

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. IPR2025-00365
Patent No. 11,234,117

**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. 11,234,117 (“the ’117 patent”)
1002	Prosecution History of U.S. Patent No. 11,234,117
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	RESERVED
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	U.S. Patent No. 6,885,874 (“Grube”)
1018	U.S. Patent No. 6,716,101 (“Meadows”)
1019	U.S. Patent No. 7,366,522 (“Thomas”)
1020	U.S. Patent No. 5,736,960 (“Murphy”)
1021	U.S. Patent No. 5,923,286 (“Divakaruni”)
1022	International Patent Application Publication No. WO 01/91486 (“Darling”)
1023	U.S. Patent No. 6,084,951 (“Smith”)
1024	RESERVED
1025	U.S. Patent No. 6,415,224 (“Wako”)

Exhibit	Description
1026	RESERVED
1027	RESERVED
1028	RESERVED
1029	RESERVED
1030	RESERVED
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	RESERVED
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	RESERVED
1058	RESERVED
1059	U.S. Patent No. 7,796,998 (“Zellner”)
1060	U.S. Patent No. 7,284,033 (“Jhanji”)
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	RESERVED
1070	RESERVED
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. 11,234,117 (“the ’117 patent”) issued (U.S. Patent Application No. 11/834,674) 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. 11/485,161 (U.S. Patent No. 11,122,418), filed July 12, 2006;
- U.S. Patent Application No. 11/462,201 (U.S. Patent No. 9,204,283), filed August 3, 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. 11/841,734 (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;
- U.S. Patent Application No. 11/841,765 (U.S. Patent No. 11,246,024), filed August 20, 2007;
- U.S. Patent Application No. 17/665,568 (abandoned), filed February 6, 2022.

U.S. Patent No. 11,234,117 also claims priority to U.S. Provisional Application No. 60/367,967, filed March 25, 2002.

2. USPTO Patent Trial and Appeal Board

The '117 patent was at issue in *Apple Inc. v. Mullen Industries LLC*, Case Nos. IPR2023-00115, IPR2023-00116, and IPR2023-00117.

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:

- IPR2025-00366 and IPR2025-00367 challenging U.S. Patent No. 11,234,117
- IPR2025-00368 and IPR2025-00369 challenging U.S. Patent No. 11,246,024

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

The '117 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 Western District of Texas

The '117 patent was previously asserted in *Mullen Industries LLC v. Apple Inc.*, Case No. 6:22-cv-00145 (transferred and terminated).

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

The '117 patent was previously asserted in *Mullen Industries LLC v. Apple Inc.*, Case No. 5:23-cv-00437 (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 1-14 and 73-92 of the '117 patent (EX1001).

I. INTRODUCTION

The '117 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 IPR2023-00115 challenging claims 1-14 and 73-92 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 (IPR2023-00115, Paper 9 at 17-19); and a new set of grounds based on Randall, which has not previously been before the Board.

II. STANDING

Petitioners certify that the '117 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 1-14 and 73-92 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.”), [0089].

Ground Number and Reference(s)		Claims
1	Sheha (EX1005), Froeberg (EX1051)	1-5, 12
2	Sheha	73-77, 79, 81, 83-86, 90
3	Sheha, Froeberg, Degnbol (EX1035), Boling (EX1074), Bechtolsheim (EX1075), Smith (EX1023)	6-11, 13-14, 78, 80, 82, 87-89, 91-92
4	Randall (EX1007-EX1008), Froeberg	1-5, 11-12, 14
5	Randall	73-77, 79, 81, 83-86, 89-90, 92
6	Randall, Froeberg, De-Vries (EX1013), Degnbol, Bechtolsheim	6-10, 13, 78, 80, 82, 87-88, 91

Each reference above is prior art under at least pre-AIA 35 U.S.C. §102(e).

Randall, Boling, and Bechtolsheim are prior art under §102(a). Degnbol and Smith are prior art under §102(b).

As discussed *infra* §X.B, none of these references were discussed by the Examiner during prosecution of the '117 patent.

IV. THE '117 PATENT

A. Specification Embodiments

Generally, the '117 patent discusses sharing a wireless device's (GPS) location with others via a remote system. EX1001, 1:15-28, 5:11-34. Williams-Decl., [0056]-[0059].

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]-[0055].

C. Prosecution History

The ’117 patent’s claims were allowed because they “are similar to already allowed claims in other patents with small word or small phrase changes.”

EX1002 at 1503.

D. Challenged Claims

Independent claims 1 and 73 are “wireless telephone” claims that adapt recitations from method claim 1 of related U.S. Patent No. 8,374,575 and system claim 1 of related U.S. Patent No. 11,122,418, respectively. These claims are challenged below under similar grounds as in Petitioners’ IPR2025-00124 challenging U.S. Patent No. 8,374,575 and IPR2025-00018 challenging U.S. Patent No. 11,122,418, 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 1-2: SHEHA, WITH OR WITHOUT FROEBERG

Grounds 1-3 together demonstrate how the challenged claims are unpatentable over Sheha, alone or in combinations with other references. The Board previously found a reasonable likelihood of unpatentability based on similar Sheha-based combinations. *See* IPR2023-00115, Paper 9 (granting institution). Mullen’s arguments made in IPR2023-00115 against these references were wrong as discussed in the sections below, and Mullen’s characterizations of Mr. Williams’s deposition testimony were inaccurate as Mr. Williams has explained. Williams-Decl., [0423]-[0455].

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., [0091]-[0096].

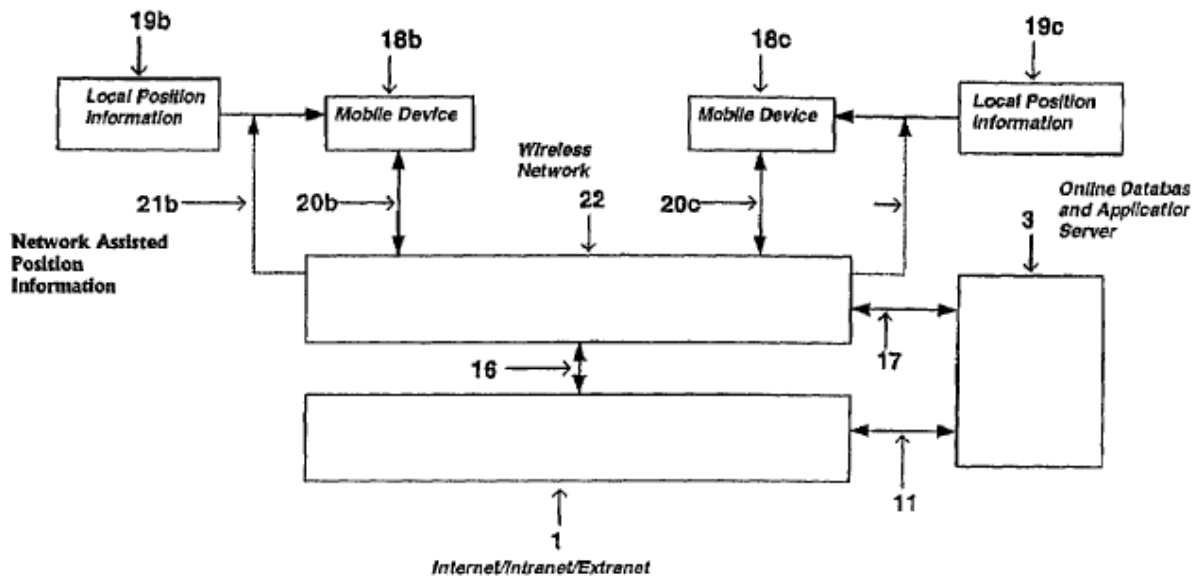


FIG. 3

B. Mapping to Challenged Claims²

1. Claim 1: [1PRE]

Sheha discloses a mobile-to-mobile configuration in FIG. 3 (annotated below): mobile devices 18b-18c communicate with wireless network 22 via wireless connections 20b-20c. Sheha, 11:12-35. A “mobile” device can be “*a wireless telephone.*” Sheha, 4:43-47, 9:40-43;³ Williams-Decl., [0098].

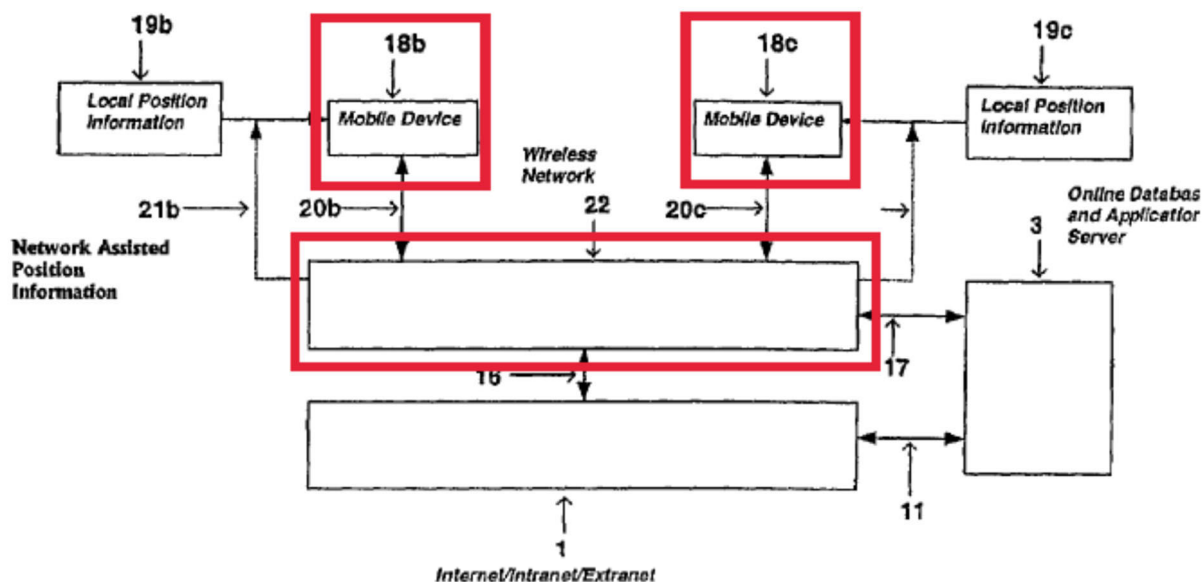


FIG. 3

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

³ All emphases added unless otherwise specified.

a. [1A]

Sheha's "current wireless phones...have...processing capability" (Sheha, 5:53-57); thus, the *wireless telephone* includes *a processor*. Williams-Decl., [0099]-[0100]. Froeberg confirms that wireless telephones conventionally included processors. Froeberg, 2:29-38, 4:27-60; Williams-Decl., [0099].

b. [1B]

Sheha's wireless devices include *positioning systems*, e.g., GPS ("Global **Positioning System**"), for *determining* their *locations*. Sheha, 1:35-38, 10:5-16, 11:15-20; Williams-Decl., [0101].

c. [1C]

Sheha's "current wireless phones...have...**memory**." Sheha, 5:53-57. As discussed *supra* §VI.A, Sheha's wireless telephones perform tasks including requesting, receiving, interpreting, and displaying data, which POSAs would have understood involves *programming* stored in *memory*. Williams-Decl., [0102]. Froeberg confirms that wireless telephones conventionally performed their functionality via *memory storing programming*. Froeberg, 2:29-38, 4:27-5:24; Williams-Decl., [0102].

d. [1D]

In Sheha, each mobile device "**forwards** its current position...to the ODAS" ("online database and application **server**"), which is a *remote server*. Sheha,

11:36-37, 7:21-23, 11:3-37, FIG. 3 (showing ODAS 3 remote from mobile devices 18b-18c); Williams-Decl., [0103].

e. [1E]

Sheha discloses that each device may have privacy settings, including privacy configuration specifications stored at the *remote server* and changed at the instruction of the *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 *wireless telephone* can specify “***allowance*** of position information transfers...only with the device owner’s permission.” Sheha, 5:21-46, 4:59-66, 10:17-26; Williams-Decl., [0104]. The *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 *wireless telephone* has authorized (*allowed*) a particular user to obtain its location information. Sheha, 3:22-28, 5:21-46, 8:42-53; *see also id.*, 3:4-14, 4:8-18, 9:59-10:4; Williams-Decl., [0104].

