

Paper No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

MULLEN INDUSTRIES LLC
Patent Owner.

Case No. IPR2025-00369
Patent No. 11,246,024

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

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REGULATIONS

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OTHER AUTHORITIES

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APPENDIX LISTING OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 11,246,024 (“the ’024 patent”)
1002	Prosecution History of U.S. Patent No. 11,246,024
1003	Declaration of David H. Williams (“Williams-Decl.”)
1004	Curriculum Vitae of David H. Williams
1005	U.S. Patent No. 7,333,820 (“Sheha”)
1006	U.S. Provisional Patent Application No. 60/305,975 (“Sheha-Prov.”)
1007	U.S. Patent Application Publication No. 2004/0024846 (“Randall”)
1008	International Patent Application Publication No. WO 02/17075 (“Randall-WIPO”)
1009	U.S. Patent No. 7,233,795 (“Ryden”)
1010	U.S. Provisional Patent Application No. 60/277,117 (“Ryden-Prov”)
1011	RESERVED
1012	U.S. Patent No. 7,013,148 (“Ganesh”)
1013	U.S. Patent No. 6,968,179 (“De-Vries”)
1014	U.S. Patent No. 6,920,328 (“Wollrab”)
1015	U.S. Patent No. 6,714,791 (“Friedman”)
1016	RESERVED
1017	RESERVED
1018	U.S. Patent No. 6,716,101 (“Meadows”)
1019	U.S. Patent No. 7,366,522 (“Thomas”)
1020	RESERVED
1021	RESERVED
1022	International Patent Application Publication No. WO 01/91486 (“Darling”)
1023	U.S. Patent No. 6,084,951 (“Smith”)
1024	RESERVED
1025	U.S. Patent No. 6,415,224 (“Wako”)

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

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	RESERVED
1060	RESERVED
1061	RESERVED
1062	RESERVED
1063	RESERVED
1064	RESERVED
1065	RESERVED
1066	RESERVED
1067	U.S. Patent No. 6,127,945 (“Mura-Smith”)
1068	RESERVED
1069	U.S. Patent No. 7,143,443 (“Song”)
1070	U.S. Patent No. 6,107,944 (“Behr”)
1071	U.S. Patent No. 7,203,752 (“Rice”)
1072	RESERVED
1073	U.S. Patent No. 6,154,745 (“Kari”)

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

MANDATORY NOTICES

A. Real Party-In-Interest

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

B. Related Matters

1. United States Patent & Trademark Office

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

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

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

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

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

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

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

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

2. USPTO Patent Trial and Appeal Board

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

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

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

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

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

- IPR2025-00365, IPR2025-00366, and IPR2025-00367 challenging U.S. Patent No. 11,234,117
- IPR2025-00368 challenging U.S. Patent No. 11,246,024

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

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

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

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

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

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

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

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

Petitioners request *inter partes* review and cancellation of claims 45-78 of the '024 patent (EX1001).

I. INTRODUCTION

The '024 patent is one of seven related patents that Patent Owner (“Mullen”) accuses Petitioners’ products of infringing. Previously, Mullen asserted these patents against Apple Inc., and Apple filed IPRs, most of which were instituted and then terminated due to settlement during trial. Apple’s IPR2023-00149 challenging claims 45-78 of the '024 patent was not instituted.

This Petition presents two sets of grounds against claims 45-78. One is a new set of grounds based on Randall, which have not previously been before the Board. The other set of grounds is based on Sheha, which was a primary reference in Apple’s IPR2023-00149. This Petition presents Sheha in combination with Darling and Futagami, which teach the features the Board found missing in IPR2023-00149’s Sheha-based grounds. Declaration of David H. Williams (EX1003, “Williams-Decl.”), [0094].

II. STANDING

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

III. GROUNDS FOR UNPATENTABILITY

Claims 45-78 are unpatentable under pre-AIA 35 U.S.C. §103 according to the following grounds (independent claim is indicated in **bold**):

Ground Number and Reference(s)		Claims
1	Randall (EX1007-EX1008), Darling (EX1022), Futagami (EX1030)	45 , 46-47, 53-55, 58-59, 61-63, 70, 73-75, 78
2	Randall, Darling, Futagami, De-Vries (EX1013), Froeberg (EX1051), Bechtolsheim (EX1075), Degnbol (EX1035), Wollrab (EX1014), Obradovich (EX1043)	48-52, 56-57, 60, 64-69, 71-72, 76-77
3	Sheha (EX1005), Darling, Futagami	45 , 46-47, 53-55, 58-59, 61-63, 73, 75
4	Sheha, Darling, Futagami, De-Vries, Froeberg, Bechtolsheim, Degnbol, Wollrab, Obradovich, Boling (EX1074), Smith (EX1023)	48-52, 56-57, 60, 64-72, 74, 76-78

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

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

IV. THE '024 PATENT

A. Specification Embodiments

Generally, the '024 patent discusses sharing a wireless device's location (GPS) with others via a remote system. EX1001, 1:18-28, 5:7-29. Williams-Decl., [0055]-[0063].

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

A POSA would have had a bachelor's degree in computer science, computer engineering, electrical engineering, or a similar degree, with one or two years of experience with wireless networks and devices, such as cellphones and personal digital assistants ("PDAs"), as well as wireless positioning technologies, such as GPS or triangulation. More education could compensate for less practical experience, and vice versa. Williams-Decl., [0051]-[0054].

C. Prosecution History

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

D. Challenged Claims

Independent claim 45 is a "system" claim that adapts recitations from method claim 1 of related U.S. Patent No. 9,635,540. Claim 45 is challenged below under similar grounds as in Petitioners' IPR2025-00227 challenging U.S. Patent No. 9,635,540.

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: RANDALL+DARLING+FUTAGAMI

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 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., [0074]-[0076] (mapping paragraph numbers of EX1007 to page numbers of EX1008).

Randall relates to “enabling a wireless information device to access data services,” using “an extensible framework...shared by each of the applications.” Randall, [0002], [0006]. The wireless devices can be “radio telephones, smart phones,” etc., which “can access information on” “internet servers hosting extensible databases.” Randall, [0002], [0029]. Examples of applications on a wireless device that can all access the same server-based database framework and

coordinate to provide services include “a directory application (which contains a user’s contacts list...)” and “a location application (which gives a user’s location and includes digital maps).” Randall, [0009], [0012], [0025], [0028] (“applications...share information”), [0080]-[0081], [0085]-[0115]; Williams-Decl., [0095]-[0100].

“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., [0101].

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., [0102]-[0103]. 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. Darling (EX1022)

Darling relates to “[m]obile telephones,” and “enabl[ing] a user to determine the location of another user.” Darling, 1:26, 9:11-16, 2:10-12. Each phone’s GPS position is provided to a server. Darling, 2:1-8, 2:47-50. “Each user may specify that location information is available only to specified users or groups,” and “the server stores” this “permission information.” Darling, 2:1-8, 2:47-3:5, 22:23-40, 33:15-32, 41:21-42:2. When a second user requests a first user’s location, the server “check[s] the permission information prior to...transmitting” the location. Darling, 2:6-8, 3:1-3. “If the second user is not permitted to know the location of the first user, the information is not transmitted.” Darling, 3:8-9. “In addition or instead of a first user granting permission to a second user, the second user may request permission to have access to...the first user’s...location information.” Darling, 3:15-18. “A request for permission may be communicated to the first user, preferably as a question, who may respond, preferably with a simple yes/no command.” Darling, 3:18-19. Williams-Decl., [0104].

C. Futagami (EX1030)

Futagami describes techniques to “control access to personal information of a user...of a portable telephone device.” Futagami, Abstract. “A management server stores [the] personal information,” and “if a user...transmits a request...to the management server to transmit personal information of [another] user..., the management server determines” whether the requesting user has permission. Futagami, Abstract, 14:50-15:12. If the server determines that the requesting user “is not permitted to access” the requested information, the server “transmit[s] a message” informing the requesting user. Futagami, 15:40-53. In response to this “refusal message, if the user still wants to access the [requested] personal information,” the user can “request...to change the access restriction.” Futagami, 15:54-62. The server then “inquires of the [other] user...whether to give permission,” and “[i]f permission is given, the management server provides the personal information” to the requesting user. Futagami, Abstract, 16:7-32. Williams-Decl., [0105].

D. Randall-Darling-Futagami Combination

Randall, Darling, and Futagami describe highly overlapping techniques and use cases. Williams-Decl., [0106].

All three describe a system where a server stores personal information of client users of wireless devices. Randall, [0502]-[0505], Table 1 (“Alice’s iData”

stored on i-server, including “name,” “E-mail,” “Mobile Phone” number, “Home Address,” etc.); Darling, 3:1-8 (server has “information stored for each user”), 21:19-22:17 (“Personal Profile” including “name,” “Mobile Phone Number,” “Personal Email Address,” “Date of Birth,” “Address,” etc.); Futagami, 4:7-12 (“server...manages personal information of all users” including “portable telephone device 5,...for example, names, telephone numbers, addresses, dates of birth, and electronic mail addresses”); Williams-Decl., [0107]-[0109].

All three references describe similar access control techniques, where each user specifies which other individual users or groups of users have access rights to specific items of the user’s personal information. Randall, [0131]-[0136] (“data provided by or on behalf of the user will have varying levels of visibility assigned to it” that users “define...for themselves,” including “[v]isible to specific people (or groups)”), [0509] (“sensitive information is only available to people in certain i-Groups; allowing Alice to control what data they see”); Darling, 3:3-5 (“Each user may specify that location information is available only to specified users or groups”), 22:37-23:13 (“People who have access to My Personal Details”), 33:16-34:3 (“People who have access to My Location Details”); Futagami, 13:33-67 (“for each user, the access restriction information may specify personal information which is not permitted to be accessed by the user”), 14:1-44 (“user B is permitted

to access data A and data C; user C is permitted to access data C and data D;” etc.), FIGs. 15-16; Williams-Decl., [0110]-[0113].

In all three references, when a second user requests an item of a first user’s personal information, the server determines whether the second user has access rights from the first user to that information, and only transmits the information to the second user if the second user has such access rights. Randall, [0067]; Darling, 3:1-9; Futagami, 14:44-15:53, 18:26-19:27; Williams-Decl., [0114]-[0117].

Therefore, a POSA implementing Randall’s system would have been motivated to incorporate teachings and techniques from Darling and Futagami and would have reasonably expected success given the many similarities among the described systems. Williams-Decl., [0118], [0065]-[0073]. For example, POSAs would have been motivated to supplement Randall’s access control techniques for personal information requests (including location requests) with aspects of both Darling’s and Futagami’s access control techniques, given that all three references discuss overlapping, complementary, and beneficial techniques for controlling access to personal information, and both Randall and Darling teach that such personal information can include location information. Randall, [0505] Table 1 (Alice’s iData including “Bluetooth location” and “GPS location”); Darling, 3:1-8 (applying “[s]imilar permissions” to “location information” and “other information stored for each user”), 21:19-23:13 (“Personal Profile” with access rights options),

32:39-34:3 (“Location Profile” with same access rights options); Williams-Decl., [0118].

For example, Darling demonstrates that it was known to “request permission” for a “second user” to access a “first user’s...location information” if the second user does not already have permission. Darling, 3:15-19; Williams-Decl., [0119]. Darling further teaches that “[s]imilar permissions” as are applied to location information “may be associated with other information stored for each user” (Darling, 3:1-8), and Darling teaches to apply the same techniques for “Requests for Access to this profile” to providing “access to My Location Details” as to providing “access to My Personal Details” (Darling, 22:21-23:13, 33:14-34:3). Williams-Decl., [0119]. This would have reinforced POSAs’ motivation and reasonable expectation of success to apply to location requests in Randall’s system any of Darling’s and/or Futagami’s techniques for controlling access to personal information. Williams-Decl., [0119].

