol: Based on Degnbol’s teachings regarding a similar system providing similar location-based alerts, POSAs would have been motivated and

reasonably expected success to “inform[]” a user at his wireless telephone “that he has been the subject of an alert to another user,” as well as to “determin[e] the position of” “communication units” including “wristwatches.” Degnbol, 21:4-6, 18:27-31, 4:1-5:20, 6:22-7:17, 27:14-16; Williams-Decl., [0436].

Wollrab: POSAs would have been motivated to enhance Randall/Randall-Froeberg by incorporating Wollrab’s teachings discussed *supra* §VIII.B, §VIII.F to store historical location-tracking records to help trace where a device has been and locate a device whose tracking has been lost. Wollrab, 3:21-27, 4:40-58; Williams-Decl., [0437] (citing corroborating EX1012 (“Ganesh”), 7:3-20, 1:43-55); *see supra* §VIII.F. POSAs would have reasonably expected success given that Randall’s i-server already receives, stores, and provides updates of a wireless device’s location as discussed *supra* §IX.A, §IX.B.1, §IX.B.14. Williams-Decl., [0437].

Obradovich: POSAs would have been motivated and reasonably expected success to incorporate Obradovich’s teachings discussed *supra* §VIII.G.11 into Randall/Randall-Froeberg, to “make use of [Randall’s] location monitoring capability” in “determining the validity of credit requests.” Obradovich, 24:51-54; Williams-Decl., [0438].

Bechtolsheim: POSAs would have recognized Bechtolsheim’s techniques discussed *supra* §§VIII.E-VIII.F as the type of “GPS tracking in cars” techniques

that Randall’s “Route finder” is “similar to” (Randall, p. 29). Williams-Decl., [0439]. POSAs would therefore have been motivated and reasonably expected success incorporating Bechtolsheim’s navigation information and display techniques when implementing Randall’s “Route finder” service (with or without Froeberg), with another user’s location as the destination (as discussed *supra* §IX.B.1.f ([1F])). Williams-Decl., [0439].

C. Mapping to Challenged Claims

1. Claims 9, 30

Claims 9 and 30 are obvious over Randall-De-Vries/Randall-Froeberg-De-Vries.

In Randall’s “Old buddy finder,” Bob’s “device *alerts* Bob when a contact happens to be within a defined proximity (e.g. Bob and Alice...).” Randall, p. 24. This *alert* is *based on* Alice’s device’s *location*. Williams-Decl., [0440]-[0441].

De-Vries concerns the same type of proximity-based *alerts* as Randall. De-Vries, Abstract, 2:18-35, 4:39-44, 4:60-65, 5:20-62; Williams-Decl., [0442]. De-Vries teaches to implement such alerts by the “server send[ing] a notification”—i.e., the *remote system transmitting the alert*—to the *wireless telephone*. De-Vries, 8:1-3, 8:31-40, FIG. 1; Williams-Decl., [0442]-[0443].

2. Claims 10, 31

Claims 10 and 31 are obvious over Randall-De-Vries/Randall-Froeberg-De-Vries.

De-Vries teaches that “[t]he information service” (Randall’s *remote system*) “supports a parameter for the user to disable and enable notifications,” by which “user A could enable notifications from a group including person B.” De-Vries, 9:46-62, FIG. 1 (“information service” is server-implemented). POSAs would have understood such “enabl[ing] notifications” to be the *remote system receiving a request for said alert from Bob’s wireless telephone*. Williams-Decl., [0444]-[0445].

De-Vries further teaches that a mobile device user can set parameters controlling which other users’ locations will trigger alerts and in what circumstances, as discussed *supra* §§X.A-X.B. De-Vries, 2:52-59, 3:5-14, 9:1-22. The “parameter settings” from “the user’s...mobile...device” are “stored by the information service” to control what alerts the server transmits. De-Vries, 8:41-62. POSAs would have understood setting these parameters, which are *received* by the *remote system*, to be *a request for said alert* to be provided when the parameters are met. Williams-Decl., [0446]-[0447].

3. Claims 11, 32

Claims 11 and 32 are obvious over Randall-De-Vries/Randall-Froeberg-De-Vries.