In IPR2023-00115 (Paper 13 at 13-21) Mullen argued that Sheha’s privacy settings are only “privacy filters [that] a target mobile device has implemented for incoming position requests” and that are “indiscriminate as to the identity of any requesting mobile device or its user,” and that the privacy settings are not stored on a remote server. *See also* IPR2023-00115, Paper 7 at 21-23. Mullen did not make those arguments about the permissions specified in Sheha’s “group database,” but instead argued that the group database is only “used for...landline position requests” and is not used in a mobile device embodiment, which Mullen treats as disparate embodiments. IPR2023-00115, Paper 13 at 21-29; *see also* IPR2023-00115, Paper 7 at 7-14 (arguing that Sheha discloses four embodiments with “discrete” functionalities: landline-to-landline phone calls, landline-to-mobile phone calls, mobile-to-mobile phone calls, and no phone calls). 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., [0107].

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., [0108]. When both are employed, POSAs

⁴ Sheha variously and 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.

would have understood that a requesting user is only given access to a *wireless telephone*'s location if the requesting user has permission in the *wireless telephone*'s group database and to the extent the *wireless telephone*'s local privacy settings allow location sharing. Sheha, 4:59-5:20, 11:55-12:7; Williams-Decl., [0108].

Alternatively, even if Sheha did not explicitly disclose using group permissions in mobile-to-mobile embodiments, doing so would have been obvious because allowing a mobile user to specify a group of other mobile users who have permission to access the user's location (or to provide access permission on an individual-user basis) was well-known as a beneficial option with reasonable expectation of success in a system like Sheha's. Williams-Decl., [0109]-[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 *wireless telephone*'s "user[]" can define a group of specific users...that are permitted to access" the *wireless telephone*'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 group (*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, because Sheha describes "defin[ing] a group of specific

users that have access to [position] information” in the context of “[a] *mobile* or landline device...request[ing] position information of another mobile or landline device,” and in view of POSAs’ background knowledge discussed above. Sheha, 5:38-46, 11:55-12:7; Williams-Decl., [0114] (citing Sandhu, Darling, Randall).

In the ’117 patent, a “user profile” can be part of “a login feature,” in which the profile is an “identifier” that is “logged into” via a user’s “device[]” “[i]n order for [the] user[] to be identified.” EX1001, 9:53-60; Williams-Decl., [0115].

Similarly, in Sheha’s system, “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 *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 the *list of users* in the “group database” (Sheha, 11:63-12:7) are implemented *on said remote server* (the ODAS). See Sheha, 3:4-13, 4:8-18, 7:22-23, 8:42-53 (“ODAS 3 us[es] authentication and authorization protocols” to “verify the level of authority each user is granted” (as specified in the group

database)), 9:61-10:4; Williams-Decl., [0116]. Because the *wireless telephone*'s "user[] can define" the authorized "group" as part of that user's specified location-sharing settings (Sheha, 11:55-65), POSAs would have understood that this *list of users on said remote server* is for the *profile associated with said wireless telephone*. Williams-Decl., [0116].

Alternatively, implementing the *wireless telephone*'s list of authorized users *on said remote server for a profile associated with said wireless telephone* 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 users who are allowed to access their location 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* by the user *instructing* the ODAS via the *wireless telephone*. Sheha, 5:9-20; 11:63-12:7; Williams-Decl., [0123]. Alternatively, it would have been obvious to provide functionality for *changing* the list of users by the *wireless telephone instructing* the ODAS because doing so was well-known as a beneficial

option with reasonable expectation of success in a system like Sheha's, and it would have been apparent to POSAs from Sheha's above teachings and POSAs' background knowledge that users commonly desire and expect the ability to change who has access to their location rather than being limited to the same list forever. Williams-Decl., [0123]-[0129] (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; EX1045 ("Menard"), FIG. 10, [0067]-[0068]; EX1046 ("Lee"), FIG. 2D, 16:1-25).

Sheha discloses that "[w]hen a mobile device's position information is requested, the system, based on privacy settings, responds with the appropriate position information to the requesting user's device." Sheha, 12:1-7; *see also id.*, 4:59-5:46, 11:49-51 ("The ODAS 3 periodically updates each mobile device with the other's position information..."). Therefore, a requesting user who is among *said list of users* is *allowed to access said location by way of said remote server providing said location from said remote server* to the requesting user. Williams-Decl., [0130]-[0131].

f. [1F]

Sheha discloses using a remote mobile device's location "to obtain driving *directions* to that device," such that if both wireless telephones grant access to their respective position information, this "can be used for real-time driving directions

or collaboration purposes.” Sheha, 5:21-34; Williams-Decl., [0132]. “The 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 each *wireless telephone receiving and displaying directional information* that is *representative of directions* between the two devices’ locations. Williams-Decl., [0132].

This functionality is illustrated in Sheha’s FIG. 5 (annotated below), which shows a “Map Caller-ID” screen that *displays directional information representative of directions* (“driving route 29” and “driving directions 35”) between *said location* (location 34 of the *wireless telephone* displaying the map) and *a second location* (location 33) *associated with said one of said plurality of wireless telephones*. Sheha, 9:23-34; Williams-Decl., [0133].

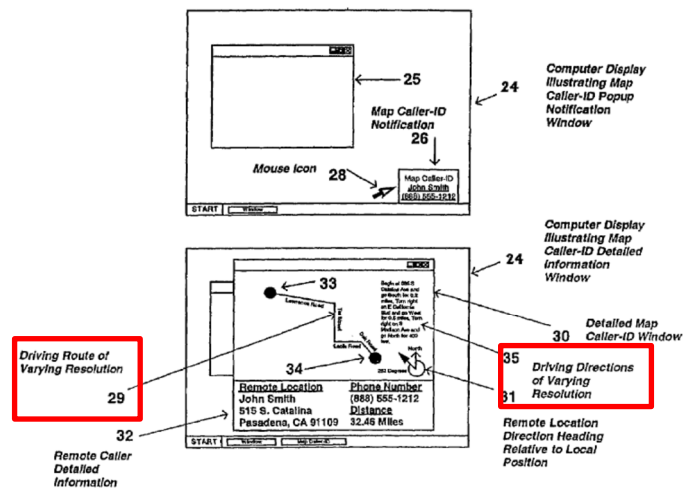
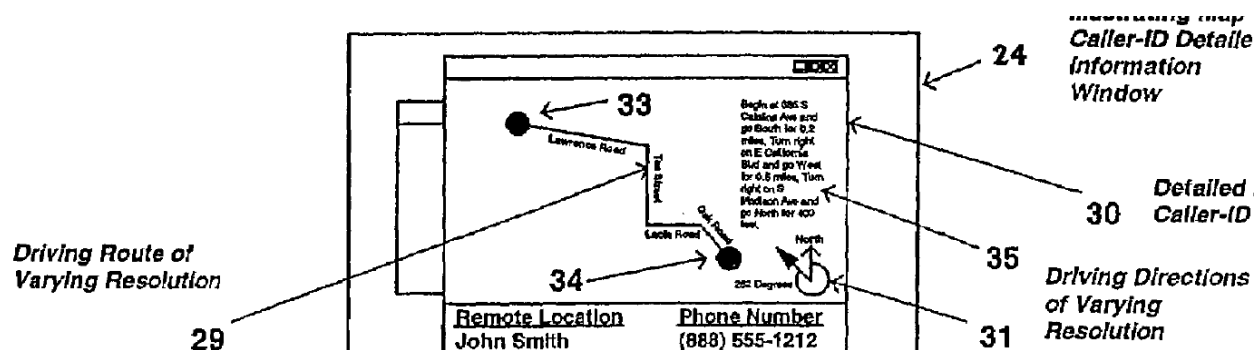


FIG. 5

In IPR2023-00115, Mullen argued that “[t]here is no teaching in Sheha that directional information is being sent to the mobile devices from a remote server, instead of the mobile devices themselves providing that information.” IPR2023-00115, Paper 7 at 30. As the Board found for institution purposes, Mullen was incorrect. Sheha teaches [1F] by “describ[ing] that...[t]he ODAS 3 periodically updates each mobile device with the other’s position information, thus providing real-time driving directions and route information.” IPR2023-00115, Paper 9 at 17 (quoting Sheha, 11:20-51); Williams-Decl., [0134]. “*Directional information*” is a broad term, as the ’117 patent makes clear by proposing many possible examples of “*directional information*,” one of which is “a map” of “the requested, the requesting user’s location or both,” and another of which 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, 7:61-8:34; Williams-Decl., [0134]. POSAs would have understood the position information the ODAS provides (and Sheha’s mobile device receives and displays) to be *directional information*. Williams-Decl., [0134].

In IPR2023-00097 on related U.S. Patent No. 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., [0135].



Sheha, FIG. 5 (excerpt).

Mullen argued that Sheha’s ODAS does not “generate[] driving directions” and send them “*to* the mobile devices,” but only “send[s] position information” that the mobile devices use to “generat[e] directions.” IPR2023-00097, Paper 13 at 37-38. But [1F] only requires “*receiving and displaying directional information,*” not *receiving directions* at the telephone. Rather than reciting “receiving directions,” [1F] more broadly only requires receiving and displaying “*directional information.*” And rather than reciting that the received “*directional information*” *is* directions or *includes* directions, again [1F] more broadly only requires the “*directional information*” to be “*representative of directions.*” The ’117 patent’s specification never uses the phrase “*representative of,*” and thus sets forth no description limiting how received “*directional information*” can be “*representative of directions.*” Williams-Decl., [0136]. POSAs would have understood that by receiving and displaying position information for the express purpose of generating

directions to that position, Sheha's *wireless telephone* is "*receiving and displaying directional information...representative of directions.*" Sheha, 4:52-58, 11:49-51; Williams-Decl., [0136].

Alternatively, generating the *directions* between the two mobile devices' locations at the ODAS and transmitting the *directions* to the 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 of the well-known design choice and reasonable expectation of success to do so. Williams-Decl., [0137]-[0144] (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., [0138]. Like Sheha's mobile 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 between the local street network segment" (the user telephone's location) "and the remote street network segment" (the remote telephone's location), and "transmit[] the driving directions...to the user telephone" for

“display[.]” Froeberg, 4:4-26; Williams-Decl., [0138]. 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 server-side, thus 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., [0138]-[0139]. 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., [0138]-[0140].

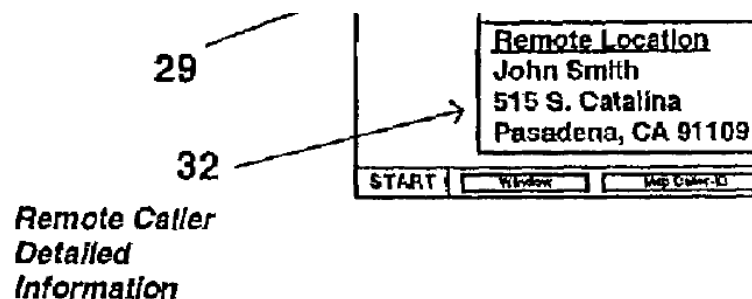
2. Claim 2

As discussed *supra* §VI.B.1.e ([1E]), it would have been immediately 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 an additional user to said list of users* in the group who have access to the position information. Williams-Decl., [0145].

Alternatively, as also discussed *supra* §VI.B.1.e ([1E]), it would have been obvious in view of POSAs' background knowledge to provide functionality allowing for the *wireless telephone* to *instruct said remote server to change* the list of users. It would have been obvious to allow such *changing* to include *adding an additional user* because doing so was well-known as a beneficial option with reasonable expectation of success in a system like Sheha's. Williams-Decl., [0146]-[0147] (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

Sheha discloses *displaying* in the Map Caller-ID screen "identification information 32 of both...users." Sheha, 9:23-36. In the FIG. 5 example, the identification includes at least two *names* shown as representing the "Remote **Location**" (*second location*)—the name "John Smith," and the city name "Pasadena, CA." Sheha, FIG. 5; *see* EX1001, 8:12-17 (broadly referencing "area names"); Williams-Decl., [0148].