As a specific example, for the above reasons, POSAs would have been motivated and reasonably expected success to apply, to location requests in Randall’s system, Futagami’s teachings for how to proceed when the requesting user does not already have access to the requested information, including providing the requesting user the option to request that the server request access from the target user (or not). Futagami, 15:40-16:32, 18:62-20:67, FIGs. 19-20; Williams-

Decl., [0120]. POSAs would have understood Futagami’s technique to be desirable, e.g., because it allows the requesting user to choose whether it makes sense to disturb the other user at that particular time with a request to obtain location access rights. Williams-Decl., [0120].

E. Mapping to Challenged Claims²

1. Claim 45: [45PRE]

Randall’s “**system**” allows “wireless applications to access and share information.” Randall, [0028], [0052]-[0053], [0071];³ Williams-Decl., [0121]-[0122].

a. [45A]

Randall’s system includes an “internet **server**[.]” (“**i-server**”)—a “**server** on the Internet”—which POSAs would have known teaches a *remote system comprising a server*. Randall, [0029], [0046], [0503], [0053], [0030] (“**remote**, extensible database”), FIG. 4 (showing the system’s servers located remotely from the wireless devices); Williams-Decl., [0123].

Randall’s i-server communicates with “**wireless** information device[s],” which can be “radio telephones, smart phones,” etc. Randall, [0002]. These *wireless devices* “**communicate...over**” a “**network**, such as GSM or UMTS,

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

³ Emphases are added unless otherwise indicated.

CDMA and WCDMA” (i.e., *communications network*) to “access information on the[] databases” hosted on the “internet servers.” Randall, [0002], [0029], [0046], [0049], [0067] (“server passes...information” to “Bob’s device”), [0105], [0509], p. 24 (“People tracking”). Thus, the *remote system is capable of communicating data with the wireless devices over a communications network*. Williams-Decl., [0124].

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., [0125]. Alice’s device is an exemplary *first wireless device* and Bob’s is an exemplary *second wireless device* (and vice versa, because POSAs would have understood that Randall presents Alice and Bob as arbitrary examples illustrating functionality that is equally available to any wireless information device in Randall’s system). Williams-Decl., [0125]-[0127].

b. [45B]

“[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]. “That location data can be obtained via a GPS wireless information device, which transmits location information 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”).

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

Randall, [0503]-[0512], [0116]-[0136] (“Identity” used for sharing “*Location* information”); Williams-Decl., [0128]-[0129].

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

Randall teaches that Bob's *second wireless device* can *request* Alice's data from the i-server (which includes the *location of her first wireless device* as discussed above) "by sending to the server an unchanging pointer or key (an 'ADS

Number') which is unique to" Alice. Randall, [0049]; Williams-Decl., [0130]. 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., [0130]. If Alice has given Bob the appropriate permissions, "the server passes to Bob's device the information it *requests*." Randall, [0049], [0067], [0512]; Williams-Decl., [0130]. 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., [0130].

Randall thus discloses [45B]. Additionally, Darling reinforces Randall's teaching to meet [45B]. Darling, 2:1-15 ("*receiving at the server a request* from a *second* user querying where the *first* user is *located*," as "communicated by means of mobile devices"), 34:22-35:22, 89:23-30; Williams-Decl., [0131]-[0133].

c. [45C]

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* §VI.E.1.b ([45B]) and shown in Table 1, one of the fields in Alice's database is her

device’s “GPS *location*,” and she can designate that field as only being accessible to users whom she designates as part of a particular “i-Group” (e.g., “partner”). Randall, [0503]-[0512]; Williams-Decl., [0134]. “[S]ensitive information is only available to people in certain i-Groups; allowing Alice to control what data they see.” Randall, [0509], [0136] (“Location information” is “[v]isible to specific people (or groups)”). Thus, if Alice has not designated Bob as being in an i-Group that she has designated as having access to her location, then the server *determines that Bob’s second wireless device does not have location access rights for Alice’s first wireless device*. Williams-Decl., [0134].

“When one of the people in [Alice’s contacts] list” (e.g., Bob) “looks at Alice’s ADS Number, (using an application on their...wireless information devices), they see a view onto Alice’s personal data that is defined by Alice. For example, someone in the business 1 group might see the Table 3 information.” Randall, [0512], Table 3:

TABLE 3

Name	Ms Alice Edwards
Title	European Marketing Manager
Company	Wireless Information Device gets R Us
ADS Number	urls.co.uk/1238947532345235
Last verified	7 th July 2000
e-mail	alice.edwards@Wireless Information Device getsrus.com
Work phone 1	0207 200 2000
Work phone 2	0207 200 2012
Mobile	0840 1234 567
Address	1 The Science Park, London, N1 9PQ
Other info	Met her at meeting with Tom Jones, August 2000.

Comparing Table 3 with Table 1 demonstrates that, in this example, if Bob is in Alice’s “business 1” i-Group, the server *determines that Bob’s second wireless device does not have location access rights for Alice’s first wireless device*, and therefore provides Bob only the subset of Alice’s i-Data that is in Table 3, which does not include Alice’s “GPS location” designated as accessible to the “partner” i-Group in Table 1 (excerpt highlighted below). Williams-Decl., [0135]-[0136].

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
[....]			
GPS	location	London W1, Seymour St.	partner
Hobby	preferences	Photography, travel	friends
Book	preferences	Maverick	friends
AlbumOfTheWeek	InstaPoll		friends

Randall thus discloses [45C]. Additionally, Darling reinforces Randall’s teaching to meet [45C]. Darling, 3:1-9 (“[T]he server stores...and...check[s] the permission information.... If the second user is not permitted to know the location of the first user, the information is not transmitted.”), 35:24-28; Williams-Decl.,

[0137]-[0138]. Futagami also reinforces this teaching. Futagami, 15:40-53 (“it is ***determined*** in step S62 that” the requesting user “is ***not permitted to access*** the personal information”), FIG. 17 (arrow “N” from S62), FIG. 19 (“(P45) Determination as to allowance of access: not allowed”), FIG. 20 (P55); Williams-Decl., [0139]-[0140].

d. [45D]

Futagami teaches that “if it is determined in step S62 that” the requesting user “is not permitted to access the personal information[,]. . . the process goes to step S63. In step S63” (i.e., *after determining that said second wireless device does not have said location access rights for said first wireless device’s personal information that was requested*), “the server...transmit[s] a message (refusal message) to the client terminal [which has issued the retrieval request].” Futagami, 15:40-53. “When the user reads the refusal message, if the user still wants to access the retrieved personal information, the user transmits a message (restriction removal request message) to the...server...by operating the client terminal [*second wireless device*] to ***request...to change the access restriction information so that the user is allowed to access the personal information.***” Futagami, 15:54-62, 19:15-23, 19:47-59; Williams-Decl., [0141]. This *received request* causes the server to “transmit a message (restriction removal inquiry message) to the client terminal of the user who is the owner of the...personal information” (*the first*

wireless device) “to inquire whether to permit the access restriction information to be changed...such that the requester is permitted to access the personal information.” Futagami, 16:7-21, FIG. 17 (highlighted below); *see also id.*, 17:1-8, 19:27-59, 20:38-43, FIG. 20 (highlighted below); Williams-Decl., [0141]-[0142].

FIG. 17

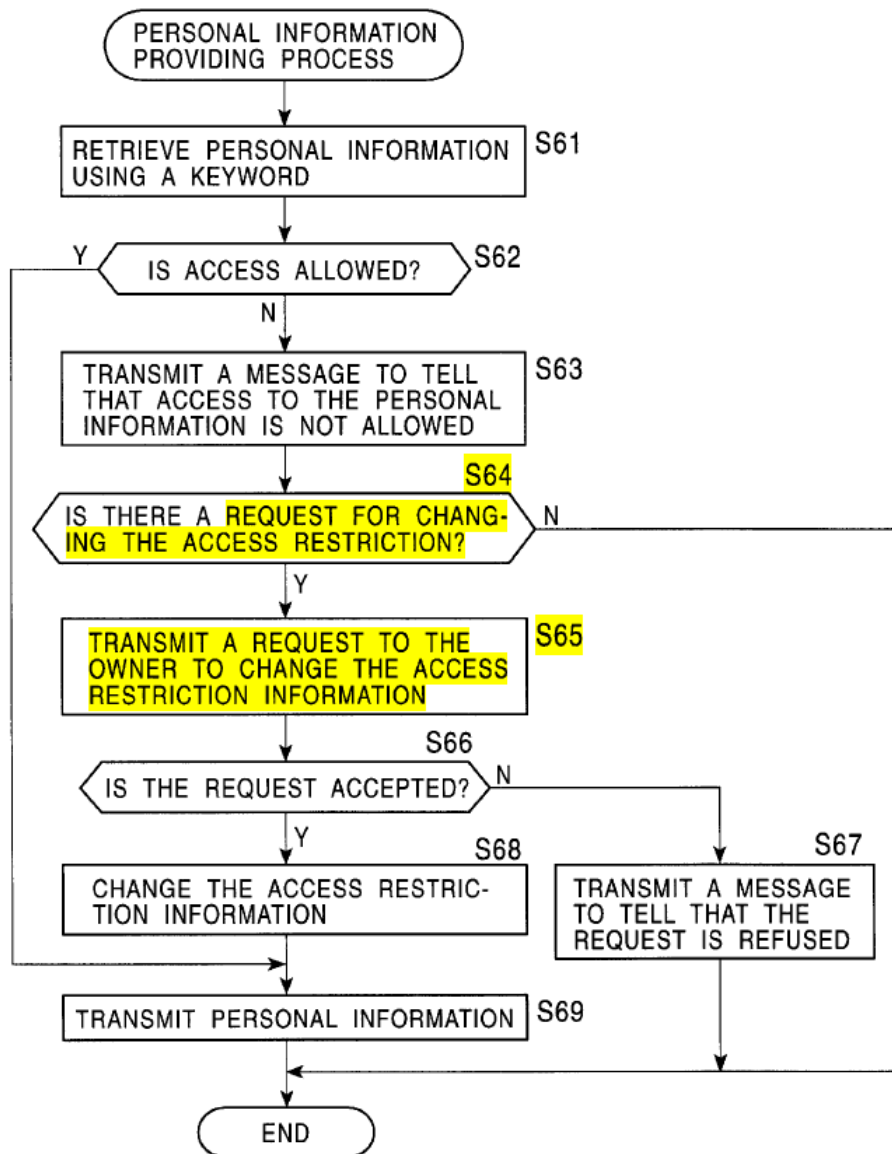
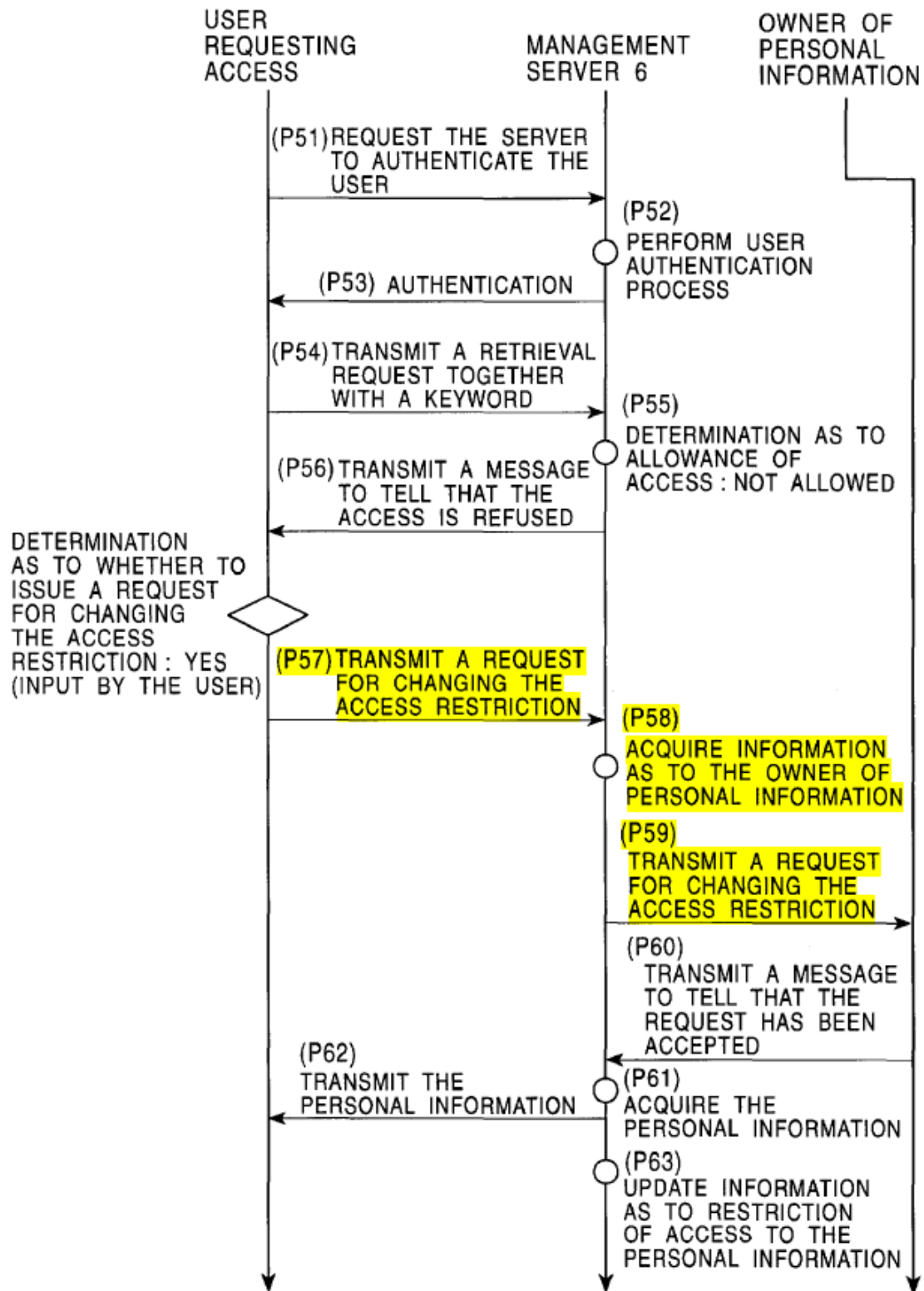