Randall teaches that *said alert* can be *geographic area-based*—e.g., *alerting when the other user’s location is within* “the same foreign city.” Randall, p. 24

(“Old buddy finder”); Williams-Decl., [0448]. De-Vries also teaches *geographic area-based alerts*, and that the *wireless telephone* user can *specify* the *geographic area* by setting “proximity parameters, such as same city/town/neighborhood,” within which the server will “provid[e] notifications” that specified other users’ “locations are within the scope indicated by the parameter.” De-Vries, 8:41-9:18; Williams-Decl., [0449]-[0450].

4. Claims 12, 33

Claims 12 and 33 are obvious over Randall-Degnbol/Randall-Froeberg-Degnbol. Based on Degnbol’s teachings discussed *supra* §VIII.G.4, it would have been obvious to *transmit an alert* to Bob’s *wireless telephone* when “he has been the subject of an alert to another user” by which that user *locates* Bob’s *wireless telephone* as being nearby. Degnbol, 21:4-6, 18:27-31; Williams-Decl., [0451]-[0452]. It would alternatively have been obvious to *transmit an alert* whenever another user requests Bob’s location, as this was a known useful option. Williams-Decl., [0452]-[0454] (citing corroborating EX1071 (“Rice”), 9:26-51, 7:40-49, 12:20-33); *supra* §VIII.G.4.

5. Claims 13-14, 34-35

Claims 13-14 and 34-35 are obvious over Randall-Wollrab/Randall-Froeberg-Wollrab based on Wollrab’s teachings discussed *supra* §§VIII.G.5-VIII.G.6. Williams-Decl., [0455].

6. Claims 16, 37

Claims 16 and 37 are obvious over Randall-Degnbol/Randall-Froeberg-Degnbol.

Randall's "wireless information device[s]" can be "any kind of device with one or two way wireless information capabilities," and the *remote system stores and transmits the location of a* wireless information device to any authorized *wireless telephone* as discussed *supra* §IX.B.1 (claim 1), §IX.B.14 (claim 24). Randall, [0002], [0021]; Williams-Decl., [0456]-[0457].

As discussed *supra* §VIII.G.8, Degnbol describes "determining the position of" "communication units," which include "wristwatches" and can receive information. Degnbol, 4:1-5:20, 6:22-7:17, 27:14-16; Williams-Decl., [0458]. POSAs would have understood Degnbol's "wristwatches" to be a suitable wireless information device in Randall/Randall-Froeberg; thus, it would have been obvious to *store and transmit the location of a watch*. Williams-Decl., [0458]-[0459].

7. Claim 17, 38

Claims 17 and 38 are obvious over Randall-Degnbol/Randall-Froeberg/Degnbol. Degnbol teaches that the *watch* discussed *supra* §X.C.6 (claims 16, 37) is "[a] unit in the set" of "**communication** units" whose "position" is determined by "GPS," etc. Degnbol, 4:1-5:11, 6:22-7:30. Randall teaches that such GPS-enabled (Global **Positioning System**) wireless communication devices

communicate their position to the *remote system* (i-server) over said *communications network*, as discussed *supra* §IX.B.1.b ([1B]). Randall, p. 24 (“People tracking”); Williams-Decl., [0460]-[0462].

8. Claims 21, 42

Claims 21 and 42 are obvious over Randall-Obradovich/Randall-Froeberg-Obradovich based on Obradovich’s teachings discussed *supra* §VIII.G.11. Williams-Decl., [0463].

9. Claims 22, 43

Claims 22 and 43 are obvious over Randall-Bechtolsheim/Randall-Froeberg-Bechtolsheim, based on Bechtolsheim’s teachings discussed *supra* §VIII.G.12. Williams-Decl., [0464].

XI. NO BASIS EXISTS FOR DISCRETIONARY DENIAL

A. Section 314(a)

1. *Fintiv*

This Petition’s “compelling evidence of unpatentability” should end the *Fintiv* analysis. Director’s Interim Procedure for Discretionary Denials, 5 (June 21, 2022) (“Interim Procedure”) (discussing *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (Mar. 20, 2020) (precedential)).

If considered, the *Fintiv* factors weigh against denial.

a. Stay Potential

Currently this factor is neutral.

b. Trial Timing

A motion is pending to transfer the district-court proceeding to the Northern District of California (EX1036 at 8), where the median time-to-trial is 47.9 months (EX1037 at 66). If that motion were not granted, the other factors favoring institution would still outweigh the trial-timing factor.

c. Litigation Investment

The district-court parties have invested little in invalidity-related issues, *Markman* hearing is over four months away (EX1038 at 3), and “a significant portion of work remains to be done” including “fact and expert discovery and dispositive motions.” *Protect Animals With Satellites LLC v. OnPoint Sys., LLC*, IPR2021-01483, Paper 11 at 14-15 (Mar. 4, 2022).