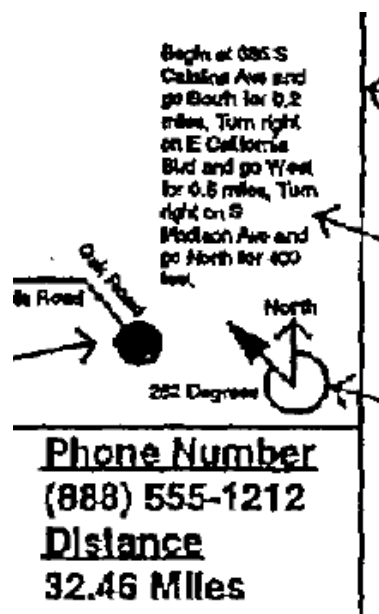


Sheha, FIG. 5 (excerpt).

Alternatively, it would have been obvious to *display the name of said second location* to help the user understand where that location is, in view of POSAs' background knowledge of the well-known design choice and reasonable expectation of success to do so when displaying a mobile device's location. Williams-Decl., [0149]-[0153] (citing corroborating EX1059 ("Zellner"), 4:4-32; EX1018 ("Meadows"), Abstract, 6:1-6; EX1060 ("Jhanji"), 11:12-19).

4. Claim 4

Sheha discloses "provid[ing]...*distance* measurements between the local and remote positions" of the two *wireless telephones*. Sheha, 3:29-34. These distances, and "[a]dditionally...driving direction *distance* information for the optimal route" between the two *wireless telephones* can be *displayed* in the Map Caller-ID on the *wireless telephone*. Sheha, 9:23-39, FIG. 5; Williams-Decl., [0154]-[0155].



Sheha, FIG. 5 (excerpt).

5. Claim 5

Sheha’s mobile device’s “privacy settings” that the ODAS “quer[ies]” can “determine[] the *period* of the position transfer” which “can be set for...a *predetermined length of time.*” Sheha, 4:59-66, 5:9-14, 3:10-13; Williams-Decl., [0156].

6. Claim 12

Sheha describes each “mobile device receiv[ing] the Map Caller-ID” that displays “the other’s position information” for “providing real-time driving directions,” where a mobile device can be located in “a motor vehicle” and connected to “an in-vehicle navigational device.” Sheha, 11:42-52, 4:52-58, 10:27-41, 12:8-41. In this scenario, the *received and displayed* location of the mobile device is *a location of a car*. Williams-Decl., [0157].

7. Claim 73

a. Previously Addressed Elements

Sheha meets the following elements of claim 73 for the reasons discussed in the corresponding sections above. Williams-Decl., [0160]-[0164].

Element	Addressed in Section:
[73PRE]	§VI.B.1 ([1PRE])
[73A]	§VI.B.1.a ([1A])
[73B]	§VI.B.1.b ([1B])

[73C]	§VI.B.1.c ([1C])
[73D]	§VI.B.1.d ([1D]), where Sheha's ODAS is a <i>remote system</i>

b. [73E]

Sheha's system allows one *wireless device* to request another *wireless telephone's location* "without having to initiate a telephone call." Sheha, 11:55-58; *see also id.*, 4:59-5:3. For convenience, this can be referred to as the "no-call embodiment," but as discussed *supra* §VI.B.1.e ([1E]) Sheha also describes features that are available to all embodiments within the context of discussing an example in a call embodiment. When a device user requests another device's location, the ODAS obtains location information from the target mobile device (*wireless telephone*) and provides it to the requesting mobile device (*second wireless device*). Sheha, 12:1-7, 12:42-44; Williams-Decl., [0165]. Thus, the requesting device has no *call for communication* with the target device, instead sending the request to the ODAS. Sheha 11:55-12:7; Williams-Decl., [0165]-[0166].

c. [73F]

Sheha describes ways for a mobile device to provide permission to another mobile device to access its location. Williams-Decl., [0167]. For example, as discussed *supra* §VI.B.1.e ([1E]), the Sheha system can determine the target

mobile device’s privacy settings—also called “*permission* settings” (Sheha, 5:3-20)—by which the device can specify “allowance of position information transfers...only with the device owner’s *permission*.” Sheha, 5:21-46, 4:59-66, 10:17-26; Williams-Decl., [0167]. The target mobile device’s privacy/permissions settings information can include “a group database and authorization and authentication protocols” by which the target device’s user “can define a group of specific users...that are *permitted* to access” the target device’s location information. Sheha, 11:55-12:7, 4:59-5:20; *see also id.*, 13:65-14:2, 14:54-61, 19:9-13; Williams-Decl., [0167]. The ODAS uses this privacy information to determine whether the target device has authorized the requesting device to obtain its location information. Sheha, 3:22-28, 5:21-46, 8:42-53; *see also id.*, 3:4-14, 4:8-18, 9:59-10-4; Williams-Decl., [0167].

In IPR2023-00115 (Paper 13 at 33, 3-9), Mullen argued that Sheha’s “group database disclosures...do not teach storing ‘a permission,’” because purportedly the claimed “*permission*” must be “one consent given by the wireless telephone exclusively to the second wireless device.” Mullen was incorrect, as that is not what the claims recite. [73F] recites a permission “*for said second wireless device to access location information.*” That language limits what the permission is for accessing. It does not exclude the permission from also allowing other devices “*to access location information.*” Mullen’s specification arguments (*id.* at 5-9) also

fail because they improperly attempt to import limitations from a specification embodiment into claims that do not recite those limitations. The Federal Circuit has “repeatedly warned against confining the claims to those embodiments” in the specification, even if it “describes only a single embodiment.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (*en banc*). Further, the ’117 patent itself explicitly states that “a user may organize his/her user list into groups and assign access rights to that group,” just as Sheha does. EX1001, 13:9-12, 3:23-25; Williams-Decl., [0168]-[0170].

Alternatively, even if claim 73 required providing a permission specific to an individual second-device user, Sheha renders this obvious because POSAs would have known that “defin[ing] a group” of authorized users (Sheha, 11:63-65) can include defining a group having only one member, even if other defined groups have multiple members. Williams-Decl., [0171] (citing corroborating EX1022 (“Darling”), 41:20-42:2). Alternatively, allowing a target device’s user to provide permissions specific to individuals in addition to groups would have been an obvious variation because doing so was well-known as a beneficial option with reasonable expectation of success in a system like Sheha’s. Williams-Decl., [0172]-[0174] (citing corroborating EX1007 (“Randall”), [0052], [0070], [0136], [0144]-[0146]; EX1015 (“Friedman”), 12:60-13:21; EX1022 (“Darling”), 3:3-5).

In IPR2023-00115 (Paper 13 at 32-33), Mullen also relied on its arguments from claim 1 that “Sheha’s privacy settings are not user-specific” and Sheha’s “group database disclosures” do not “apply[] to mobile devices.” Those arguments fail for the reasons discussed *supra* §VI.B.1.e ([1E]). Williams-Decl., [0175].

Thus, in Sheha, the *wireless telephone can provide permission* for the *second wireless device to access its location information*. Williams-Decl., [0176]-[0177].

d. [73G]

As discussed *supra* §VI.B.1.e ([1E]), Sheha teaches embodiments where the ODAS (*remote system*) implements the “authorization and authentication protocols” and the “group database” described in 11:63-12:7 for *storing permissions* for specific users (discussed *supra* §VI.B.7.c ([73F])). See Sheha, 3:4-13 (“networked server system utilizing authentication and authorization procedures”), 4:8-18 (“online database and/or networked authentication and authorization connection server”), 7:22-23 (“online **database** and application server (ODAS)”), 8:42-53 (“ODAS 3 us[es] authentication and authorization protocols” to “verify the level of authority each user is granted”), 9:61-10:4; Williams-Decl., [0178]. Sheha’s ODAS is *located remotely from* the mobile devices as discussed *supra* §VI.B.1.d ([1D]).

Alternatively, *storing* the group *permissions* and implementing their utilization at the server would have been an obvious variation because doing so

was well-known as a beneficial option with reasonable expectation of success in a system like Sheha's. Williams-Decl., [0179]-[0183] (citing corroborating EX1054 ("Sandhu"), 5:8-6:22; EX1007 ("Randall"), [0511]-[0514]; EX1015 ("Friedman"), 12:60-13:21; EX1022 ("Darling"), 3:1-5). Also, with respect to any privacy settings set locally at the target device, POSAs would have understood that an obvious implementation was for the *remote system* to *store* those settings after verifying them by querying the device (Sheha, 4:64-66), so the *remote system* can then apply them to determine whether to release the device's location to a requesting user. Williams-Decl., [0184]-[0185].

e. [73H]

"When a mobile device's position information is requested," Sheha's remote "system, based on privacy settings, responds with the appropriate position information to the requesting user's device." Sheha, 12:1-7. This can occur "without having to initiate a telephone call." Sheha, 11:55-12:7; Williams-Decl., [0186]; *see supra* §VI.B.7.b ([73E]). As discussed *supra* §§VI.B.7.c-VI.B.7.d ([73F]-[73G]), the privacy settings can be maintained by the *remote system* and can identify specific users permitted to access the *location information*. Williams-Decl., [0186]-[0187].

f. [73I]

Sheha's system can transfer position information for one device to another as a map. Sheha, 3:50-55, 4:22-26, 4:47-58, 11:55-12:31; Williams-Decl., [0188]. Further, Sheha discloses devices with displays to provide maps showing the locations of the target and the requesting wireless devices. Sheha, 9:23-39, FIG. 5 (labels 33 and 34, annotated below); Williams-Decl., [0188].

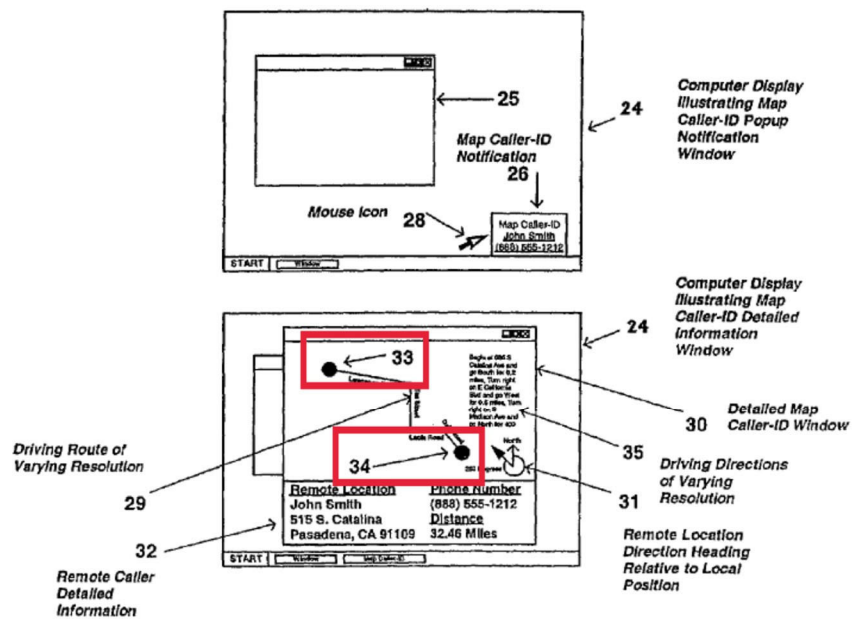


FIG. 5

Sheha discloses that such “a *map*...can be displayed on the mobile telephone.” Sheha, 4:43-58. While Figure 5 and 4:43-58 are presented in the context of examples involving a landline, they equally apply in the mobile-to-mobile context, which Sheha explains is “similar to a landline-to-mobile

application.” Sheha, 4:59-5:11, 4:13-18; *see also id.*, 4:52-58, 11:36-12:7; Williams-Decl., [0189]. Sheha also discloses that both the target and the requesting device can display maps with respect to the positions of both devices. Sheha, 4:52-58, 11:10-51, *see id.*, 11:42-44 (“both the originating and destination mobile device receive the Map”); Williams-Decl., [0189].