FIG. 20



Thus, Futagami teaches *after determining that said second wireless device does not have access rights for the personal information of said first wireless device, receiving a request from said second wireless device that said location access rights be assigned for said second wireless device by said first wireless device*. Williams-Decl., [0143]. In the combination with Randall and Darling, as discussed *supra* §VI.D, the personal information being requested by Bob is Alice's *first wireless device's* location, and the access rights are *location access rights*, meeting [45D]. Williams-Decl., [0143]. As discussed *supra* §VI.D, POSAs would have been motivated to implement this request capability, to provide a user (Bob) with a way to obtain location access rights from another user (Alice) if he has not already been given them, in a way that allows him to control whether to disturb Alice with an access request. Williams-Decl., [0144]. POSAs would have reasonably expected success based on Futagami's teachings of successfully implementing such functionality in a system like Randall's with a server sharing personal information among wireless device users, as discussed *supra* §VI.D. Williams-Decl., [0144].

Darling further reinforces the obviousness of performing [45D], teaching that when "the second user is not [already] permitted to know the location of the first user," a "request for permission may be communicated to the first user," who

may respond with a “yes/no command.” Darling, 3:1-19; Williams-Decl., [0145]-[0146].

e. [45E]

Randall teaches that “whenever Alice wishes to, she can *change the level of access* of a current contact—perhaps promoting Bob from ‘business’ to ‘friend.’” Randall, [0509]. This is a “method[] of making contacts into members of a particular i-Group,” which Alice can use via her *first wireless device* to provide *an assignment of said location access rights to Bob’s second wireless device*, by assigning Bob to an i-Group that Alice specifies as having access to her location (or Alice can change her location field to be accessible to the i-Group that Bob is already in). Randall, [0509], [0495]; Williams-Decl., [0147]. Randall thus discloses [45E]. Williams-Decl., [0147].

Further, Futagami teaches to prompt the *first wireless device* user to do this in response to a request as in [45D] (*supra* §VI.E.1.d). “When the owner of the personal information reads the restriction removal inquiry message, *if he/she decides to give permission,...he/she transmits a message (restriction removal approval message)...to the management server*” which then “changes the access restriction information” in the server’s database. Futagami, 16:25-58, FIG. 17 (highlighted below); *see also id.*, 17:8-13, 19:60-20:7, FIG. 20 (highlighted below); Darling, 3:18-19 (“A request for permission may be communicated to the

first user, preferably as a question, who may respond, preferably with a simple yes/no command.”); Williams-Decl., [0148].

FIG. 17

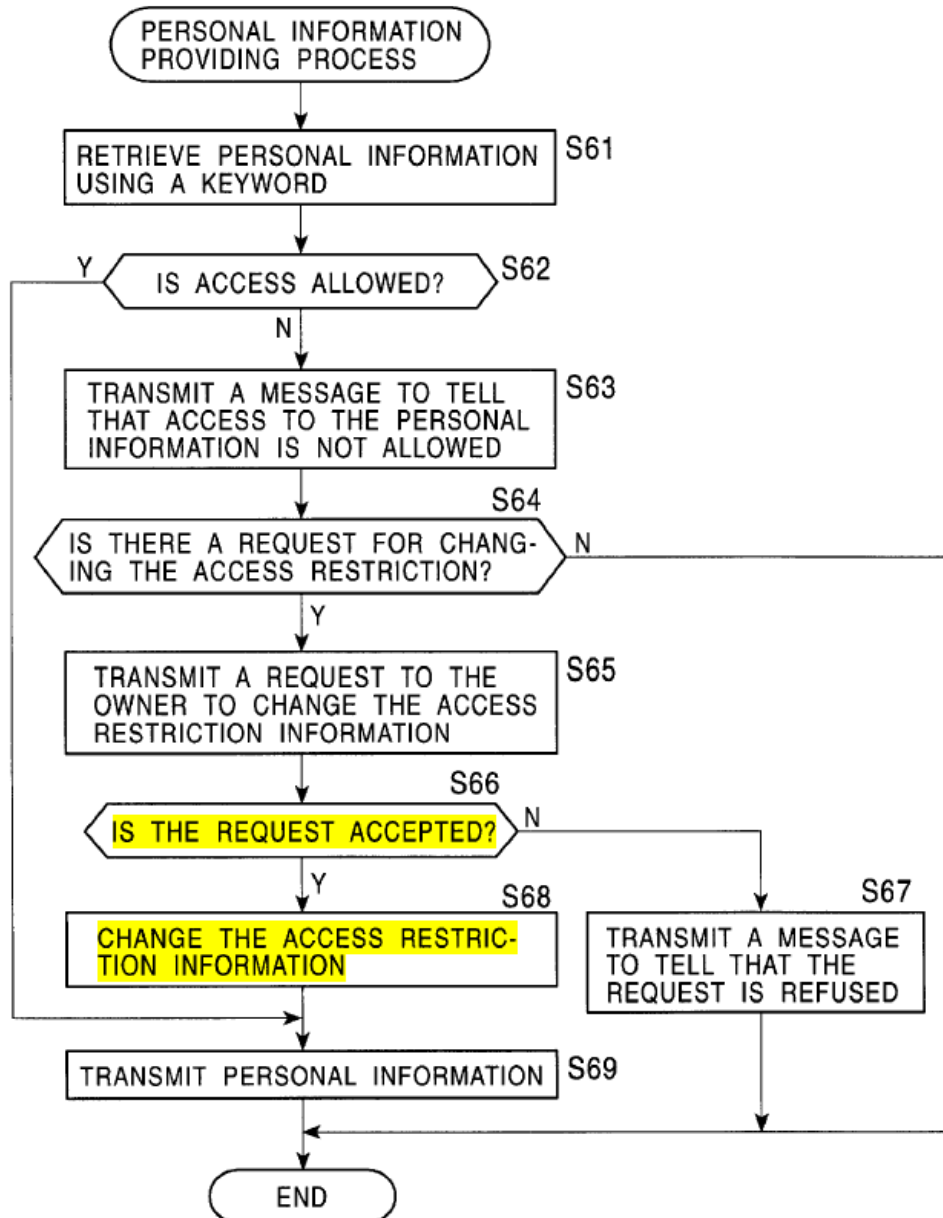
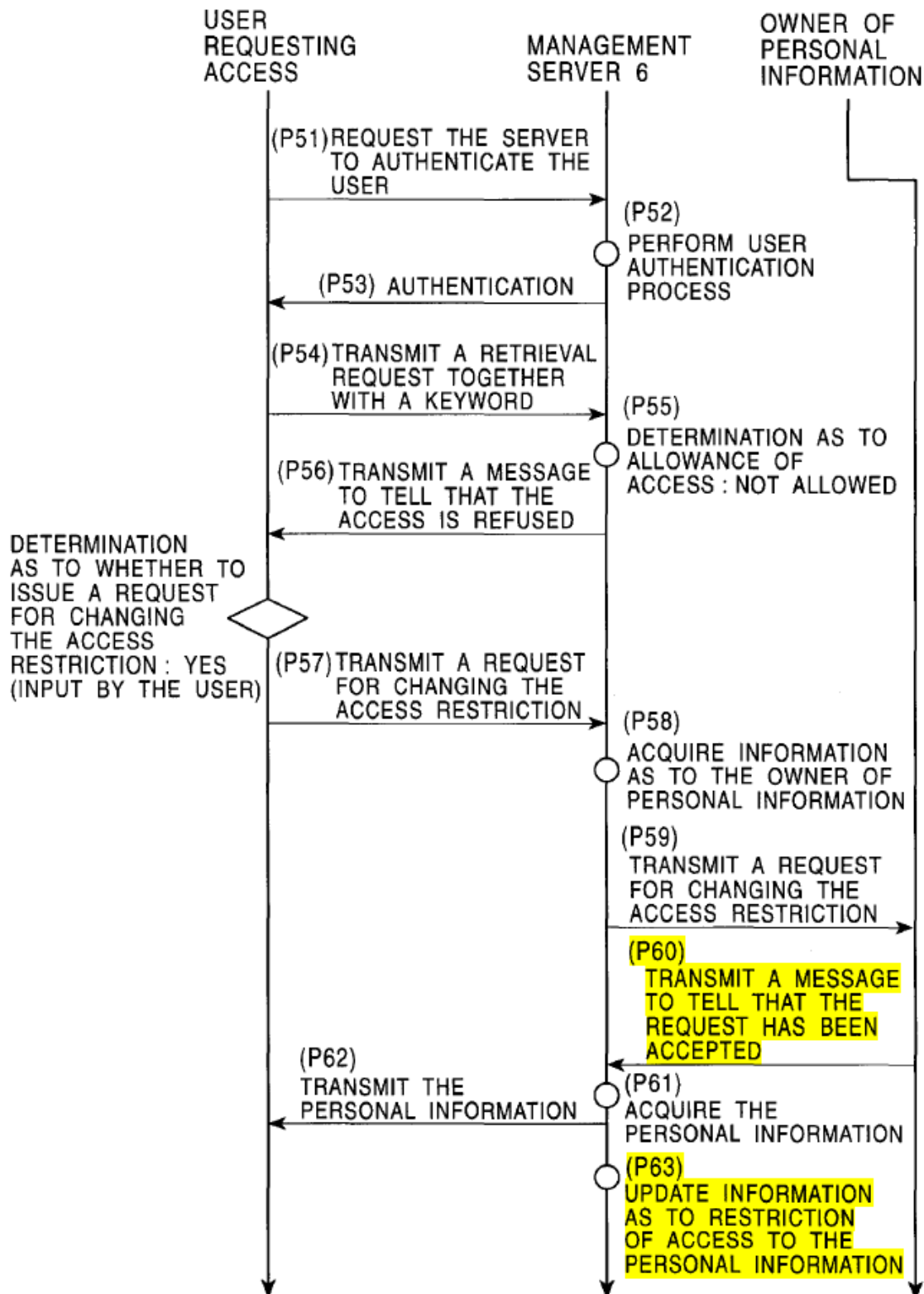


FIG. 20



Darling reinforces this teaching. Darling, 3:18-19 (“A request for permission may be communicated to the first user, preferably as a question, who may respond, preferably with a simple yes/no command.”); Williams-Decl., [0149]-[0150].

f. [45F]

Randall’s “internet servers host[] extensible databases with attributes.” Randall, [0046]. “The database can define which entities can read different fields.” Randall, [0047]. When Alice “specif[ies] the remote database access rights given to different people or groups” including Bob, those *access rights* are “***stored*** as an attribute which gives ***access permissions*** to data in the database.” Randall, [0052]. Thus, the *location access rights* for Bob to access Alice’s location are *stored* by the i-server. Williams-Decl., [0151]; Randall, [0501]-[0512] (Alice’s Table 1 database on i-server assigns different permissions to different i-groups) (discussed *supra* §VI.E.1.c ([45C])).