Mullen’s infringement contentions asserted 272 claims across nine patents.⁵ EX1039. Nevertheless, Petitioners diligently filed this Petition over a month before any statutory bar.

d. Issue Overlap

This Petition challenges 44 claims, whereas Mullen must elect “no more than 5” to assert. EX1038 at 4. This weighs against denial. *Markforged Inc. v. Continuous Composites*, IPR2022-00679, Paper 7 at 32-33 (Oct. 25, 2022).

⁵ Mullen filed an amended complaint dropping one patent (25 claims) only a month ago. EX1036 at 10.

e. Litigation Defendants

This factor is neutral. *Id.* at 33.

f. Other Circumstances

The Petition’s strong showing on the merits weighs against denial. Interim Procedure, 3-5.

2. General Plastic

Discretionary denial under *General Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (Sept. 6, 2017) (precedential as to §II.B.4.i) “is not justified” where, as here, first and second petitioners “do not have a significant relationship.” *Videndum Production Sols., Inc. v. Rotolight Ltd.*, IPR2023-01218, Paper 12 at 7 (Apr. 19, 2024) (“*Videndum*”) (director review). “Petitioner’s reliance on [an] earlier-filed” IPR, “even as a menu and roadmap, is not sufficient to create a significant relationship that favors denial.” *Id.* at 5.

This Petition and those concurrently challenging other ’024 patent claims are “the first filed by Petitioner[s] against the” ’024 patent. *Id.* Petitioners have “different allegedly infringing products and in different district court proceedings” than Apple (petitioner in prior IPR2023-00148), have not coordinated with Apple regarding the ’024 patent, and thus have no “significant relationship” with Apple. *Ford Motor Co. v. Neo Wireless LLC*, IPR2023-00763, Paper 28 at 7, 10 (Mar. 22, 2024) (director review).

Moreover, this Petition presents new Randall-based Grounds developed subsequent to Apple's IPR.

Discretionary denial "is not justified." *Videndum* at 7.

B. Section 325(d)

Of the references combined in this Petition's grounds, only De-Vries was of record during prosecution of the '024 patent, and was not applied in any rejection or considered in combination with Randall. Ganesh, Friedman, Meadows, Chern, and the published-application version of Rice were also of record but are used herein only as corroborating background references, different from any application in prosecution.

Apple's IPR2023-00148 "was terminated after institution but before a final written decision was issued," so "the concerns underlying § 325(d) are not implicated," and the references in that IPR are not considered "presented to the Office pursuant to § 325(d)." *BMW of N.A., LLC v. Michigan Motor Techs., LLC*, IPR2023-01032, Paper 14 at 16 (Jan. 29, 2024).

Furthermore, Grounds 4-6 based on Randall, which was not of record in prosecution or IPR2023-00148, warrant institution regardless of the status of Sheha-based Grounds 1-3. *Current Lighting Sols., LLC v. Jiaxing Super Lighting Electric Appliance Co., Ltd.*, IPR2023-00270, Paper 18 at 51 (Aug. 16, 2023).

XII. CONCLUSION

The Board should institute review and cancel claims 1-44.

Dated: 2024-12-30

Respectfully submitted,

/Elisabeth Hunt/

Elisabeth Hunt, Reg. #67,336

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24, the undersigned certifies that the foregoing Petition for *Inter Partes* Review contains 13,995 words excluding a table of contents, a table of authorities, Mandatory Notices under §42.8, a certificate of service or word count, or appendix of exhibits or claim listing. Petitioner has relied on the word count feature of the word processing system used to create this paper in making this certification.

Date: December 30, 2024

/Dara Del Rosario/
Dara Del Rosario
Paralegal
WOLF, GREENFIELD & SACKS, P.C.

CERTIFICATE OF SERVICE UNDER 37 C.F.R. §42.6(E)(4)

I certify that on December 30, 2024, I will cause a copy of the foregoing document, including any exhibits or appendices filed therewith, to be served via Overnight FedEx at the following correspondence address of record for the patent:

Jeffrey D. Mullen
2212 Hassinger Lane
Glenshaw, PA 15116

Date: December 30, 2024

/Dara Del Rosario/
Dara Del Rosario
Paralegal
WOLF, GREENFIELD & SACKS, P.C.