In IPR2023-00115 (Paper 13 at 33-38), Mullen argued that Sheha’s “map” displayed “on the mobile telephone” at 4:52-58 is somehow not “a graphical map” like FIG. 5 and cannot be received without a phone call. These assertions are wrong. FIG. 5 is the only type of “map and address” (Sheha, 4:52-58) display illustrated in Sheha, and nothing in Sheha suggests that the “map” discussed at 4:52-58 would be anything other than graphical. Williams-Decl., [0190]. Indeed, Sheha expressly states that a “map...*can be displayed* on the mobile telephone.” Sheha, 4:52-58. And Sheha teaches that the no-call embodiment only differs from the phone-call embodiment in how the device “request[s] position information” (Sheha, 11:55-12:7), not in how that information is displayed. Williams-Decl., [0190]. Regardless, claim 73 does not require the *map* to be “graphical.” Williams-Decl., [0190].

Mullen’s related argument in IPR2023-00115 (Paper 13 at 35-36) that Sheha’s mobile devices can only pass maps to “a separate device” for display is also incorrect. While Sheha (12:8-41) explains that *some* embodiments use an

“accompanying device” that “is better suited for navigational displays and computations” than a “typical mobile navigational device” which may be “not optimal for navigational purposes,” *other* embodiments can still display the “map...on the mobile telephone” as discussed at 4:52-58. Williams-Decl., [0191].

Alternatively, implementing Sheha to display a map on either or both of the requesting and target wireless devices, without a telephone call, to display the target device’s location would have been an obvious variation in view of POSAs’ background knowledge of the convenient option and reasonable expectation of success in doing so. Williams-Decl., [0192]-[0199] (citing corroborating EX1007 (“Randall”), [0021], p. 29; EX1054 (“Sandhu”), 6:22-50; EX1014 (“Wollrab”), FIGs. 1-4C; EX1017 (“Grube”), FIG. 2, 4:38-57, 5:13-17, 6:14-27, 6:59-7:6; EX1018 (“Meadows”), 2:2-7, 3:59-67, 5:48-57, FIG. 4b).

8. Claim 74

Sheha’s mobile devices can be *wireless telephones*. Sheha, 10:66-11:9 (“mobile device 18b, such as a cellular telephone or wireless voice-enabled PDA” and “another mobile device 18c”), 11:55-12:7, 4:49-66; Williams-Decl., [0200]-[0202].

9. Claim 75

As discussed *supra* §VI.B.7.f ([73I]), Sheha discloses (or at minimum renders obvious) that the requesting device can display *a map with location*

markers associated with the locations of both the target and the requesting wireless devices (e.g., markers 33 and 34 in FIG. 5). Sheha, 4:52-58, FIG. 5 (annotated below), 6:51-56, 7:35-38, 7:44-48, 9:23-39 (map displays “map location 33 of the caller” and “map location 34 of the destination telephone number”), 11:36-44; Williams-Decl., [0203]-[0204].

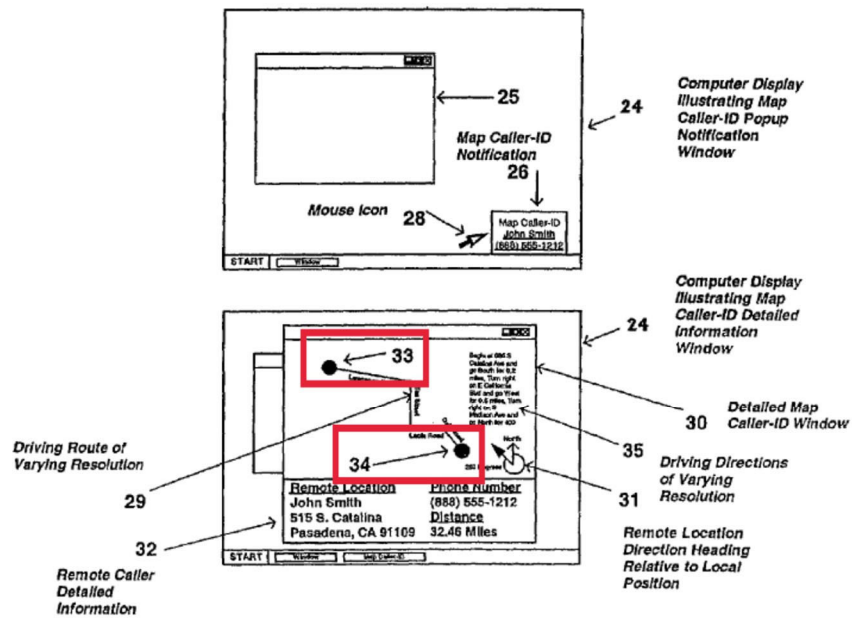


FIG. 5

10. Claim 76

Sheha teaches that the *second wireless device's permission to obtain said location* “can be terminated by the” *wireless telephone* “at anytime.” Sheha, 5:11-20; 5:34-38; Williams-Decl., [0205]-[0206].

11. Claim 77

As discussed *supra* §VI.B.1.b ([1B]), §VI.B.7.a ([73B]), Sheha's mobile device's *positioning system* may be GPS. Sheha, 10:5-16; Williams-Decl., [0207]. The '117 patent acknowledges that it was "background" knowledge that GPS uses *signals received from multiple satellites* to determine a location. EX1001, 1:21-31; Williams-Decl., [0207]. Sheha discloses that mobile devices may obtain *updated* positions and *provide* them to the *remote system*. Sheha, 11:10-51 (mobile devices "continually send their updated position information to the ODAS 3"), 11:55-12:7, 12:42-47; Williams-Decl., [0208]-[0209].

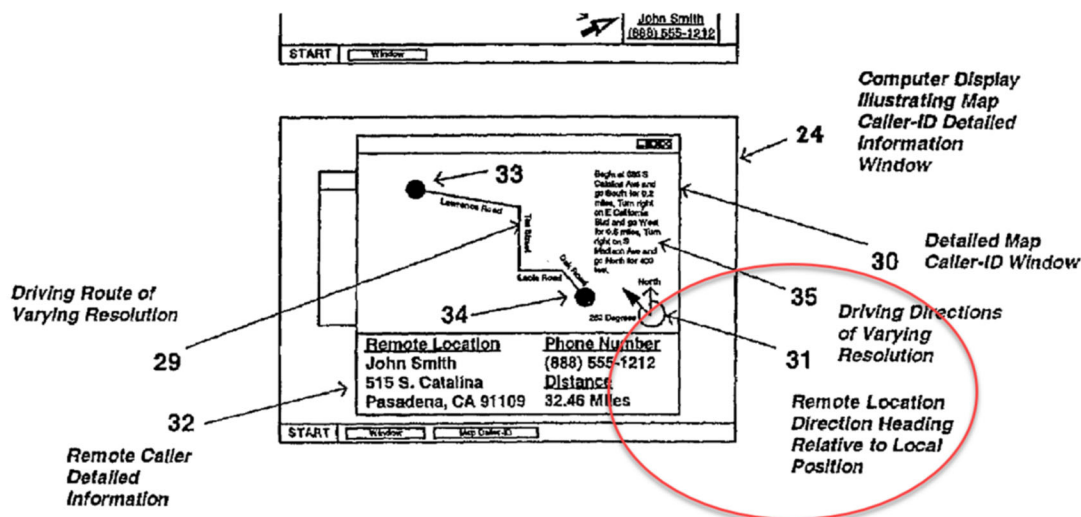
12. Claim 79

Sheha discloses that the *locations* of both requesting and target device may be *displayed* on a map on either/both *wireless telephones*. Sheha, 4:22-26; 4:52-58; 5:47-63; 7:35-39, 9:23-39, FIG. 5; Williams-Decl., [0210]-[0211]; *see supra* §VI.B.7.f ([73I]), §VI.B.9 (claim 75).

13. Claim 83

As discussed *supra* §VI.B.7.f ([73I]), §VI.B.9 (claim 75), §VI.B.12 (claim 79), Sheha teaches *displaying said first map identifying said location of said wireless telephone and a location of said second wireless device*. Williams-Decl.,

[0213]. The map is *from a perspective of the displaying device*,⁵ e.g., because it represents that device's location as the "Local Position" and provides heading and directions from that location, as shown in FIG. 5 (annotated below). Sheha, 9:23-39, 6:52-56; Williams-Decl., [0213]-[0214].



14. Claims 84, 85

As discussed *supra* §VI.B.1.e ([1E]), §VI.B.7.c ([73F]), Sheha's wireless-telephone user can *instruct* the ODAS⁶ to allow "specific users [to] have *access*" to their *location* "without...a telephone call" (Sheha, 11:55-12:7), which POSAs would have understood allows access *for an indefinite period of time*, because the

⁵ Claim 83's "*first wireless device*" lacks antecedent basis and is interpreted as encompassing claim 73's "*wireless telephone*."

⁶ Claim 85's "*said remote server*" lacks antecedent basis and is interpreted as encompassing claim 73's "*remote system*."

authorized user may access the location at any time, untethered to any call.

Williams-Decl., [0215]. Sheha also discloses a *wireless telephone instructing* the ODAS to *allow access* to its location until “terminate[d]” by “manual intervention” or for “as long as [a] call is active,” which are *indefinite periods of time* because their length is not known *a priori*. Sheha, 5:15-46; Williams-Decl., [0215]-[0216].

15. Claims 81, 86, 90

Sheha meets the limitations added by the following claims for the reasons discussed in the corresponding sections above. Williams-Decl., [0212], [0217]-[0218].

Claim(s):	Limitation Addressed in Section:
81, 86	§VI.B.5 (claim 5)
90	§VI.B.6 (claim 12)

VII. GROUND 3: SHEHA IN COMBINATIONS WITH FROEBERG, DEGNBOL, BOLING, BECHTOLSHEIM, SMITH

A. Degnbol (EX1035)

Degnbol describes notifying a user when another pre-selected user enters a pre-determined area or into proximity to 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-Decl., [0219]-[0222].

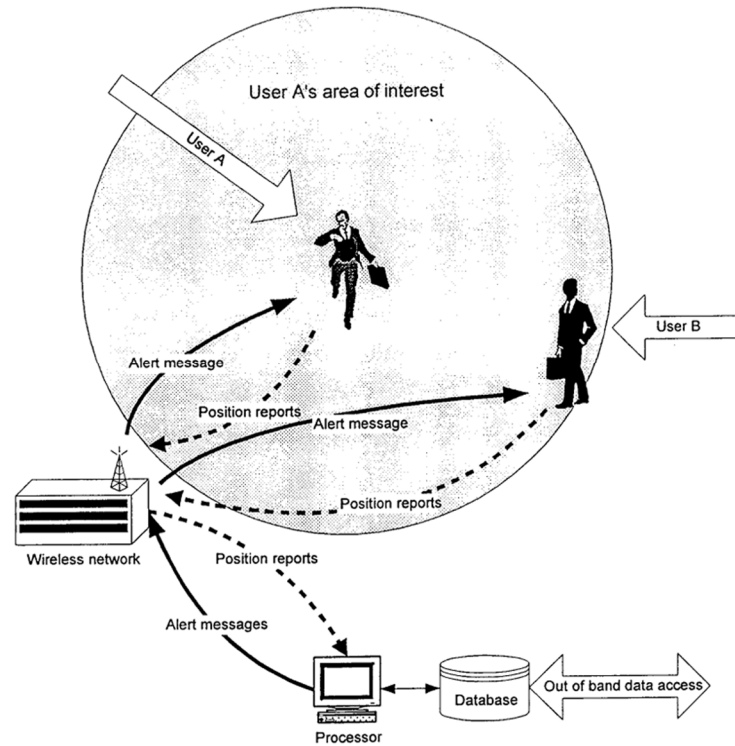


Fig. 1

B. 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., [0223].

C. 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 computes “the time to travel” each “combination driving/walking route” to select the best one. Bechtolsheim, 19:17-36. Additionally, the “program can provide . . . routes that use public transportation” and compare the “travel time” to that “using a private vehicle.” Bechtolsheim, 21:26-59. The navigation information can be provided “on hand-held computer devices, such as personal digital assistants, telephones,” etc. Bechtolsheim, 20:45-47. Williams-Decl., [0224]-[0226].

D. 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., [0227]-[0230].

E. Combinations of Sheha/Sheha-Froeberg with Degnbol, Boling, Bechtolsheim, Smith

Degnbol: POSAs would have been motivated to incorporate various location-based alerts to more effectively share location data in Sheha's system (with or without Froeberg), 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., [0231]. POSAs would have reasonably expected success applying such alerts because Sheha's system already 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., [0231], [0065]-[0073].