Randall thus discloses [45F]. Williams-Decl., [0152].

Further, Futagami teaches the server *storing* the *access rights* when the *first wireless device* user assigns them in response to a request as in [45D]-[45E] (*supra* §§VI.E.1.d-VI.E.1.e). Futagami teaches that when “the restriction removal approval message has been received,...the server...***changes the access restriction information*** included in...personal information database 33” on the server (FIG. 9)

such that the requesting user “is permitted to access the personal information of interest.” Futagami, 16:49-58, 19:66-20:7, 20:60-67, FIG. 17 (highlighted below, teaching *access rights* can be *stored* (S68) before transmitting the personal information (S69)), FIG. 20 (highlighted below, teaching *access rights* can be *stored* (P63) after transmitting the personal information (P62)); Williams-Decl., [0153]-[0154].

FIG. 17

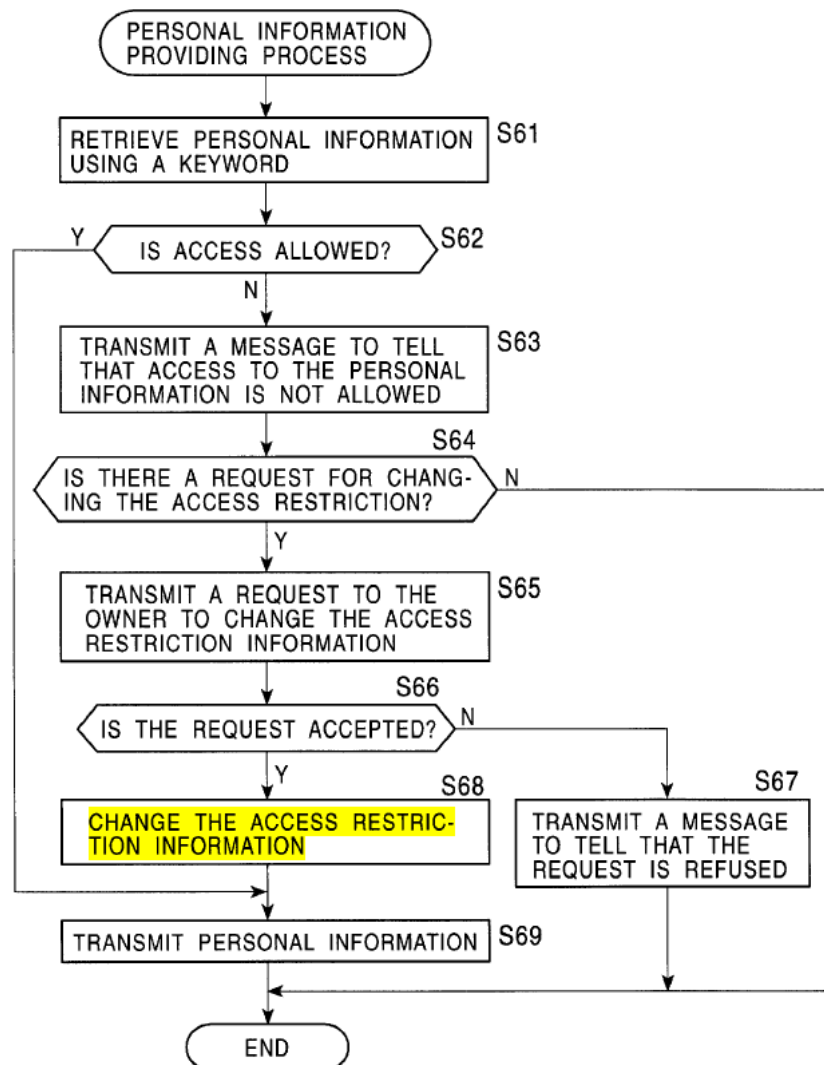
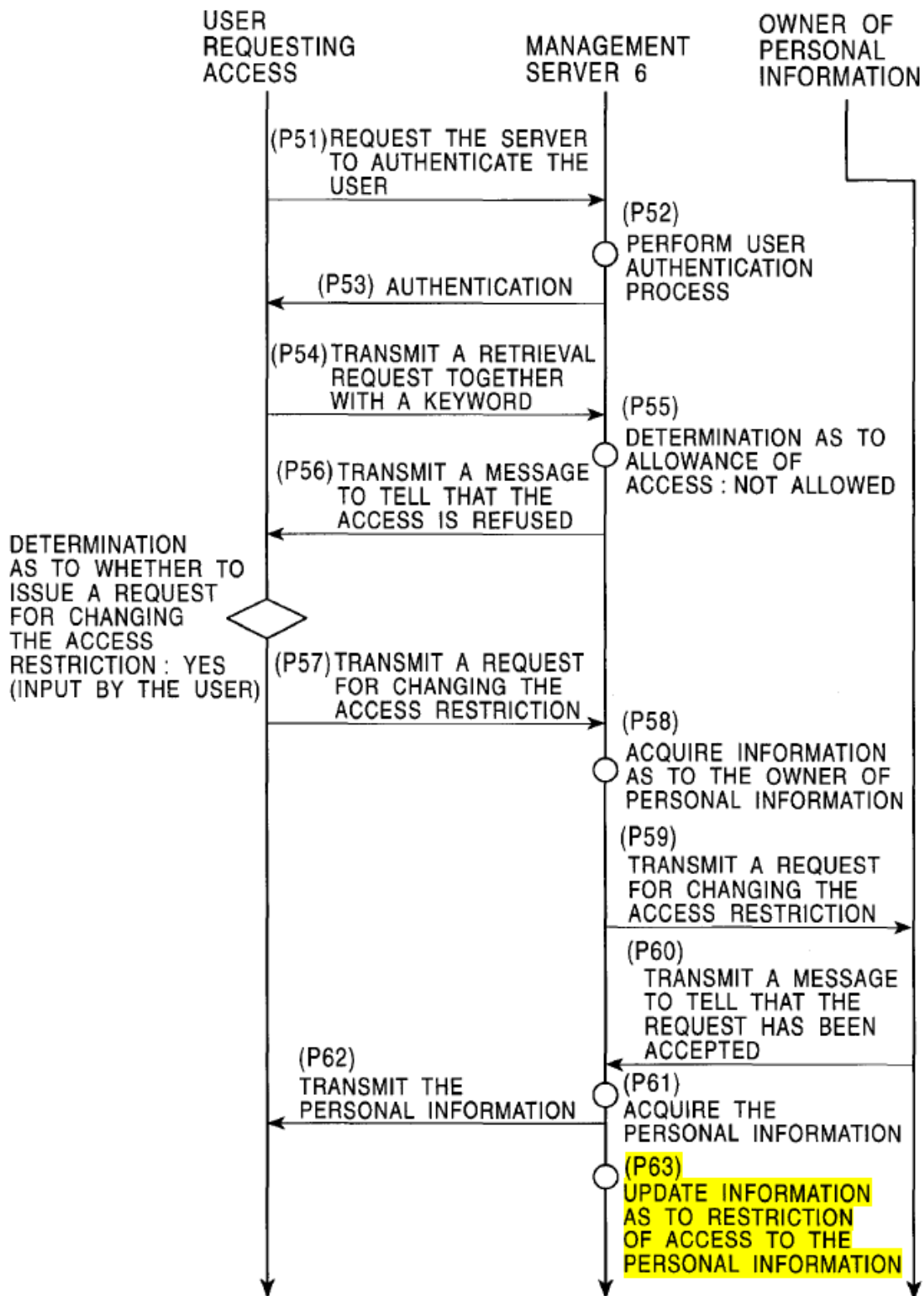


FIG. 20



g. [45G]

Randall's "server recognis[es] Bob's device and determin[es] the database *access rights* which Alice has given him," and then "[o]nce authenticated," (i.e., *dependent upon said location access rights*), "the *server passes to Bob's device* the information it requests," which may be Alice's *location*. Randall, [0067], [0049], [0053], [0509] ("Bob" is Alice's "contact" and has "access" to Alice's "information"), [0512]. 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"). Randall thus discloses [45G]. Williams-Decl., [0155].

Further, Futagami teaches that "if it is determined...that the restriction removal approval message has been received," the server "transmit[s]" "the personal information...to the client terminal which has issued the retrieval request." Futagami, 16:49-61, 17:8-11, 19:66-20:7, FIGs. 17, 20 (highlighted below); Williams-Decl., [0156]. Futagami teaches that the server can *provide* the information to the requesting device before (FIG. 20) or after (FIG. 17) the storing of the access rights (*supra* §VI.E.1.f ([45F])), and Randall teaches updating and storing the access rights before sending the information to Bob's *second wireless device* (*supra* §VI.E.1.c ([45C]), §VI.E.1.e ([45E])). POSAs would have understood that claim elements [45F]-[45G] need not be performed in any

particular order and, regardless, it would have been obvious as a programming design choice to *store location access rights* before *providing Alice's location* to Bob's *second wireless device*. Williams-Decl., [0156]. Because Bob previously did not have *access rights* (*supra* §VI.E.1.c ([45C])), POSAs would have understood that Randall-Darling-Futagami only *provides* Bob the requested *location information dependent upon* on determining that he now has *access rights*. Williams-Decl., [0156]-[0157].