XIII. CLAIM LISTING

The following claim listing assigns labels (e.g., [1A], [1B], etc.) to certain claim elements for ease of reference.

Claim 1
[1PRE] A system comprising:
[1A] a remote system comprising a server, the remote system capable of communicating with wireless telephones over a communications network and further capable of:
[1B] obtaining a location of a first wireless telephone;
[1C] changing, at the direction of said first wireless telephone, a list of users for a profile associated with said first wireless telephone that are allowed to access said location, wherein each user of said list of users is representative of one of a plurality of wireless telephones;
[1D] transmitting said location to at least one of said users of said list of users over said communications network;
[1E] determining a second location associated with one of said plurality of wireless telephones; and
[1F] providing directional information to said one of said plurality of wireless telephones, wherein said directional information is representative of directions between said second location and said location.
Claim 2
The system of claim 1, wherein said changing comprises adding an additional user to said list of users.
Claim 3
The system of claim 1, where said remote system is further capable of transmitting the address of said location to said at least one of said users of said list of users.
Claim 4
The system of claim 1, where said remote system is further capable of determining a third location associated with one of said plurality of wireless telephones.

Claim 5

The system of claim 1, where said remote system is further capable of determining the distance between said first wireless telephone and at least one of said plurality of wireless telephones.

Claim 6

The system of claim 1, wherein said remote system is further capable of storing access rights that allow at least one of said list of users to access said location of said first wireless telephone for an indefinite period of time.

Claim 7

The system of claim 1, wherein said remote system is further capable of storing access rights that allow at least one of said list of users to access said location of said first wireless telephone for only a specific period of time.

Claim 8

The system of claim 7, wherein said remote system is further capable of receiving an indication of said specific period of time from said first wireless telephone.

Claim 9

The system of claim 1, wherein said remote system is further capable of transmitting an alert to said one of said plurality of wireless telephones based on said location of said first wireless telephone.

Claim 10

The system of claim 9, wherein said remote system is further capable of receiving a request for said alert from said one of said plurality of wireless telephones.

Claim 11

The system of claim 10, wherein said alert is geographic area-based and said remote system is further capable of alerting said one of said plurality of wireless telephones when said location of said first wireless telephone is within a geographic area specified by said one of said plurality of wireless telephones.

Claim 12

The system of claim 1, wherein said remote system is further capable of transmitting an alert to said first wireless telephone when said one of said plurality of wireless telephones locates said first wireless telephone.

Claim 13

The system of claim 1, wherein said remote system is further capable of storing a history of locations of said first wireless telephone.

Claim 14

The system of claim 13, wherein said transmitting said location to at least one of said users of said list of users over said communications network comprises transmitting to said at least one of said users a location from said history of locations when said first wireless telephone is turned off.

Claim 15

The system of claim 1, wherein said remote system is further capable of providing said location to a device utilized by one of said users of said list of users after said one of said users of said list of users utilizes said device to input a login and password for said one of said list of users into a website.

Claim 16

The system of claim 1, wherein said remote system is further capable of storing and transmitting to said first wireless telephone a location of a watch.

Claim 17

The system of claim 16, wherein said remote system is capable of communicating with said watch over said communications network to obtain said location of said watch from a positioning system of said watch.

Claim 18

The system of claim 1, wherein said remote system is further capable of storing and transmitting to said first wireless telephone a location of a personal computer.

Claim 19

The system of claim 1, wherein said remote system is further capable of storing and transmitting to said first wireless telephone a location of a radio.

Claim 20

The system of claim 1, wherein said remote system is further capable of storing and transmitting to said first wireless telephone a location of a car.

Claim 21

The system of claim 1, wherein said remote system is further capable of providing said location of said first wireless telephone to a credit card authorization system.

Claim 22

The system of claim 1, wherein said remote system is further capable of providing to said one of said plurality of wireless telephones information indicating time to reach said location from said second location according to at least two types of travel selected from the types of travel consisting of subway, walking, running, and driving.

Claim 23

The system of claim 1, wherein said remote system is further capable of: storing a phone book corresponding to a user of said first wireless telephone; and downloading said phone book to a new wireless telephone of said user.