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. Williams-Decl., [0232].

Bechtolsheim: Bechtolsheim teaches to compute the time to travel a combination driving-and-walking route to the destination because the "user may not necessarily be able to park at the destination location" and will walk there from their parking spot, and also to provide public-transportation route options that may

save the user time. Bechtolsheim, 1:27-50, 19:17-36, 21:53-56. POSAs would therefore have been motivated to provide such routes and travel-time computations in Sheha/Sheha-Froeberg 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., [0233].

Smith: POSAs would have been motivated and reasonably expected success to include in Sheha's/Sheha-Froeberg's wireless telephones contact-list functionality as in Smith, because such functionalities were routine and typical in wireless devices. Williams-Decl., [0234].

F. Mapping to Challenged Claims

1. Claim 6

Claim 6 is obvious over Sheha-Degnbol/Sheha-Froeberg-Degnbol because the "two-way wireless communication devices (e.g., telephones or pagers) [have] the ability to *alert* user 'A's' communication device when a user 'B' enters the proximity of user 'A,'" per Degnbol's teachings. 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., [0235]-[0236].

2. Claim 7

Claim 7 is obvious over Sheha-Degnbol/Sheha-Froeberg-Degnbol. Sheha describes *requesting a remote server to provide* device-location data (Sheha, 6:15-16), and Degnbol teaches that *alerts* are provided by a "processor," which is shown

in FIG. 1 (annotated below) as *remote* from the users (Degnbol, FIG. 1, 21:3-6), and which POSAs would have understood to be commonly implemented as a *server*. Williams-Decl., [0237]. In Sheha-Degnbol/Sheha-Froeberg-Degnbol, these *alerts* are *provided* by the processor based on a *request* from the user device. Degnbol, 11:1-14; Williams-Decl., [0238]-[0239].

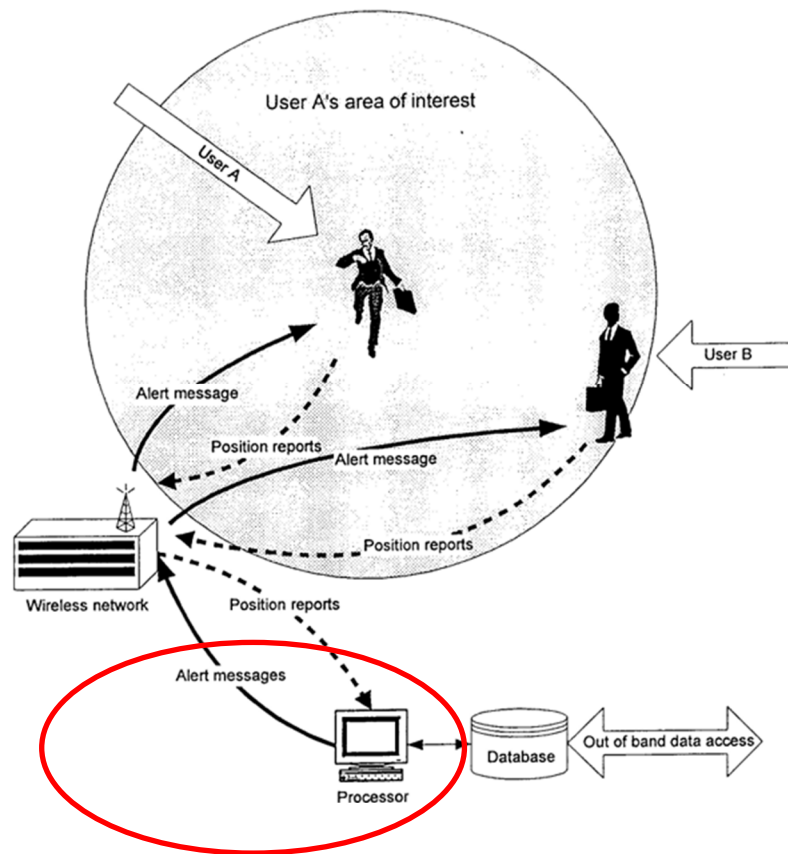


Fig. 1

3. Claims 8, 82

Claims 8 and 82 are obvious over Sheha-Degnbol/Sheha-Froeberg-Degnbol, which incorporates Degnbol's *geographic-area-based alerts*: "user 'A' may choose to configure the system so that he...receives alerts," which "may be 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 notified when a contact's device "arriv[es] at a given area." Degnbol, 9:34-10:3, 11:1-3, 6:1-8, 13:19-21; Williams-Decl., [0240].

In IPR2023-00115 (Paper 13 at 39-45), Mullen argued that Degnbol only discloses distance-based alerts, not geographic-area-based alerts. Mullen was incorrect. Degnbol teaches that alerting a user when another user is within a specified distance is just one set of available options, while other options alert the user when the other user is in a specified geographic area. *See* Degnbol, 12:10-12 ("notification allows the user to...selectively (choose to) communicate with users in his area (***or another designated area***)"), 3:11-15 ("alert" based on "pre-defined area []***or*** proximity"), 3:23-27 (alerts to "proximity ***or*** approximate whereabouts of user"), 6:6-8 ("Each predetermined range may be associated with a geographic area, such as a continent, country, district, city, co-ordinate range or a street. The geographical area may be selected by the user."), 12:4-6 ("criteria based on unit locations ***or*** proximity"), 19:1-3 (same), 18:5-8 ("specify" alerts when certain

“criteria relating to distance, *location*, time or date are met”); Williams-Decl., [0241].

For example, a user can “request to be alerted of the[ir] spouse’s arrival *at a given area on his/her regular route home*,” which is a specified geographic area rather than a distance from the user. Degnbol, 13:17-21; Williams-Decl., [0242]. And in Table 1 (highlighted below), “JohnS has [a] profile[]” specifying to “alert him of a specific user *reaching a particular map point*” specified as “City: Street.” Degnbol, 22:1-8:

User Name	Unit ID	Altering Times	Geo Area	Users	Interests	Permissions
JohnS	jsmith@domain.com	1000-1400	Proximity < 2km	Any	Sports: Bball: NBA: Bulls	Any
	555-234-5678	1700-2000	City: Street	JulieS	-	JulieS

Table 1. PROFILES Data

Degnbol thus teaches *geographic-area-based alerts*. Williams-Decl., [0243]-[0244].

4. Claims 9, 87

Claims 9 and 87 are obvious over Sheha-Degnbol/Sheha-Froeberg-Degnbol, which incorporates Degnbol’s teaching to “inform[]” a user at his *wireless telephone* “that he has been the subject of an alert to another user” (i.e., when the

other user *locates said wireless telephone*, e.g., by being informed that the user’s location is nearby the other user). Degnbol, 21:4-6, 18:27-31; Williams-Decl., [0245]. It would alternatively have been obvious to *receive an alert* whenever another user requests to access the *wireless telephone’s* location in any way (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., [0245]-[0247] (citing corroborating EX1071 (“Rice”), 9:26-35, 7:40-49, 9:36-51, 12:20-33).

5. Claims 10, 88

Claims 10 and 88 are obvious over Sheha-Degnbol/Sheha-Froeberg-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., [0248]. In light of Sheha’s teachings to *receive and display* the *location* of various communication devices like those Degnbol lists (Sheha, 9:50-53), it would have been obvious to *receive and display* any suitable device’s *location*, including a *watch*. Williams-Decl., [0248]-[0250].

6. Claims 11, 89

Claims 11 and 89 are obvious over Sheha-Boling/Sheha-Froeberg-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; *supra* §VII.B; Williams-Decl., [0251]-[0252] (citing corroborating EX1076 (“Lelievre”), Abstract, [0047], FIG. 5). In light of Sheha’s teachings to *receive and display* various mobile devices’ *locations* (Sheha, 12:58-60, 19:41-46, 12:1-7), POSAs would have been motivated and reasonably expected success to *receive and display* any suitable mobile device’s *location*, such as a *radio* per Boling. Williams-Decl., [0253]-[0254]; *supra* §VII.E.

7. Claims 13, 91

Claims 13 and 91 are obvious over Sheha-Bechtolsheim/Sheha-Froeberg-Bechtolsheim.

As discussed *supra* §VII.C, §VII.E, POSAs would have incorporated in Sheha’s system Bechtolsheim’s teachings to compute the *time to reach* the destination via various routes *according to two types of travel: walking and driving*. Bechtolsheim, 1:27-50. Bechtolsheim further teaches that the user may wish to “choose one” of the available combined 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 *display* travel-time information for a combination driving/walking route to aid the user’s selection. Williams-Decl., [0255]-[0257]. Bechtolsheim teaches

to “provide[]” the navigation information to the user’s device from “a remote location” where it is computed. Bechtolsheim, 5:16-19.

Based on Bechtolsheim’s teachings, POSAs would have been motivated and reasonably expected success to implement Sheha’s/Sheha-Froeberg’s *wireless telephone* to *receive* (from the server) *and display information indicating time to reach* the destination (another wireless device’s *location*) *according to both driving and walking*, meeting claims 13 and 91. Williams-Decl., [0258].

Additionally, Bechtolsheim teaches to “provide...routes that use public transportation” and “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 *receive and display* travel-time information for both *subway* and *driving* routes to allow the user to select one, which also meets claims 13 and 91. Williams-Decl., [0259].

8. Claims 14, 92

Claims 14 and 92 are obvious over Sheha-Smith/Sheha-Froeberg-Smith. 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's/Sheha-Froeberg's *wireless telephone* to be *capable of downloading from a remote system associated with the ODAS a phone book corresponding to the user*—i.e., a set of EBCs/CLIDs of contacts of interest to create the user's contact list on the *wireless telephone*. Williams-Decl., [0260]-[0262].

9. Claim 78

Claim 78 is obvious over Sheha-Degnbol, which incorporates Degnbol's teaching to allow the *wireless telephone* user to “indicate[]” a “direct distance,” to *receive an alert* when a contact's *second wireless device is within that distance of said wireless telephone*. Degnbol, 6:10-17, 8:22-29, 11:5-11 (“*receive[] alerts* when a Buddy comes within the range of 500 meters”), 22:1-8, Table 1 (“Proximity <2km”); Williams-Decl., [0263]-[0264].

10. Claim 80

Claim 80 is obvious over Sheha-Degnbol, which incorporates Degnbol's teaching that the *wireless telephone* user can “*set[]* various preferences...directly from the...cellular phone” with respect to “a ‘Buddy List’” of “users whose location and/or movements the user wishes to be notified of.” Degnbol, 9:32-10:3, 11:1-3. “Preferences can be configured on an individual Buddy basis” and can

“specify to be alerted only when certain criteria...are met.” Degenbol, 10:17-11:3, 18:5-7; Williams-Decl., [0265]-[0266].

VIII. 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 which handles data passing to and from several applications resident on the device, the framework being shared by each of the applications.” Randall, [0002], [0006]. The wireless devices can be “radio telephones, smart phones,” etc., which “can access information on” “internet servers hosting extensible databases.” Randall, [0002], [0029]. 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., [0268]-[0269].

“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., [0270]-[0274].