FIG. 17

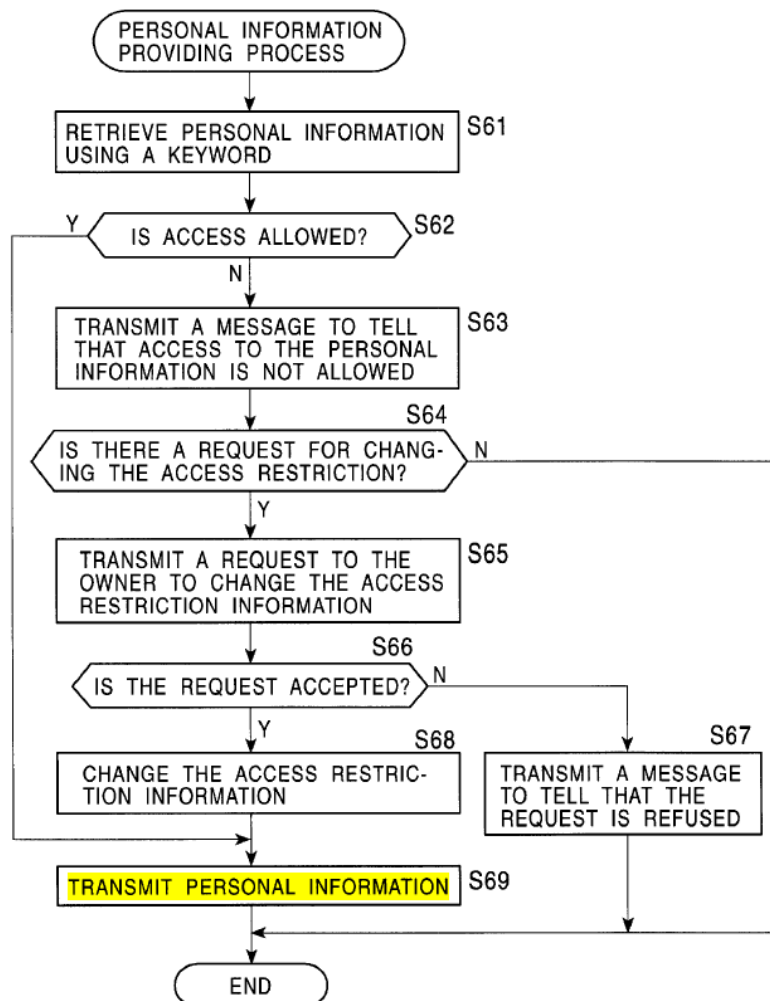
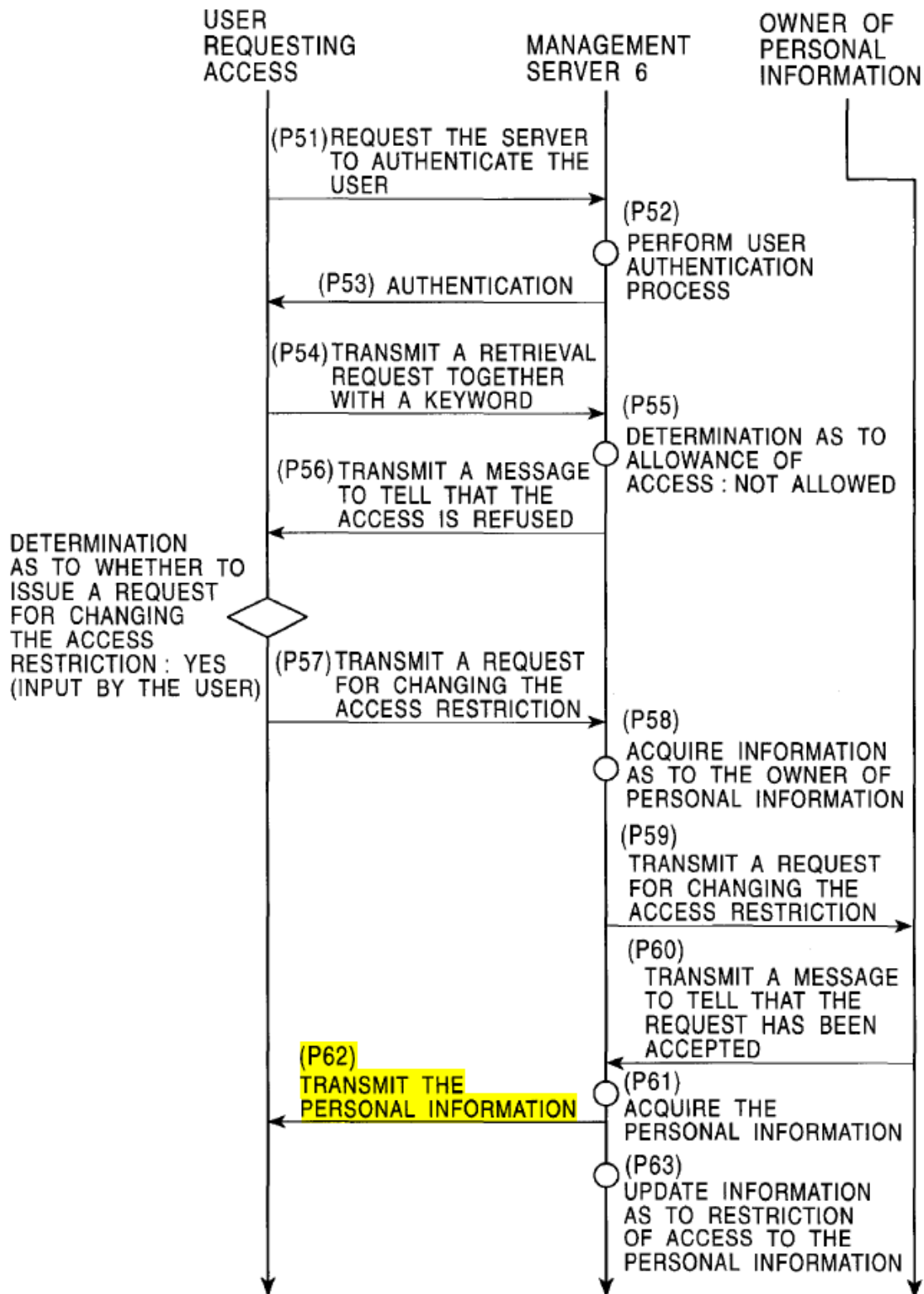


FIG. 20



2. Claim 46

Randall's "wireless information device[s]"—including Alice's and Bob's—can be "radio *telephones*" or "smart *phones*" that communicate over cellular networks ("GSM[,] UMTS, CDMA and WCDMA"). Randall, [0002], [0491] ("Bob's...mobile *phone*"), [0495] ("Alice's *phone*"). POSAs would have understood that these are examples of *cellular phones*. Williams-Decl., [0158]-[0159].

3. Claim 47

As discussed *supra* §VI.E.1 (claim 45), the *location access rights* in Randall's system *include the ability to obtain Alice's location*. Because Bob's *second wireless device* obtains Alice's location from the i-server where it is stored, POSAs would have understood that the i-server can *provide said location* to Bob's *second wireless device even when Alice's first wireless device is OFF* when Bob accesses Alice's last-updated location. Williams-Decl., [0160]. Darling confirms this understanding. Darling, 2:1-12 ("storing" a "first user['s]" "location information" "at a server" and "transmitting" it from the server "to the second user" "enable[s] a user to determine the location of another user...even...when their mobile telephone...is switched *off*"); Williams-Decl., [0160].

Additionally, it was well-known and would have been obvious to provide this functionality by implementing the *first wireless device* to transmit its location

to the server even when it is *OFF*. Williams-Decl., [0160]-[0165] (citing corroborating EX1009 (“Ryden”), 16:53-60; EX1010 (“Ryden-Prov.”), 31:4-8; EX1018 (“Meadows”), 7:20-33).

4. Claim 53

Randall teaches that “an entity seeking information,” such as Bob on his *second wireless device* seeking Alice’s location, must be “[a]uthenticat[ed] (i.e. *identified*)...” by “the server recognising Bob’s device and determining the database access rights which Alice has given him.” Randall, [0067]. The *user* “Bob (as opposed merely to Bob’s device)” may be “authenticated” by submitting “a PIN” or “select[ing] [his] favourite colour/restaurant/recent film etc.[], with the server only authenticating Bob when he answers correctly.” Randall, [0067]. In some examples, this authentication can be “relevant...where Bob borrows someone else’s wireless information device or uses a public device.” Randall, [0067]; Williams-Decl., [0166].

Because Bob can be authenticated as “Bob the person, rather than Bob’s device,” even when using “someone else’s” device or “a public device,” POSAs would have understood that Bob submits a *login* (i.e., an identifier “identifying an entity seeking information” as purporting to be “Bob the person”). Randall, [0067]; Williams-Decl., [0167]. The “PIN” or “select[ed] answer[]” is a *password*

that authenticates that the user is truly Bob. Williams-Decl., [0167]; Randall, [0380] (“[t]he authentication can use...a basic WID and *password*/passphrase”).

Darling and Futagami both reinforce this teaching. Darling, 11:12-20 (“*Login*” with “*Identifier* Field” and “*Password* Field”), 19:11-14; Futagami, 8:62-67 (server “may request presentation of the *user identification* and the *password* of the user of that [requesting] client terminal so as to authenticate the *user*”); Williams-Decl., [0168]-[0169].

5. Claim 54

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.’ *Alice’s device will report this to the server.*” Randall, [0509]. Thus, Randall teaches the i-server *receiving a request from Alice’s first wireless device to modify said location access rights for Bob’s second wireless device; and modifying said location access rights for Bob’s second wireless device based on said request* (e.g., if Alice has set the “friend” i-Group and not the ‘business’ i-Group to have access to her location). Williams-Decl., [0170]. Another way Randall meets claim 54 is by teaching that Alice can “switch location information on for a person” by “select[ing] the person and allow[ing] access.” Randall, [0144]; Williams-Decl., [0171]. Darling also teaches to allow the user to “Add” and “Remove” contacts

from the “List of individuals who have access to the Location Details.” Darling, 33:16-34:3; Williams-Decl., [0172]-[0173].

6. Claim 55

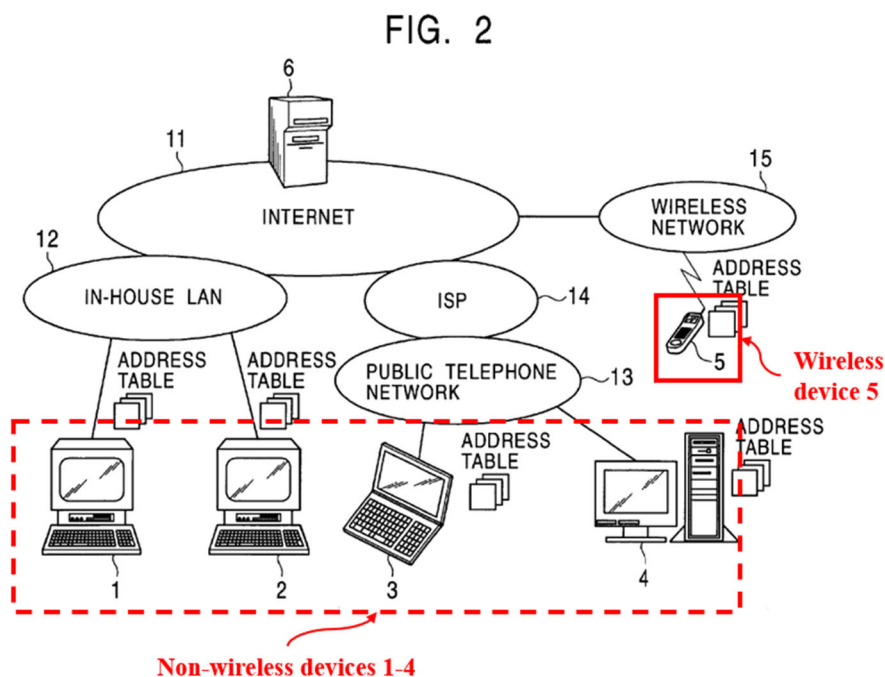
Randall teaches that Alice can “switch location information on for a person” (e.g., for Bob) “for a specific period of time,” and “[a]t the end of the pre-defined period the location information” can “again *become invisible*.” Randall, [0143]-[0144]. Thus, by pre-defining a period of time after which Bob’s access to Alice’s location ends, Alice’s *first wireless device can request to delete said location access rights for Bob’s second wireless device*, and the *remote system deletes said location access rights for Bob’s second wireless device based on said request*. Williams-Decl., [0174]. Additionally, “Alice’s device” can “change the level of access” of Bob’s device by placing Bob in an i-Group that does not have *location access rights* for her device. Randall, [0509]; Williams-Decl., [0175]. Darling also teaches to allow the user to “Remove” contacts from the “List of individuals who have access to the Location Details.” Darling, 33:16-34:3; Williams-Decl., [0176]-[0177].

7. Claim 58

Randall teaches that the i-server can “[a]uthenticat[e]” a user like Bob to *request Alice’s data (including a second location of Alice’s first wireless device)* “where Bob...uses a public device,” which POSAs would have understood is often

a *non-wireless device* such as library or Internet café desktop computer. Randall, [0067]; *see also id.*, [0049] (“[a] wireless information device (*as well as web browsers*) can access an entity’s database,” where “web browsers” would have been understood as encompassing *non-wireless devices*), [0365] (“users will want...to access data and services from a variety of terminals and devices”); Williams-Decl., [0178]. The i-server can *provide said second location of Alice’s first wireless device* to that requesting device *in response to said request* as discussed *supra* §VI.E.1.g ([45G]). Randall, [0067]; Williams-Decl., [0178].

Additionally, Futagami confirms POSAs’ understanding that a “server” like Randall’s that “manages personal information of...users” can serve *non-wireless* “computers 1-4” as well as “portable telephone device[s].” Futagami, 4:7-10, 1:27-36, FIG. 2 (annotated below):



Futagami teaches that “personal information of a certain user” can be “*requested* by any of the computers 1-4.” Futagami, 4:7-20; Williams-Decl., [0179]-[0180].

POSAs would have understood that it was typical and obvious for such a *non-wireless device* to be a non-mobile device (e.g., Futagami’s desktop computers 1-2 in FIG. 2) that *does not comprise a positioning system* given that its “location is not usually changed very often.” Williams-Decl., [0181]-[0182] (quoting corroborating EX1073 (“Kari”), 6:15-23).