Claim 24

[24PRE] A system comprising:

[24A] a remote system comprising a server, the remote system capable of communicating with wireless telephones over a communications network and further capable of:

[24B] receiving from a first wireless telephone over said communications network a selection of one of a plurality of users, said selection corresponding to a user of said first wireless telephone manually selecting said one of said plurality of users from a display of said first wireless telephone, wherein each one of said plurality of users is associated to a different one of a plurality of wireless telephones;

[24C] receiving from said first wireless telephone information indicative of a login and a password;

[24D] determining whether to allow access of location information for said one of said plurality of wireless telephones associated to said selected one of said plurality of users,

[24E] wherein said determining includes identifying said user of said first wireless telephone using said information indicative of said login and password and

[24F] determining whether said selected one of said plurality of users has provided access rights for said location information to said user of said first wireless telephone;

[24G] determining whether said user of said first wireless telephone has assigned location access rights to said one of said plurality of wireless telephones associated with said selected one of said plurality of users for obtaining a location of said first wireless telephone; and

[24H] transmitting over said communications network said location information to said first wireless telephone.

Claim 25

The system of claim 24, wherein said remote system is further capable of receiving a selection from said first wireless telephone that modifies said location access rights assigned by said user of said first wireless telephone to said one of said plurality of wireless telephones.

Claim 26

The system of claim 24, wherein said remote system is further capable of transmitting said location of said first wireless telephone to said one of said plurality of wireless telephones associated with said selected one of said plurality of users.

Claim 27

The system of claim 24, wherein said remote system is further capable of storing access rights that allow said first wireless telephone to access said location information for said one of said plurality of wireless telephones for an indefinite period of time.

Claim 28

The system of claim 24, wherein said remote system is further capable of storing access rights that allow said first wireless telephone to access said location information for said one of said plurality of wireless telephones for only a specific period of time.

Claim 29

The system of claim 28, wherein said remote system is further capable of receiving an indication of said specific period of time from said one of said plurality of wireless telephones.

Claim 30

The system of claim 24, wherein said remote system is further capable of transmitting an alert to said first wireless telephone based on said location information for said one of said plurality of wireless telephones.

Claim 31

The system of claim 30, wherein said remote system is further capable of receiving a request for said alert from said first wireless telephone.

Claim 32

The system of claim 31, wherein said alert is geographic area-based and said remote system is further capable of alerting said first wireless telephone when a location of said one of said plurality of wireless telephones is within a geographic area specified by said first wireless telephone.

Claim 33

The system of claim 24, wherein said remote system is further capable of transmitting an alert to said one of said plurality of wireless telephones when said first wireless telephone locates said one of said plurality of wireless telephones.

Claim 34

The system of claim 24, wherein said remote system is further capable of storing a history of locations of said one of said plurality of wireless telephones.

Claim 35

The system of claim 34, wherein said transmitting said location information to said first wireless telephone comprises transmitting to said first wireless telephone a location from said history of locations when said one of said plurality of wireless telephones is turned off.

Claim 36

The system of claim 24, wherein said remote system is further capable of providing said location information to another device utilized by said user of said first wireless device after said user utilizes said another device to input said login and said password into a website.

Claim 37

The system of claim 24, wherein said remote system is further capable of storing and transmitting to said first wireless telephone a location of a watch.

Claim 38

The system of claim 37, wherein said remote system is capable of communicating with said watch over said communications network to obtain said location of said watch from a positioning system of said watch.

Claim 39

The system of claim 24, wherein said remote system is further capable of storing and transmitting to said first wireless telephone a location of a personal computer.

Claim 40

The system of claim 24, wherein said remote system is further capable of storing and transmitting to said first wireless telephone a location of a radio.

Claim 41

The system of claim 24, wherein said remote system is further capable of storing and transmitting to said first wireless telephone a location of a car.

Claim 42

The system of claim 24, wherein said remote system is further capable of providing said location of said first wireless telephone to a credit card authorization system.

Claim 43

The system of claim 24, wherein said remote system is further capable of providing to said first wireless telephone information indicating time to reach a location of said one of said plurality of wireless telephones from said location of said first wireless telephone according to at least two types of travel selected from the types of travel consisting of subway, walking, running, and driving.

Claim 44

The system of claim 24, wherein said remote system is further capable of: storing a phone book corresponding to a user of said first wireless telephone; and downloading said phone book to a new wireless telephone of said user.