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., [0275]-[0276]. 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

a. [1PRE]

Each of Randall’s “*wireless* information device[s]” can be a “radio *telephone*[.]” or “*smart phone*[.]”—i.e., *a wireless telephone*. Randall, [0002]; Williams-Decl., [0277]. 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., [0277]. Alice’s device is an exemplary *wireless telephone* (as is Bob’s). Williams-Decl., [0277]-[0278].

b. [1A], [1C]

Randall’s “wireless information devices run[] applications which access data...using a standardised set of APIs,” which involves running “[s]oftware.” Randall, [0048], [0450], p. 31 (claim 19). POSAs would have understood that devices such as smart phones (Randall, [0002]) that run software applications and use APIs typically, conventionally, and obviously do so via a *processor* executing *programming stored in memory*. Froeberg, 2:29-38, 4:27-5:24; Williams-Decl., [0279]-[0284], [0287]-[0292] (citing corroborating EX1013 (“De-Vries”), 12:40-

51, 4:60-65, FIG. 6; EX1056 (“Stewart”), 5:41-58, FIG. 2; EX1023 (“Smith”), 5:19-6:2).

c. [1B]

Randall’s wireless device uses “GPS” to *determine* its *location*. Randall, p. 24 Table 4 (“People tracking”), p. 22 Table 1 (“GPS location”), p. 29 (“Route finder”); Williams-Decl., [0285]. POSAs would have known that “GPS” stands for “global *positioning system*.” Williams-Decl., [0285]-[0286]. The ’117 patent admits this was prior-art “background” knowledge. EX1001, 1:21-34.

d. [1D]

“[R]esident on” Randall’s “wireless information device” is a “location application (which gives a user’s location and includes digital maps).” Randall, [0009], [0021]. Randall’s “I-*server* is up-dated with the location of a person” when their “GPS wireless information device...*transmits [its] location...to the i-server*, enabling authorised people to track the location of the GPS wireless information device by polling the server.” Randall, p. 24 (“People tracking”). The i-server is an “internet *server*[.]”—a “*server* on the Internet”—which POSAs would have known is a *remote server*. Randall, [0029], [0053], [0030] (“application resident on the device queries and receives data from the *remote*, extensible database”), FIG. 4 (showing the system’s servers located remotely from the wireless devices); Williams-Decl., [0293].

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 *wireless telephone*’s “GPS *location*.” Randall, [0503]-[0512], [0116]-[0136] (“Identity” used for sharing “Location information”); Williams-Decl., [0294]-[0296].

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. [1E]

In Randall's system, each user is "authentica[ed]...when they access their data" using their "WID and password/passphrase." Randall, [0380]. Alice's data ("Alice's i-Data") is in a "database" on the "i-server" (*remote server*) which she can access via her "mobile device to allow her to manage her data." Randall, [0502]-[0505]; Williams-Decl., [0297]. Alice thus has *a profile associated with her wireless telephone* in the i-server database in which she can make changes to her data by *instructing said remote server* via her *wireless telephone*. Williams-Decl., [0297].

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* §VIII.B.1.d ([1D]) and shown in Table 1, one of the fields in Alice's "i-Data" database on the i-server is information about her device's "GPS *location*," and she can designate that field as being accessible to a particular list of users—in the Table 1 example, she has designated "GPS location" as accessible to users whom she has designated as part of the "i-Group" called "partner;" POSAs would have understood that she could similarly designate it to be accessible to a different i-Group, such as "friends" or "family." Randall, [0503]-[0512], [0021] ("[t]he

user’s friends or parents etc” can be “allowed...to track his or her location”); Williams-Decl., [0298]. 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] (“users will be prepared to allow specific people access to more of their data than others”). Thus, the users Alice has designated as having access to her GPS location are *a list of users on said remote server for a profile associated with said first wireless telephone* (Alice’s iData profile on the i-server) *that are allowed to access said location.* Williams-Decl., [0298].

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] (“people in the list” can “look[] at” the user’s information “using an application on their...wireless information devices”), p. 25 (user’s “address book” of contacts includes “mobiles you regularly phone”), [0511], Table 2 (showing “Number” of each contact). Thus, Alice can choose wireless user contacts to assign 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., [0299]-[0300].

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* in that i-Group—which Alice can use via her device (i.e., the *wireless telephone instructing said remote server*) to provide permission for Bob’s device to access information about her device’s location, making Bob one of the *users* of the *list of users*. Randall, [0509], [0495]; Williams-Decl., [0301].

“When one of the people in [Alice’s contact] list...looks at Alice’s ADS Number, (using an application on their...wireless information device[])”—e.g.,

when Bob’s device requests Alice’s location information—“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., [0302]. “When Bob’s device sends Alice’s ADS Number to the server, then the server recognises Bob’s device and allows that device to read Alice’s information held on the database which is specified as being accessible to Bob.” Randall, [0049]. “[T]he server recognis[es] Bob’s device and determin[es] the database *access* rights which Alice has given him,” and then “[o]nce authenticated, the *server* passes to Bob’s device the information it requests.” Randall, [0067]. This “enabl[es] authorised people to track the location of the GPS wireless information device by polling the *server*” which has been “updated with the location of” Alice’s device. Randall, p. 24 (“People tracking”). Thus, Bob is *allowed to access Alice’s location by way of said remote server providing said location from said remote server to Bob*, provided Alice has made him a *user of said list of users*. Williams-Decl., [0302]-[0303].

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* as “instructions indicating how to navigate from one location to another location” (*see supra* §VI.B.1.f). Williams-Decl., [0304]-[0305].

Further, Randall provides a “Rendezvous” service “on your mobile phone to help you meet friends and family in crowded or unfamiliar places. Temporarily you can elect to have your location visible to others—so using your phones everyone in your group can tell precisely where the others are.” Randall, p. 29. Randall teaches that “[a]t the touch of a button, your phone can display a map of the area you are standing in” (Randall, p. 29) and it can 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 can be “where you want to go” in Randall’s “Route finder,” which can “give you step by step instructions on how to get there” (Randall, p. 29). Williams-Decl., [0306]. As discussed *supra* §VIII.A, Randall teaches that applications share information and coordinate to provide services of interest to users. POSAs would have been motivated and reasonably expected success to use, e.g., Alice’s location (which is provided to Bob’s device by the i-server in the manner discussed *supra* §VIII.B.1.e ([1E])) as a “Rendezvous”-type destination in the “Route finder” service on Bob’s device to provide Bob directions to Alice’s

location, and vice-versa (providing directions to Bob's location on Alice's device). Williams-Decl., [0306].

That is, 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., [0304]; Randall, [0067] ("Bob also has stored on the server his own personal information"), [0053] ("Consider Alice...and Bob"—language introducing Alice and Bob as generic examples), [0510] ("Bob's details" are downloaded to "Alice's...device" just as "Alice's contact" is provided to "Bob's device[]"). Even if Randall had not explicitly taught this, it would have been an obvious implementation option to allow any wireless device users to subscribe to the same functionality (including contacts functionality and location functionality) in Randall's system. Williams-Decl., [0304]. 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) for a specific period of time"—e.g., "for the half hour that the group of friends are trying to locate each other in town." Randall, [0144], [0136], [0143]. Thus, Bob can also "choose to subscribe to [the] service which allowed others to track his...location" (Randall, [0021]), such that Alice can access Bob's *second location* the same way Bob can access Alice's *location*. Williams-Decl., [0304].

Thus, Randall teaches, or at minimum renders obvious, *receiving and displaying*, at Alice's *wireless telephone*, *directional information representative of directions between Alice's location and a second location associated with Bob's wireless telephone*. Williams-Decl., [0304]-[0307].

To the extent [1F] requires calculating the *directions* remotely and sending them to the *wireless telephone* (which [1F] does not require, as discussed *supra* §VI.B.1.f), generating the *directions* between Alice's and Bob's locations at the i-server and *receiving* the *directions* from the i-server at Alice's device would have been an obvious implementation of Randall's system 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., [0308]-[0312] (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., [0308]. 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., [0309]. POSAs would have been motivated to implement Randall’s i-server to generate the claimed *directions* for transmission to Alice’s *wireless telephone* in view of, e.g., Froeberg’s teachings that doing so allows storage and/or processing requirements for generating *directions* to be implemented server-side, thus reducing such requirements locally at the mobile device. Froeberg, FIGs. 4-5, 7:5-22, 4:27-6:20. Williams-Decl., [0310]; *see supra* §VI.B.1.f. 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., [0311]-[0313].

2. Claim 2

As discussed *supra* §VIII.B.1.e ([1E]), Randall teaches that Alice’s *wireless telephone* can *instruct* the i-server (*remote server*) to “promot[e] Bob from” one i-Group to another to “change [his] level of access.” Randall, [0502]-[0505], [0509]. Adding Bob to the i-Group that has access to Alice’s location information is *adding an additional user to said list of users*. Williams-Decl., [0314]-[0315]; *see, e.g.*, Randall, [0503]-[0512].

3. Claim 3

Bob’s device can determine its location for reporting to the i-server via GPS, or “[a]lternatively, a Bluetooth pod.” Randall, p. 24 (“People tracking”). When

Alice accesses Bob’s data (including his location, as discussed *supra* §VIII.B.1 (claim 1)) “using” her “wireless information device[,]” she “see[s] a view onto [Bob’s] personal data” that is a subset of his full data—like a subset of Table 1. Randall, [0512], *compare* Table 3 ([0512]) *with* Table 1 ([0505]); Williams-Decl., [0316]. In Table 1, an example “GPS location” is “London W1, Seymour St.,” and an example “Bluetooth location” is “Sentinel room 2.” Randall, [0505]. Each example is a *name of someone’s location*. Williams-Decl., [0316]. Either of those types of examples in the “view” Alice “see[s]” of Bob’s data (Randall, [0512]) is *displaying the name of said second location on Alice’s wireless telephone*. Williams-Decl., [0316].

Alternatively, it would have been obvious to *display the name of Bob’s location* as part of allowing Alice to track Bob’s location (Randall, [0021], p. 24 (“People tracking”)) to help Alice understand where Bob is, in view of POSAs’ background knowledge of the well-known design choice and reasonable expectation of success to do so when displaying the location of a mobile device. Williams-Decl., [0317]-[0321] (citing corroborating EX1059 (“Zellner”), 4:4-32; EX1018 (“Meadows”), Abstract, 6:1-6; EX1060 (“Jhanji”), 11:12-19).

4. Claim 4

Randall provides that “you can tell the phone to send your location to [friends] in an instant, letting them *see how far away you are.*” Randall, p. 30

(“The Beacon Button”). POSAs would have found it obvious to implement letting Alice see how far away Bob is by *displaying the distance between Alice’s wireless telephone and Bob’s one of said plurality of wireless telephones*. Williams-Decl., [0322].

Additionally, as discussed *supra* §VIII.B.1.f ([1F]), POSAs would have understood that Bob’s location can be “where [Alice] want[s] to go” in Randall’s “Route finder,” which can “give [Alice] 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. POSAs would have found it obvious that once Alice is on the final leg of the route, the system will *display the distance* between Alice’s and Bob’s devices to tell Alice how many more “metres” to “[c]arry on.” Williams-Decl., [0323].

Alternatively, it would have been obvious to implement Randall’s “Route finder” to *display the distance between Alice’s and Bob’s wireless telephones* when Bob’s location is “where [Alice] want[s] to go,” in view of POSAs’ background knowledge that it was conventional for “system[s] similar to GPS tracking in cars” (Randall, p. 29) to display the distance from the user’s device to the desired destination, to aid the user in planning their trip. Williams-Decl., [0324]-[0332] (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).

5. Claim 5

Randall teaches that Alice can “select the person and allow access” for only “a pre-defined *period of time*,” after which “the location information...again become[s] invisible.” Randall, [0144], [0143] (allowing location access for “*specific period of time*”); Williams-Decl., [0333]-[0334].

6. Claim 11

Randall teaches that “wireless information device[s]” include “*radio* telephones,” and that each wireless information device can “track the location of” any other “GPS wireless information device” for which it is “authorised.” Randall, [0002], p. 24 (“People tracking”), [0021] (teaching “show[ing] the position of” the tracked device “on digital maps”). Alice’s device can thus *receive and display a location of a radio*. Williams-Decl., [0335]. It would alternatively have been obvious to *receive and display a location of* any type of location-transmitting *radio*, which were well-known in POSAs’ background knowledge. Williams-Decl., [0336]-[0339] (citing corroborating EX1074 (“Boling”), Abstract, 4:5-18, 5:6-7, 7:13-26, 9:30-64; EX1076 (“Lelievre”), Abstract, [0047], FIG. 5); *supra* §VII.F.6.

7. Claim 12

Randall teaches to provide a “Route finder” service “similar to GPS tracking in cars, but for mobile phones,” where “the phone...give[s] you step by step instructions on how to get” “where you want to go”—“eg. Turn left at the next lights. ...Go straight over the roundabout.” Randall, p. 29. It would have been apparent to POSAs from these teachings that a user may be using the mobile phone in *a car* when using this service, as users would benefit from such instructions while driving, and instructions to “[t]urn...at...lights” and how to navigate a “roundabout” are typical driving instructions. Williams-Decl., [0340]. In this scenario, POSAs would have understood the mobile phone’s location to be *a location of a car*, which Alice’s device can *receive and display* if Alice is authorized by that user. Williams-Decl., [0340].