8. Claim 59

Randall’s wireless device uses “GPS” to determine its location and provide it to the i-server. Randall, p. 24 (“People tracking”), p. 22 Table 1 (“GPS location”), p. 29 (“Route finder”). POSAs would have known that “GPS” stands for “global *positioning system*.” Williams-Decl., [0183]-[0184]. The ’024 patent admits this was prior-art “background” knowledge. EX1001, 1:19-33.

9. Claim 61

Randall teaches that the *access rights* Alice provides Bob (which the *remote system stores* as discussed *supra* §VI.E.1.f ([45F]) can allow Bob to *access* Alice’s *location* for a time period that Alice can “extend...to ‘forever’”—i.e., *an indefinite period of time*. Randall, [0144]; Williams-Decl., [0185]-[0186].

10. Claim 62

Randall teaches that Alice can “select the person and allow access” (as discussed *supra* §VI.E.9 (claim 61)) for only “a pre-defined *period of time*.”

Randall, [0144], [0143] (allowing location access for “*specific period of time*”); Williams-Decl., [0187]-[0188].

11. Claim 63

Randall teaches that “[t]he user” can “change a visibility setting” for “location information” “for a *specific period of time*” which is “easily extensible by the user.” Randall, [0141]-[0144]. Thus, Alice can use her *first wireless device* to indicate *said specific period of time* to be applied by the *remote system* (as discussed *supra* §§VI.E.9-VI.E.10 (claims 61-62)). Williams-Decl., [0189]-[0190].

12. Claim 70

Randall teaches that the *remote system* can *provide Alice’s location* to Bob *after Bob inputs his login and password* from any *device*—including *another device* such as a borrowed or public device—as discussed *supra* §VI.E.4 (claim 53). Randall, [0365]. Randall teaches that “*web browsers*[] can access an entity’s database” on the “server.” Randall, [0049]. POSAs would have understood and found it obvious that when Bob logs in to access Alice’s data from a “web browser” on the *other device*, he will be authenticated by *inputting his login and password into a website*, which is what web browsers access. Williams-Decl., [0191]-[0192]; *see also* Randall, [0046] (“web page” representing user’s “database” on “internet server[]”).

13. Claim 73

Randall's "wireless information devices" can "include[]...*personal computers*." Randall, [0002]. Randall teaches that any user's "GPS wireless information device" can "transmit[] location information to the i-server" for *transmitting* to "authorised people" (Randall, p. 24 "People tracking"), thus teaching that the *remote system* can *store and transmit* to Bob's *second wireless device a location of a personal computer* if that device's user has authorized Bob. Williams-Decl., [0193]-[0195] (citing EX1070 ("Behr"), 8:20-49, FIG. 1, corroborating POSAs' background knowledge of wireless laptop personal computers being GPS-enabled for location tracking).

14. Claim 74

Randall's "wireless information device[s]" include "*radio* telephones," and any wireless information device's *location* can be *stored and transmitted* by the i-server *to said second wireless device* as discussed *supra* §VI.E.13 (claim 73). Randall, [0002], p. 24 ("People tracking"). Randall's *remote system* can thus *store and transmit a location of a radio*. Williams-Decl., [0196]. It would alternatively have been obvious to *store and transmit a location of* any type of location-transmitting *radio*, which were well-known in POSAs' background knowledge. Williams-Decl., [0197]-[0200] (citing corroborating EX1074 ("Boling"), Abstract,

4:5-18, 5:6-7, 7:13-26, 9:30-64; EX1076 (“Lelievre”), Abstract, [0047], FIG. 5); *infra* §IX.D.9.

15. Claim 75

Because Randall teaches to provide a “Route finder” service “similar to GPS tracking in cars, but for mobile phones” (Randall, p. 29), it would have been apparent to POSAs that a user may be using the mobile phone in *a car*, as users would benefit from such instructions while driving. Williams-Decl., [0201]. The mobile phone’s location is then *a location of a car*, which can be *stored* by Randall’s *remote system* and *transmitted* to Bob’s device if Bob is authorized by that user. Williams-Decl., [0201].

Additionally, POSAs would have understood that a typical implementation of a “radio telephone[]” (Randall, [0002]) as discussed *supra* §VI.E.14 (claim 74) was a car phone, whose location is *a location of a car*. Williams-Decl., [0202]-[0205] (citing corroborating EX1077 (“Aisaka”), 1:14-23; EX1078 (“Kuge”), 1:1-34).

16. Claim 78

Randall teaches that each user has a “contacts database, referred to as a ‘Universe,’” that “list[s]...all the entities known to” the user with their contact information. Randall, [0511], Table 2, [0509]-[0510], [0060]. POSAs would have

understood Bob’s “Universe” to be *a phone book corresponding to Bob*.⁴ Randall, p. 25 (“your phone’s address book”); Williams-Decl., [0206]. The “Universe” is stored in a “database” at the i-server (*remote system*) and also “cached on” the user’s “wireless information devices.” Randall, [0511], p. 23 (“Auto-entering address book”), [0062]-[0063], [0069]. Bob’s data on the i-server is “a ‘master’ version” of which “local copies...can be automatically created” and “made available to any *new devices* that a user adds.” Randall, [0046], [0062], [0129]. Thus, the *remote system* can store and download Bob’s *phone book* to a new *wireless telephone* of Bob. Williams-Decl., [0206]-[0208].

VII. GROUND 2: RANDALL-DARLING-FUTAGAMI IN COMBINATIONS WITH DE-VRIES, FROEBERG, BECHTOLSHEIM, DEGNBOL, WOLLRAB, OBRADOVICH

A. De-Vries (EX1013)

De-Vries relates to “notifications to inform when certain people (e.g., friends, family, business contacts, etc.) are nearby” based on “devices carried by the people” such as “cell phone[s].” De-Vries, Abstract, 2:21-26. A device’s “user can set rules and/or parameters to control when notifications are generated”— “[f]or example, a user may set a proximity parameter” in “the form of a geographic

⁴ Claim 78’s “*second wireless telephone*” lacks antecedent basis and is interpreted as encompassing claim 45’s “*second wireless device*.”

distance threshold” or “same city/town/neighborhood,” etc. De-Vries, 2:52-59, 9:1-18. “This applies both the degree to which a user discloses their location to others, and the relevance of another’s location relative to the user.” De-Vries, 9:19-22. “[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., [0209]-[0211].

B. Froeberg (EX1051)

Froeberg, 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. 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., [0212].

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

possible “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., [0213].

D. Degnbol (EX1035)

Degnbol describes notifying a user when another pre-selected user enters a pre-determined area or into proximity of a particular location. Degnbol, Abstract, FIG. 1. Users can specify that alerts be generated when a buddy enters a predetermined range “associated with a geographic area” or “a direct distance.” Degnbol, 6:6-17, 11:5-11. Williams-Decl., [0214].

E. Wollrab (EX1014)

Wollrab relates to “members of an identified family, work, or other group” tracking each other’s wireless device GPS locations “as coordinates on a graphic map.” Wollrab, 5:50-61, 6:28-31, 4:40-58, FIG. 4B. Wollrab describes storing and displaying on the graphic map “a historical tracking record of movement for” a tracked device. Wollrab, 3:21-27, 4:54-58. Williams-Decl., [0215].

F. Obradovich (EX1043)

Obradovich discloses a “system for communicating and retrieving position and position related data” using “Personal Communication Devices (PCDs)” like

Randall's wireless devices. Obradovich, 1:16-17, 2:18-23, 2:60-63; Williams-Decl., [0216]. Obradovich's system, like Randall's, "allows users to request detailed information relating to their present location" and location information for destinations and other individuals. Obradovich, 3:45-47, 4:1-5; Williams-Decl., [0216].

G. Combinations of Randall-Darling-Futagami with De-Vries, Froeberg, Bechtolsheim, Degnbol, Wollrab, Obradovich

De-Vries: Randall, like De-Vries, provides notifications via wireless devices when certain contacts are nearby, including via an "Old buddy finder" service that, e.g., "alerts Bob when a contact happens to be within a defined proximity." Randall, p. 24. To the extent that Randall does not specify how the server transmits these alerts or that the user receiving the alerts (e.g., Bob) or the user whose location is the subject of an alert (e.g., Alice) can set the rules/parameters for receiving them and choose among various ways of defining what level of location specificity is disclosed to particular other device users, POSAs would have been motivated to implement Randall's service in the Randall-Darling-Futagami system (*supra* §VI.D) that way based on De-Vries's teachings. For example, De-Vries's techniques provide the user with control over what alerts they receive and what location information they share, about/to whom, and in what circumstances. De-Vries, 2:52-3:15, 8:41-10:43; Williams-Decl., [0217]. 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., [0217].

Degnbol: Based on Degnbol's teachings regarding a similar system providing similar location-based alerts, POSAs would have been motivated and reasonably expected success to "inform[]" a user at his wireless telephone "that he has been the subject of an alert to another user," as well as to "determin[e] the position of" "communication units" including "wristwatches." Degnbol, 21:4-6, 18:27-31, 4:1-5:20, 6:22-7:17, 27:14-16; Williams-Decl., [0218].

Froeberg: POSAs would have been motivated to implement Randall-Darling-Futagami's server to generate and transmit the directions that Randall discloses (*infra* §VII.H.2 (claim 49)) in view of Froeberg's teachings that doing so allows storage and/or processing requirements to be implemented server-side, reducing such requirements locally at the mobile device. Froeberg teaches to implement driving-directions functionality via a server-side "reverse street segment geocoder" with "a database of geodetic coordinates and street network segments" and a server-side "route generator" (Froeberg, FIG. 5, 7:5-22), that then need not be implemented locally at the user telephone (Froeberg, FIG. 4, 4:27-6:20). Williams-Decl., [0219]. 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., [0219].

Bechtolsheim: POSAs would have recognized Bechtolsheim's techniques as the type of "GPS tracking in cars" techniques that Randall's "Route finder" is "similar to" (Randall, p. 29). Williams-Decl., [0220]. 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 in Randall-Darling-Futagami, with another user's location as the destination as discussed *infra* §VII.H.2 (claim 49). Williams-Decl., [0220].

Wollrab: POSAs would have been motivated to enhance Randall-Darling-Futagami by incorporating Wollrab's teachings discussed *supra* §VII.E to store historical location-tracking records to help trace where a device has been and locate a device whose tracking has been lost, such as for a parent locating a child. Wollrab, 3:21-27, 4:40-58; Williams-Decl., [0220]-[0221] (citing corroborating EX1012 ("Ganesh"), 7:3-20, 1:43-55). POSAs would have reasonably expected success given that Randall's i-server already receives, stores, and provides updates of a target wireless device's location as discussed *supra* §VI.A, §VI.E.1. Williams-Decl., [0221].

Obradovich: POSAs would have been motivated and reasonably expected success to incorporate into Randall-Darling-Futagami Obradovich’s teachings to utilize a user’s location to validate credit requests, to “make use of [Randall’s] location monitoring capability” in “determining the validity of credit requests.” Obradovich, 24:50-25:30; Williams-Decl., [0222].

H. Mapping to Challenged Claims

1. Claims 48, 51-52, 56

Claims 48, 51-52, and 56 are obvious over Randall-Darling-Futagami-De-Vries.

Randall teaches that Alice “allow[s] others to track...her location...using the location attribute of [Alice’s] data object.” Randall, [0021]. The location attribute can be “at different levels of granularity—for example, location might be defined in very approximate terms...no better than a given city,” or as “enriched location information” that is exact “to within a few meters.” Randall, [0024]. “[S]ince the objects can be sent between users,...*access control*” is “invoked to ensure that access to enriched data is only provided to those entitled.” Randall, [0023]. Randall thus teaches that the *location access rights* to Alice’s location can *comprise a plurality of access levels*—e.g., one level accessing her location in “approximate terms” (e.g., just the city) and another level accessing her exact location. Williams-Decl., [0223]-[0225].