Additionally, POSAs would have understood that a typical implementation of a “radio telephone[]” (Randall, [0002]) as discussed *supra* §VIII.B.6 (claim 11) was a car phone, whose location is *a location of a car*. Williams-Decl., [0341]-[0342] (citing corroborating EX1077 (“Aisaka”), 1:14-23; EX1078 (“Kuge”), 1:1-34).

8. Claim 14

As discussed *supra* §VIII.B.1.e ([1E]), Alice’s “Universe” is her “contacts database” which lists “all the entities known to” Alice with their contact

information. Randall, [0511], Table 2, [0509]-[0510], [0060]. POSAs would have understood this to be *a phone book corresponding to Alice*. Randall, p. 25 (“your phone’s address book”); Williams-Decl., [0343]. The “Universe” is stored in a “database” at the i-server (*remote system associated with said remote server*) and also may be “cached on” the user’s “wireless information device[.]” Randall, [0511], p. 23 (“Auto-entering address book”), [0062]-[0063], [0069]. Thus, *Alice’s wireless telephone can download her “Universe” phone book from a remote system associated with said remote server*. Williams-Decl., [0343]-[0344].

9. Claim 73

a. Previously Addressed Elements

Randall meets the following elements of claim 73 for the reasons discussed in the corresponding sections above. Williams-Decl., [0345]-[0349].

Element	Addressed in Section:
[73PRE]	§VIII.B.1.a ([1PRE])
[73A]	§VIII.B.1.b ([1A])
[73B]	§VIII.B.1.c ([1B])
[73C]	§VIII.B.1.b ([1C])
[73D]	§VIII.B.1.d ([1D]), where Randall’s i-server is a <i>remote system</i>

b. [73E]

Randall teaches that Bob's *second wireless device* can request to access Alice's data on the i-server (which includes her *wireless telephone's location* as discussed *supra* §§VIII.B.1.d-VIII.B.1.e ([1D]-[1E])) "by sending to the server an unchanging pointer or key (an 'ADS Number') which is unique to" Alice. Randall, [0049]; Williams-Decl., [0350]. Thus, as Alice's data changes (e.g., as "[t]he I-server is up-dated" with Alice's current location), "Bob can pull the new data into his device" by "polling the server." Randall, p. 24 ("People tracking"), [0053], [0015] ("pull[ing]" information from server is "request[ing]" it); Williams-Decl., [0350]. "When Bob's device sends Alice's ADS Number to the server, then the server recognises Bob's device and allows that device to read Alice's information held on the database which is specified as being accessible to Bob"—i.e., "the server passes to Bob's device the information it requests." Randall, [0049], [0067], [0512]; Williams-Decl., [0350]. Bob's device indicates which "relevant information" it is requesting (which may be, e.g., Alice's location information) by "sending various data tags defining its enquiry." Randall, [0067]; Williams-Decl., [0350]. "Generally, Alice would prefer Bob's data requests to be routed to the server, rather than utilise the limited resources of her wireless information device." Randall, [0069]. Thus, outside of limited "situations...where a connection is being opened up...anyway to support a voice call," more "[g]enerally" Alice's *wireless*

telephone's location is requested by Bob's second wireless device outside of a call for communication between Alice's and Bob's devices. Randall, [0069]; Williams-Decl., [0350]-[0351].

c. [73F]-[73G]

Randall teaches [73F]-[73G] for reasons discussed *supra* §§VIII.B.1.d-VIII.B.1.e ([1D]-[1E]): Alice's *wireless telephone can provide permission for Bob's second wireless device to access location information about Alice's location; the permission can be stored in the i-server (remote system), which is located remotely from Alice's and Bob's devices. Randall, [0021], [0029]-[0030], [0046]-[0049], [0052]-[0053], [0065]-[0071], [0116]-[0136], [0141]-[0146], [0495], [0501]-[0512]; Williams-Decl., [0352]-[0353].*

d. [73H]

“When one of the people in [Alice's contact] list...looks at Alice's ADS Number, (using an application on their...wireless information device[])”—e.g., when Bob's device requests Alice's location information *outside of said call* as discussed *supra* §VIII.B.9.b ([73E])—“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., [0354]. “[T]he server recognis[es] Bob's device and determin[es] the database access rights which Alice has given him,” and then “[o]nce authenticated, the

server passes to Bob's device the information it requests." Randall, [0067]. This "enabl[es] authorised people to track the location of the GPS wireless information device by polling the server," which has been "up-dated with the location of" Alice's device. Randall, p. 24 ("People tracking"); Williams-Decl., [0354]-[0355].

Thus, Alice's *location information is provided from the i-server to Bob's second wireless device in accordance with said permission outside of said call.*

e. [73I]

"[R]esident on [Randall's] wireless information device" is a "location application (which gives a user's location and includes digital maps)." Randall, [0009]. "[Y]our phone can display a map of the area you are standing in." Randall, p. 29 ("Your map and then some"). Thus, Alice's *wireless telephone* can provide *a first map with respect to Alice's location.* Williams-Decl., [0356].

Additionally, as discussed *supra* §VIII.B.1.f ([1F]), Bob can also "choose to subscribe to [the] service which allowed others to track his...location," and Alice's "'map' application...could show [Alice's] position on digital maps and...also show the position of" Bob. Randall, [0021]; Williams-Decl., [0356]. This is another way Alice's *wireless telephone* can provide *a first map with respect to Alice's location* (and also show Bob's location). Williams-Decl., [0356]-[0358].

10. Claim 74

As discussed *supra* §VIII.B.1.a ([1PRE]), Bob's *second wireless device* can be a *wireless telephone*. Randall, [0002], [0491]; Williams-Decl., [0359]-[0360].

11. Claim 75

As discussed *supra* §VIII.B.9.e ([73I]), Alice's *wireless telephone* can *display a map* showing the *location of* Bob's *second wireless device*. Randall, [0021]. POSAs would have understood that “show[ing]” Bob's “position” on the map (Randall, [0021]) involves displaying a *location marker associated with* Bob's *location*, because the position is a *location* and showing it would involve displaying a *marker*. Williams-Decl., [0361].

Alternatively, it would have been an obvious implementation of this disclosure to show Bob's location on the map by displaying a *location marker* at that location on the map, because displaying a marker was well-known in POSAs' background knowledge as a beneficial and commonly used option for representing a location of interest (including a current location of a person's wireless device) on a digital map. Williams-Decl., [0361]-[0363] (citing corroborating EX1014 (“Wollrab”), 4:40-58, FIG. 4B (markers 44-2 through 44-5); EX1018 (“Meadows”), FIGs. 4B, 5B; EX1005 (“Sheha”), FIG. 5; EX1017 (“Grube”) 4:38-57, 6:14-27, 6:59-7:6).

12. Claim 76

As discussed *supra* §VIII.B.1.e ([1E]), §VIII.B.9.c ([73F]), Alice's *wireless telephone* provides Bob *permission* to obtain her location by specifying his access rights to the location field in her i-server database. Williams-Decl., [0364]. Alice can make this information "[v]isible to specific people (or groups) for a specific period of time. (i.e. Location information)." Randall, [0136]. Randall teaches that in "a simple step," Alice can "change a visibility setting, in particular location information." Randall, [0141]. Alice can "switch location information on for a person" (e.g., for Bob) "for a specific period of time, i.e. for the half hour that the group of friends are trying to locate each other in town," and "[a]t the end of the pre-defined period the location information" can "again become invisible." Randall, [0143]-[0144]. Thus, by pre-defining a period of time after which Bob's access to Alice's location ends, Alice's *wireless telephone* can *remove said permission* for Bob's *second wireless device to obtain Alice's location*. Williams-Decl., [0364]-[0365].

13. Claim 77

As discussed *supra* §VIII.B.1.c ([1B]), Randall's *wireless telephone* uses "GPS" as its *positioning system*. As the '117 patent admits, it was prior-art "background" knowledge that "GPS" *receives signals from a plurality of positioning satellites*. EX1001, 1:21-27; Williams-Decl., [0366]-[0371] (citing

corroborating EX1054 (“Sandhu”), 1:12-26, 4:17-33; EX1019 (“Thomas”), 3:26-29; EX1020 (“Murphy”), 1:9-13; EX1021 (“Divakaruni”), 1:29-59).

Randall’s “I-server [*remote system*] is ***up-dated with the location***” which is “obtained via a GPS wireless information device [*said positioning system*], which transmits location information to the i-server,” allowing the updated location to be “track[ed]” as it changes, as is “useful for tracking children and pets.” Randall, p. 24 (“People tracking”). Thus, Alice’s GPS location in Randall is *updated by said positioning system*, and her *wireless telephone provides said updated location to said remote system*. Williams-Decl., [0372]-[0373].

14. Claim 79

As discussed *supra* §VIII.B.9.e ([73I]), §VIII.B.11 (claim 75), Alice’s *wireless telephone* can “show [Alice’s] position on digital maps and...also show the position of” [Bob]. Randall, [0021]. In this map, *said location* of Alice’s *wireless telephone is displayed relative to a second location* of Bob’s *second wireless device*. Williams-Decl., [0374]-[0375].

15. Claim 83

As discussed *supra* §VIII.B.9.e ([73I]), Randall teaches that Alice’s *wireless telephone can display said first map from a perspective of Alice’s wireless device*. Randall, p. 29 (“Your map and then some”—“map of the area you are standing in”); Williams-Decl., [0377]. As discussed *supra* §VIII.B.9.e ([73I]), §VIII.B.11

(claim 75), §VIII.B.14 (claim 79), Randall also teaches that Alice’s *map* can identify her *wireless telephone’s location* and the *location* of Bob’s *second wireless device*. Randall, [0021]; Williams-Decl., [0377]-[0379].

16. Claims 84, 85

As discussed *supra* §VIII.B.5 (claim 5), Randall teaches that Alice’s *wireless telephone* can *instruct* the i-server *to allow* Bob *to access* Alice’s *location* “for a pre-defined period of time.” Randall, [0144]. Randall teaches that Alice can “extend the visibility period to ‘forever’”—i.e., to *an indefinite period of time*. Randall, [0144]; Williams-Decl., [0380]-[0381].

17. Claims 81, 86, 89-90, 92

Randall meets the limitations added by the following claims for the reasons discussed in the corresponding sections above. Williams-Decl., [0376]-[0377], [0382]-[0385].

Claim(s):	Limitation Addressed in Section:
81, 86	§VIII.B.5 (claim 5)
89	§VIII.B.6 (claim 11)
90	§VIII.B.7 (claim 12)
92	§VIII.B.8 (claim 14)

IX. GROUND 6: RANDALL IN COMBINATIONS WITH FROEBERG, DE-VRIES, DEGNBOL, 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 designating that notifications are provided only when the other users on his or her buddy list are within a certain proximity.” De-Vries, 2:52-59. “This proximity parameter can have the form of a geographic distance threshold” or “same city/town/neighborhood,” etc. De-Vries, 9:1-18. “[T]he user can segregate” their contacts “into separate subsets, such as subsets of family, friends, business contacts, co-workers, etc.” and “set the rules and/or parameters that control notifications to also be based on the subset of the other user who moved.” De-Vries, 3:5-14. Williams-Decl., [0386].

B. Combinations of Randall/Randall-Froeberg with De-Vries, Degnbol, 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 (e.g. Bob and Alice are both in the same foreign city and didn’t know it).” Randall, p. 24 (Table 4). To the extent Randall does not specify that the user

can set the rules/parameters for receiving these location alerts and choose among various ways of defining what level of proximity triggers notifications regarding 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 with control over what alerts they receive and trigger, about whom, and in what circumstances. Williams-Decl., [0387]. 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., [0388].

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," and 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., [0389].

Bechtolsheim: POSAs would have recognized Bechtolsheim's techniques discussed *supra* §VII.C, §VII.E as the type of "GPS tracking in cars" techniques that Randall's "Route finder" is "similar to" (Randall, p. 29). Williams-Decl., [0390]. 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/without Froeberg), with another user’s location as the destination (as discussed *supra* §VIII.B.1.f ([1F])). Williams-Decl., [0390].

C. Mapping to Challenged Claims

1. Claim 6

Claim 6 is obvious over Randall-De-Vries/Randall-Froeberg-De-Vries.

In Randall’s “Old buddy finder,” Alice’s “device *alerts* [Alice] when a contact happens to be within a defined proximity (e.g. Bob and Alice are both in the same foreign city...).” Randall, p. 24. This *alert regarding* Bob is *based on* Bob’s device’s *location* being near Alice’s location. Williams-Decl., [0391]-[0392].

De-Vries concerns the same type of proximity-based *alerts* as Randall. De-Vries, Abstract (“notifications to inform when certain people...are nearby”), 2:18-35, 4:39-44, 4:60-65, 5:20-62 (wireless-device GPS locations “stored in the people/place database” on the server to “provide *alerts*” to other users’ devices); Williams-Decl., [0393]. De-Vries teaches to implement such alerts by the “server send[ing] a notification” to the *wireless telephone*, which thus *receives the alert*. De-Vries, 8:1-3, 8:31-40, FIG. 1; Williams-Decl., [0393]-[0394].

2. Claims 7, 80

Claims 7 and 80 are obvious over Randall-De-Vries/Randall-Froeberg-De-Vries.

De-Vries teaches that “[t]he information service” (Randall-De-Vries’s/Randall-Froeberg-De-Vries’s *remote server*) “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 *requesting said remote server to provide said alert and setting location alerts associated with said second wireless device* (of person B). Williams-Decl., [0395]-[0396].

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* §§IX.A-IX.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 to be *requesting said remote server to provide said alert* when the parameters are met and *setting location alerts associated with said second wireless device* (of another user). Williams-Decl., [0397]-[0399].

3. Claims 8, 82

Claims 8 and 82 are obvious over Randall-De-Vries/Randall-Froeberg-De-Vries. Randall teaches that *said alert* can be *geographic area-based*—e.g.,

indicating that the other user's location is within a city (which is a geographic area and a geographic region). Randall, p. 24 (“Old buddy finder” alerts user when “Bob and Alice are both in the same foreign city”); Williams-Decl., [0400]-[0401]. De-Vries also teaches *geographic area-based alerts*, and that the *wireless telephone* user can *specify said 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., [0402]-[0404].

4. Claims 9, 87

Claims 9 and 87 are obvious over Randall-Degnbol/Randall-Froeberg/Degnbol. Based on Degnbol’s teachings discussed *supra* §VII.F.4, it would have been obvious to *receive an alert* at Alice’s *wireless telephone* when “[s]he has been the subject of an alert to another user” by which that user *locates* her *wireless telephone* as being nearby. Degnbol, 21:4-6, 18:27-31; Williams-Decl., [0405]-[0407]. It would alternatively have been obvious to *receive an alert* whenever another user requests Alice’s location, as this was a known useful option. Williams-Decl., [0408]-[0410] (citing corroborating EX1071 (“Rice”), 9:26-51, 7:40-49, 12:20-33); *supra* §VII.F.4.

5. Claims 10, 88

Claims 10 and 88 are obvious over Randall-Degnbol/Randall-Froeberg-Degnbol. Randall teaches that its “wireless information device[s]” can be “any kind of device with one or two way wireless information capabilities,” and teaches *receiving and displaying a location of* a wireless information device as discussed *supra* §VIII.B.11 ([claim 75]), §VIII.B.14 ([claim 79]). Randall, [0002], [0021]; Williams-Decl., [0411]-[0413]. As discussed *supra* §VII.F.5, 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., [0414]. POSAs would have understood Degnbol’s “wristwatches” to be suitable wireless information devices in Randall/Randall-Froeberg; thus, it would have been obvious to *receive and display the location of a watch*. Williams-Decl., [0414]-[0415].

6. Claims 13, 91

Claims 13 and 91 are obvious over Randall-Bechtolsheim/Randall-Froeberg-Bechtolsheim, based on Bechtolsheim’s teachings discussed *supra* §VII.F.7. Williams-Decl., [0416]-[0420].

7. Claim 78

Claim 78 is obvious over Randall-De-Vries/Randall-Froeberg-De-Vries, which incorporates Randall’s and De-Vries’s teachings to allow the *wireless telephone to receive an alert* when a contact’s *second wireless device is within a*

distance of said wireless telephone. Randall, p. 24 (“Old buddy finder” alerts user “when a contact happens to be ***within a defined proximity***”); De-Vries, 9:5-8 (“proximity parameter can have the form of a geographic ***distance*** threshold, e.g., a radius in miles or kilometers, ***within*** which the people...must be located to be considered in proximity to the user”); Williams-Decl., [0421]-[0422].

X. 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, the scheduled *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.⁷ EX1039. Nevertheless, Petitioners diligently filed this Petition over a month before any statutory bar.

d. Issue Overlap

This Petition challenges 34 claims, whereas Mullen must elect “no more than 5” to assert. EX1039 at 4. This weighs against denial. *Markforged Inc. v. Continuous Composites*, IPR2022-00679, Paper 7 at 32-33 (Oct. 25, 2022).

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.

⁷ Mullen filed an amended complaint dropping one patent (25 claims) only a month ago. EX1036 at 10.

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 (internal quotation marks and citations omitted).

This Petition and those concurrently challenging other ’117 patent claims are “the first filed by Petitioner[s] against the” ’117 patent. *Id.* Petitioners have “different allegedly infringing products and in different district court proceedings” than Apple (petitioner in prior IPR2023-00115), have not coordinated with Apple regarding the ’117 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 '117 patent and was not applied in any rejection or considered in combination with Randall. Wollrab, Friedman, Grube, Meadows, Thomas, 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 IPR2023-00115 "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 IPR2023-00115, warrant institution regardless of the status of Sheha-based Grounds 1-3. *Current Lighting Sols., LLC v. Jiaxing Super Lighting Elec. Appliance Co., Ltd.*, IPR2023-00270, Paper 18 at 51 (Aug. 16, 2023).

XI. CONCLUSION

The Board should institute review and cancel claims 1-14 and 73-92.

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 13,992 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.

XII. 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 wireless telephone comprising:
[1A] a processor;
[1B] a positioning system for determining a location of said wireless telephone; and
[1C] memory storing programming capable of:
[1D] providing said location of said wireless telephone to a remote server;
[1E] instructing said remote server to change a list of users on said remote server for a profile associated with said wireless telephone that are allowed to access said location by way of said remote server providing said location from said remote server to at least one of said users of said list of users, wherein each user of said list of users is representative of one of a plurality of wireless telephones; and
[1F] receiving and displaying directional information to one of said plurality of wireless telephones, wherein said directional information is representative of directions between said location and a second location associated with said one of said plurality of wireless telephones.
Claim 2
The wireless telephone of claim 1, wherein said programming capable of instructing said remote server to change a list of users comprises programming capable of instructing said remote server to add an additional user to said list of users.
Claim 3
The wireless telephone of claim 1, wherein said programming is further capable of displaying the name of said second location.

Claim 4

The wireless telephone of claim 1, wherein said programming is further capable of displaying the distance between said first wireless telephone and said one of said plurality of wireless telephones.

Claim 5

The wireless telephone of claim 1, wherein said programming is further capable of instructing said remote server to allow at least one of said users to access said location of said wireless telephone for only a specific period of time.

Claim 6

The wireless telephone of claim 1, wherein said programming is further capable of receiving an alert regarding a user of said list of users based on a location of a wireless telephone associated with said user.

Claim 7

The wireless telephone of claim 6, wherein said programming is further capable of requesting said remote server to provide said alert.

Claim 8

The wireless telephone of claim 7, wherein said alert is geographic area-based, said programming is further capable of specifying said geographic area, and said alert indicates that said location of said wireless telephone associated with said user of said list of users is within said geographic area.

Claim 9

The wireless telephone of claim 1, wherein said programming is further capable of receiving an alert when a user of said list of users locates said wireless telephone.

Claim 10

The wireless telephone of claim 1, wherein said programming is further capable of receiving and displaying a location of a watch.

Claim 11

The wireless telephone of claim 1, wherein said programming is further capable of receiving and displaying a location of a radio.

Claim 12

The wireless telephone of claim 1, wherein said programming is further capable of receiving and displaying a location of a car.

Claim 13

The wireless telephone of claim 1, wherein said programming is further capable of receiving and displaying information indicating time to reach said second location from said location according to at least two types of travel selected from the types of travel consisting of subway, walking, running, and driving.

Claim 14

The wireless telephone of claim 1, wherein said programming is further capable of downloading from a remote system associated with said remote server a phone book corresponding to a user of said wireless telephone.

Claim 73

[73PRE] A wireless telephone comprising:

[73A] a processor;

[73B] a positioning system for determining a location of said wireless telephone; and

[73C] memory storing programming capable of:

[73D] providing said location to a remote system,

[73E] wherein said location is operable of being requested by a second wireless device outside of a call for communication between said wireless telephone and said second wireless device;

[73F] providing a permission for said second wireless device to access location information about said location,

[73G] said permission operable of being stored in said remote system, wherein said remote system is located remotely from said wireless telephone and said second wireless device,

[73H] said location information about said location is operable of being provided from said remote system to said second wireless device in accordance with said permission outside of said call,

[73I] wherein said programming of said wireless telephone is further operable of providing a first map provided with respect to said location.

Claim 74

The wireless telephone of claim 73, wherein said second wireless device comprises a wireless telephone.

Claim 75

The wireless telephone of claim 73, wherein said programming is further capable of displaying a map with a location marker associated with a location of said second wireless device.

Claim 76

The wireless telephone of claim 73, wherein said programming is further capable of removing said permission, by said wireless telephone, for said second wireless device to obtain said location.

Claim 77

The wireless telephone of claim 73, wherein said positioning system is operable to receive signals from a plurality of positioning satellites, and said location is operable to be updated by said positioning system, and said programming is further capable of providing said updated location to said remote system.

Claim 78

The wireless telephone of claim 73, wherein said programming is further capable of receiving an alert when said second wireless device is within a distance of said wireless telephone.

Claim 79

The wireless telephone of claim 73, wherein said programming is further capable of displaying said location of said wireless telephone relative to a second location of said second wireless device.

Claim 80

The wireless telephone of claim 73, wherein said programming is further capable of setting location alerts associated with said second wireless device.

Claim 81

The wireless telephone of claim 73, wherein said programming is further capable of assigning said permission for a specific period of time.

Claim 82

The wireless telephone of claim 73, wherein said programming is further capable of being alerted when said second wireless device enters a geographic region.

Claim 83

The wireless telephone of claim 73, wherein said programming is further capable of displaying said first map from a perspective of said first wireless device, said

map identifying said location of said wireless telephone and a location of said second wireless device.

Claim 84

The wireless telephone of claim 1, wherein said programming is further capable of instructing said remote server to allow at least one of said users to access said location of said wireless telephone for an indefinite period of time.

Claim 85

The wireless telephone of claim 73, wherein said programming is further capable of instructing said remote server to allow a user of said second wireless device to access said location of said wireless telephone for an indefinite period of time.

Claim 86

The wireless telephone of claim 73, wherein said programming is further capable of instructing said remote server to allow a user of said second wireless device to access said location of said wireless telephone for only a specific period of time.

Claim 87

The wireless telephone of claim 73, wherein said programming is further capable of receiving an alert when a user of said second wireless device locates said wireless telephone.

Claim 88

The wireless telephone of claim 73, wherein said programming is further capable of receiving and displaying a location of a watch.

Claim 89

The wireless telephone of claim 73, wherein said programming is further capable of receiving and displaying a location of a radio.

Claim 90

The wireless telephone of claim 73, wherein said programming is further capable of receiving and displaying a location of a car.

Claim 91

The wireless telephone of claim 73, wherein said programming is further capable of receiving and displaying information indicating time to reach a location of said second wireless device from said location of said wireless telephone according to at least two types of travel selected from the types of travel consisting of subway, walking, running, and driving.

Claim 92

The wireless telephone of claim 73, wherein said programming is further capable of downloading from said remote system a phone book corresponding to a user of said wireless telephone.