Additionally, De-Vries teaches to allow the *first wireless device* user (e.g., Alice) to control the granularity at which the “user discloses their location to others” (i.e., to cause the server to *filter* the disclosed *information* about their *location*) such that the “user may provide very accurate information to trusted individuals (e.g. location to 10 meter resolution to family members) and less accurate data to others (e.g. simply the *city* where one is located to a co-worker).” De-Vries, 9:19-26; Williams-Decl., [0226].

Thus, POSAs would have been motivated and reasonably expected success to implement the Randall-Darling-Futagami-De-Vries combination such that *said location access rights comprise a plurality of access levels* (meeting claim 48)—e.g., an access level that provides the *exact location* and an access level where the *remote system filters* the location information to *transmit only a portion* of it (e.g., an *approximate location* such as only the *city*) (meeting claims 51-52 and 56)—in view of both Randall’s and De-Vries’s teachings of successfully doing so. Williams-Decl., [0227]-[0228].

2. Claim 49

Claim 49 is obvious over Randall-Darling-Futagami or Randall-Darling-Futagami-Froeberg.

Randall provides a “Route finder” service, “similar to GPS tracking in cars, but for mobile phones. You identify where you want to go, the phone knows where

you are already. It can therefore give you *step by step instructions* on how to get there (eg. Turn left at the next lights. Carry on 100 metres. Go straight over the roundabout).” Randall, p. 29. These “instructions” meet Mullen’s proposed construction of *directions* in related U.S. Patent No. 8,374,575 as “instructions indicating how to navigate from one location to another location” (IPR2023-00097, Paper 13 at 4). Williams-Decl., [0229]-[0230].

Further, Randall provides a “Rendezvous” service “on your mobile phone to help you meet friends and family” by “hav[ing] your location visible to others—so using your phones everyone in your group can tell precisely where the others are.” Randall, p. 29. Randall teaches that “your phone can display a map of the area you are standing in” (Randall, p. 29) and also “show [your] position” and “the position of [another] user” (Randall, [0021]). POSAs would have understood and found it obvious from these disclosures that another user’s position can be a destination “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., [0231].

As discussed *supra* §VI.A, Randall teaches that applications share information and coordinate to provide services of interest to users. POSAs would have had motivation and reasonably expected success to use, e.g., Alice’s location (which is provided to Bob’s device by the i-server as discussed *supra* §VI.E.1 (claim 45)) as a “Rendezvous”-type destination in the “Route finder” service on

Bob's device to provide Bob directions to Alice's location. Williams-Decl., [0232].

Thus, Randall teaches, or at minimum renders obvious, *providing to Bob's second wireless device directions from Bob's location to the location of Alice's first wireless device*. Williams-Decl., [0233].

Generating the *directions* at the i-server and transmitting them to Bob's device would have been obvious to, e.g., reduce storage and/or processing requirements at the wireless device, in view of POSAs' background knowledge of the well-known design choice and reasonable expectation of success to do so.

Williams-Decl., [0234]-[0239] (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, as discussed *supra* §VII.G, POSAs would have been motivated to implement Randall-Darling-Futagami's *remote system* to generate the claimed *directions* for transmission to Bob's wireless device in view of Froeberg's teachings that doing so can reduce storage and/or processing requirements for generating *directions* locally by implementing them server-side. Williams-Decl., [0240]-[0241].

3. Claim 50

Claim 50 is obvious over Randall-Darling-Futagami-Froeberg or Randall-Darling-Futagami-Bechtolsheim.

It would have been obvious as well-known, conventional background knowledge for Randall-Darling-Futagami-Froeberg's "system similar to GPS tracking in cars" (Randall, p. 29 "Route finder") to *provide* "an estimated **time** to reach the final destination" (*said location*). Williams-Decl., [0242]-[0248] (quoting EX1025 ("Wako"), 2:12-34 ("BACKGROUND" section), FIGs. 1B, 7, 9:8-22; citing corroborating EX1041 ("Tobin"), [0028], FIG. 1C; EX1043 ("Obradovich"), 2:60-63, 8:18-22, 22:47-65, FIG. 47; EX1067 ("Mura-Smith"), 9:12-14, 7:40-56, 8:45-57, FIG. 8B). It would have been obvious to generate this information server-side to reduce storage and/or processing requirements at the wireless device, for the same reasons discussed *supra* §VII.H.2 (claim 49). Williams-Decl., [0248].

Further, Bechtolsheim teaches the *remote system providing to the wireless device a travel time to the destination*, as discussed *infra* §VII.H.14 (claim 77). Williams-Decl., [0249]-[0250].

4. Claim 57

Claim 57 is obvious over Randall-Darling-Futagami-De-Vries.

Randall provides an “Old buddy finder” service wherein Bob’s “[w]ireless information device *alerts* Bob when a contact happens to be *within a defined proximity*.” Randall, p. 24. Thus, Randall discloses *alerting* Bob’s *second wireless device when Alice’s first wireless device is within a distance of* Bob’s device. Williams-Decl., [0251]-[0252].

De-Vries concerns the same type of proximity-based *alerting* as Randall. De-Vries, Abstract (“notifications to inform when certain people...are nearby” as “tracked by positioning equipment based on personal communications/computing devices carried by the people”), 2:18-35 (“mobile personal information devices such as cell phone”), 4:39-44, 4:60-65; Williams-Decl., [0253]. In De-Vries, like in Randall, wireless device GPS locations are “stored in the people/place database” on the server (*remote system*) to “provide *alerts*” to other users’ devices. De-Vries, 5:20-62. In that context, De-Vries similarly teaches to *alert said second wireless device when said first wireless device is within a distance of second wireless device*. De-Vries, 9:1-8 (A “parameter sets a proximity threshold within which people...are to be considered proximate to the user...for purposes of...providing notifications” as “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., [0253]-[0254].

5. Claims 60, 65

Claims 60 and 65 are obvious over Randall-Darling-Futagami-De-Vries.

De-Vries teaches that “[t]he information service” (Randall’s *remote system*) “supports a parameter for the user to disable and enable notifications,” by which “user A could enable notifications from a group including person B.” De-Vries, 9:46-62, FIG. 1 (“information service” is server-implemented). POSAs would have understood such “enabl[ing] notifications” to be the *remote system setting a location alert associated with said first wireless device* (e.g., Alice as “person B”) *for a user associated with said second wireless device* (e.g., Bob as “user A”) *in response to a request* received from Bob’s *second wireless device*. Williams-Decl., [0255]-[0256].

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* §VII.A, §VII.G. 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 *setting a location alert associated with the triggering device for the requesting user in response to a request* received from the device setting the parameters. Williams-Decl., [0257]-[0258].

6. Claim 64

Claim 64 is obvious over Randall-Darling-Futagami-De-Vries.

In Randall's "Old buddy finder," Bob's "device *alerts* Bob when a contact happens to be within a defined proximity (e.g. Bob and Alice...)." Randall, p. 24. This *alert* is *based on Alice's device's location*. Williams-Decl., [0259]-[0260].

As discussed *supra* §VII.H.4 (claim 57), De-Vries concerns the same type of proximity-based *alerts* as Randall. De-Vries teaches to implement such alerts by the "server send[ing] a notification"—i.e., the *remote system transmitting the alert*—to the *second wireless device*. De-Vries, 8:1-3, 8:31-40, FIG. 1; Williams-Decl., [0261]-[0262].

7. Claim 66

Claim 66 is obvious over Randall-Darling-Futagami-De-Vries.

Randall teaches that *said alert* can be *geographic area-based*—e.g., *alerting when the other user's location is within a city*. Randall, p. 24; Williams-Decl., [0263]. De-Vries also teaches *geographic area-based alerts*, and that the *second wireless device* user (e.g., Bob) can *specify the geographic area* by setting "proximity parameters, such as same city/town/neighborhood," within which the server will "provid[e] notifications" that specified other users' "locations are within the scope indicated by the parameter." De-Vries, 8:41-9:18; Williams-Decl., [0264]-[0265].

8. Claim 67

Claim 67 is obvious over Randall-Darling-Futagami-Degnbol. Based on Degnbol's teachings discussed *supra* §VII.D, §VII.G, it would have been obvious to *transmit an alert* to Alice's *first wireless device* when "[s]he has been the subject of an alert to another user" (e.g., Bob) by which Bob *locates* Alice's *first wireless device* as being nearby. Degnbol, 21:4-6, 18:27-31; Williams-Decl., [0266]. It would alternatively have been obvious to *transmit an alert* whenever another user requests Alice'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., [0267]-[0269] (citing corroborating EX1071 ("Rice"), 9:26-51, 7:40-49, 12:20-33).

9. Claim 68

Claim 68 is obvious over Randall-Darling-Futagami-Wollrab, which implements Wollrab's teaching that "multiple sequential sets of remote sensing location coordinates are *stored*...to create a *historical tracking record* of movement" that "can be retrieved later...for such purposes as tracking member movements or locating a lost member." Wollrab, 3:20-27, 4:54-58, FIG. 4C; Williams-Decl., [0270]. Wollrab's wireless devices share their locations with each other via a *remote system* ("[s]atellite device 12"). Wollrab, 4:1-23. In Randall's system, this functionality is performed by the i-server (discussed *supra* §VI.E.1

(claim 45)). Williams-Decl., [0270]. Storing a *history of locations* server-side was also a well-known design option. Williams-Decl., [0271]-[0272] (citing corroborating EX1019 (“Thomas”), 7:34-49, 5:58-6:37; EX1012 (“Ganesh”), 7:3-65, FIG. 1, 4:8-28). POSAs would have reasonably expected success because Randall’s *remote system* already receives, stores, and provides updates of a device’s location. Williams-Decl., [0273]-[0274].

10. Claim 69

Claim 69 is obvious over Randall-Darling-Futagami-Wollrab. Wollrab teaches that the *remote system provides* to a member device *a location from* the stored *history of locations* “for such purposes as...locating a lost member.”

Wollrab, 3:21-27, 4:54-58 (“location 44-5”), FIG. 4C:

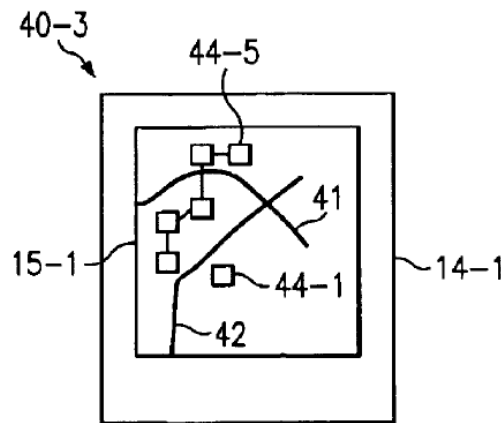


FIG. 4C

From this teaching and background knowledge, POSAs would have understood that in Wollrab’s scenario where the device’s tracking was “lost,” that

may often be because the tracked device *is turned off*. Williams-Decl., [0275]-[0279] (citing corroborating EX1012 (“Ganesh”), 7:3-20, 6:55-56).

11. Claim 71

Claim 71 is obvious over Randall-Darling-Futagami-Degnbol.

Randall’s “wireless information device[s]” can be “any kind of device with one or two way wireless information capabilities,” and the *remote system stores and transmits the location of a* wireless information device to any authorized *wireless device* as discussed *supra* §VI.E.1 (claim 45). Randall, [0002], [0021]; Williams-Decl., [0280]-[0281].

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., [0282]. POSAs would have understood Degnbol’s “wristwatches” to be a suitable wireless information device in Randall-Darling-Futagami; thus, it would have been obvious to *store and transmit the location of a watch*. Williams-Decl., [0282]-[0283].

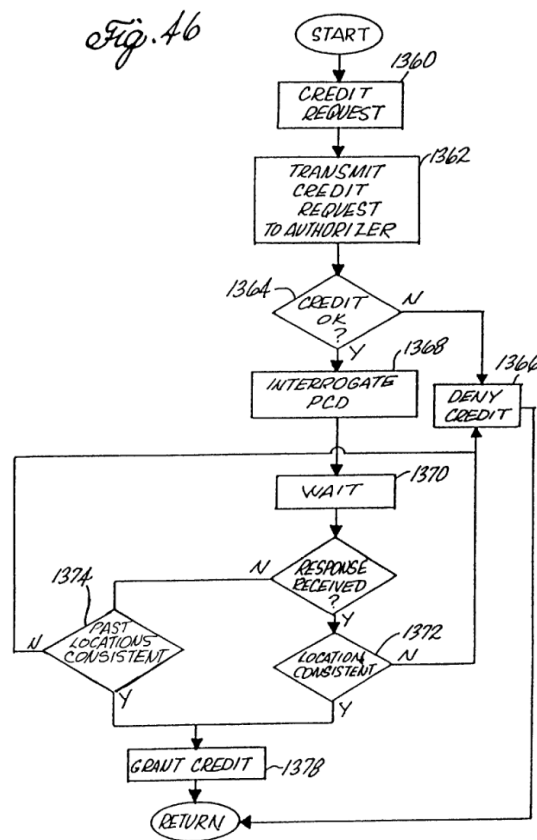
12. Claim 72

Claim 72 is obvious over Randall-Darling-Futagami-Degnbol. Degnbol teaches that the *watch* discussed *supra* §VII.H.11 (claim 71) is “[a] unit in the set” of “*communication* units” whose “position” is determined by “GPS,” etc. Degnbol, 4:1-5:11, 6:22-7:30. Randall teaches that such GPS-enabled (Global

Positioning System) wireless communication devices communicate their position to the *remote system* (i-server) over said communications network, as discussed *supra* §§VI.E.1.a-VI.E.1.b ([45A]-[45B]). Randall, p. 24 (“People tracking”); Williams-Decl., [0284]-[0286].

13. Claim 76

Claim 76 is obvious over Randall-Darling-Futagami-Obradovich, which incorporates Obradovich’s teaching to *provide the first wireless telephone’s “location information” to a “credit authorizer” to validate its user’s “request for credit.”* Obradovich, 4:62-65, 24:50-25:30, FIG. 46:



Williams-Decl., [0287]-[0289].

14. Claim 77

Claim 77 is obvious over Randall-Darling-Futagami-Bechtolsheim.

As discussed *supra* §VII.C, §VII.G, Bechtolsheim teaches to compute the *time to reach* the destination via various routes *according to two types of travel: walking and driving*, since the “user may not necessarily be able to park at the destination location.” Bechtolsheim, 1:27-50. Bechtolsheim further teaches that the user may wish to “choose one” of the available driving-parking-walking routes from a “displayed list” based on, e.g., “walking distance” (Bechtolsheim, 18:48-19:3), and that the user can “select[]” whether the user cares more about “time to travel” than “distance” (Bechtolsheim, 19:17-36). It would therefore have been obvious to provide the user with travel-time information for a combination driving/walking route to aid the user’s selection. Williams-Decl., [0290]-[0291]. Bechtolsheim teaches to “*provide[]*” the navigation information to the user’s device from “a *remote* location” where it is computed. Bechtolsheim, 5:16-19; Williams-Decl., [0291]-[0294].

Additionally, Bechtolsheim teaches to “compare[]” the “travel time using public transportation” (which POSAs would have understood typically includes *subway*) “to the travel time using a private vehicle” (*driving*). Bechtolsheim, 21:26-59. It would therefore have been obvious to provide the user with travel-

time information for both *subway* and *driving* routes to allow the user to select one, which also meets claim 77. Williams-Decl., [0295].

VIII. GROUND 3: SHEHA+DARLING+FUTAGAMI

Grounds 3-4 together challenge claims 45-78 based on Sheha combined with Darling and Futagami. Futagami teaches the feature of element [45D] that the Board preliminarily found missing from Sheha in IPR2023-00149 (Paper 10 at 19-23).

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., [0077]-[0082].

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 users authorized to obtain their location information. Sheha, 11:51-12:7.

A mobile device may request a target 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, including displaying a map. Sheha, 9:23-39.

FIG. 3 (below) illustrates an example system.

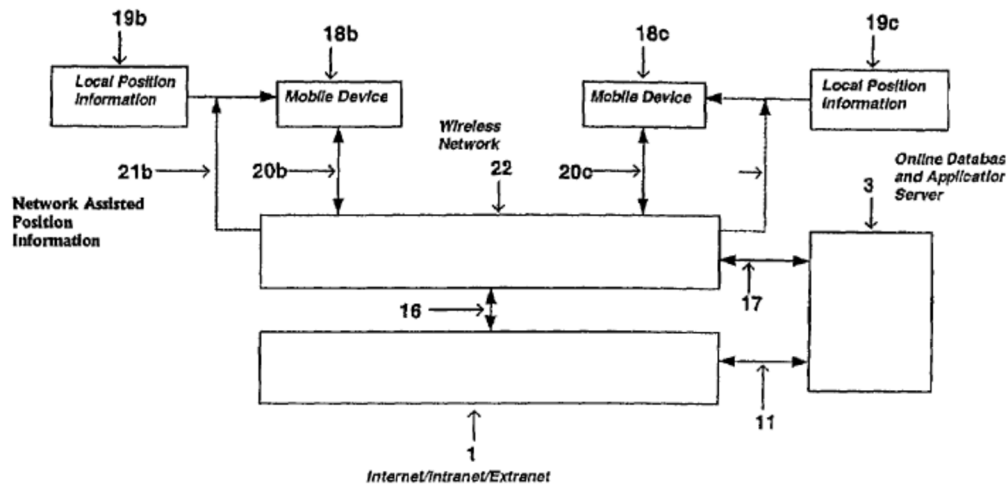


FIG. 3

Williams-Decl., [0298]-[0304].

B. Sheha-Darling-Futagami Combination

Sheha, Darling, and Futagami all describe systems where a server stores potentially sensitive, private, personal information of client users of wireless devices; in both Sheha and Darling, this includes location information. Sheha, 11:3-8; Darling, 3:1-8, 21:19-22:17, 32:39-34:3; Futagami, 4:7-12; Williams-Decl., [0305]-[0306].

All three references describe access control where each user specifies which other users have access rights to specific items of the user's personal information, and the server only transmits the information if the receiving user has such access

rights. Sheha, 11:55-12:7; Darling, 3:1-8, 22:37-23:13, 33:16-34:3; Futagami, 13:33-67, 14:1-15:53, 18:26-19:27, FIGs. 15-16; Williams-Decl., [0307]-[0308].

Therefore, POSAs implementing Sheha's system would have been motivated and reasonably expected success to incorporate teachings from Darling and Futagami, including supplementing Sheha's location access control techniques with aspects of Darling's and Futagami's access control techniques. Williams-Decl., [0309], [0065]-[0073]. Darling teaches that such personal information as Futagami's can include location information and that it was known to "request permission" for a "second user" who does not already have permission to access a "first user's...location information." Darling, 3:1-19, 21:19-23:13, 32:39-34:3; Williams-Decl., [0309].

POSAs would have been motivated and reasonably expected success to apply, to location requests in Sheha's system, Futagami's teachings for how to proceed when the requesting user does not already have access rights, including providing the option to request that the server request access from the target user (or not). Futagami, 15:40-16:32, 18:62-20:67, FIGs. 19-20; Williams-Decl., [0310]. POSAs would have recognized Futagami's technique as desirable, e.g., because it allows the requesting user to choose whether to disturb the other user at that particular time with a location request. Williams-Decl., [0310].

C. Mapping to Challenged Claims

1. Claim 45: [45PRE]

Sheha describes a “*system...for providing real-time position information of one party to another party.*” Sheha, Abstract; Williams-Decl., [0311]-[0314].

a. [45A]

Sheha’s system includes an “online database and application *server* (ODAS).” Sheha, 7:20-23. ODAS 3 is a system *remote* from and *capable of communicating with* mobile devices 18b-18c (*wireless devices*) over wireless network 22 (*a communications network*). Sheha, FIG. 3 (annotated below), 4:43-46 (“mobile” device can be “*wireless* telephone”), 10:66-11:35 (describing communication in FIG. 3); Williams-Decl., [0315]-[0316].

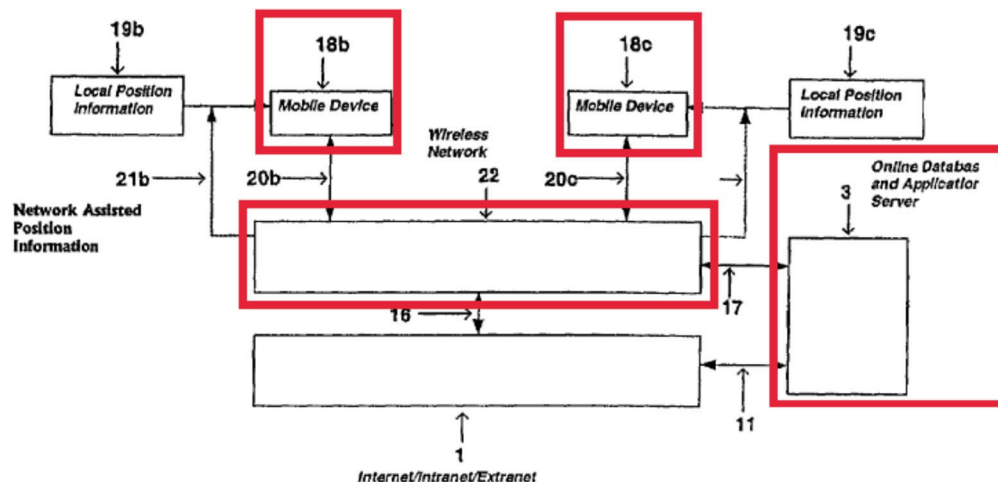


FIG. 3

b. [45B]

In Sheha, each mobile device supplies its position to the ODAS, from which another device can request it. Sheha, 10:5-16, 11:3-8, 11:15-20, 11:44-51; Williams-Decl., [0317]. “A mobile...device can...*request position information of another mobile...device* by...specifying a telephone number,” with or without placing a telephone call. Sheha, 11:55-12:7, 10:66-11:54; Williams-Decl., [0317]. For example, “[w]hen a mobile device 18b [*second wireless device*] dials a telephone number,” the “ODAS 3 requests position information from the destination mobile device 18c [*first wireless device*]” and “periodically updates each mobile device with the other’s position information.” Sheha, 11:10-54; Williams-Decl., [0317]-[0318].

c. [45C]

Sheha teaches that when “a mobile device user specifies a telephone number of another position-enabled mobile device, the system would query the remote mobile device and verify its privacy setting”—also called “permission settings”—by which the remote device can specify “allowance of position information transfers...*only* with the device owner’s permission.” Sheha, 4:59-5:46; Williams-Decl., [0319]. Because the system shares the *first wireless device*’s location “only” with permission, Sheha teaches that there are scenarios where the system *determines that said second wireless device does not have permission to receive*

the location (i.e., *location access rights*) for said first wireless device. Williams-Decl., [0319]; see also Sheha, 5:37-41 (device may “**prevent or limit** other calling devices from obtaining position information”).

The target mobile device’s privacy/permissions settings information can include “a group database and authorization and authentication protocols” by which the user “can define a group of specific users that have access to” the target device’s location information. Sheha, 11:55-12:7, 4:59-5:20; see also *id.*, 13:65-14:2, 14:54-61, 19:9-13; Williams-Decl., [0320]. The ODAS uses this privacy information to determine whether the target device has given the requesting device *location access rights* 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., [0320].

In IPR2023-00149 (Paper 7 at 25), Mullen argued that Sheha’s “privacy settings” are not “applied or assigned to specific individual devices or users” (IPR2023-00149, Paper 9 at 21) and that Sheha’s “embodiments described at 11:63-12:7” do not “teach[] determining that a specific third-party device...lacks access rights” (*id.* at 24-25). Mullen was incorrect. First, claim element [45C] does not require the *location access rights* to be exclusive to the *second wireless device*. [45C]’s language encompasses *determining that said second wireless device does not have location access rights for said first wireless device* for any

reason—including, e.g., if the *first wireless device* is not giving *location access rights* to anybody. Williams-Decl., [0321].

Element [45C] also encompasses determining whether *location access rights* were provided to, e.g., a group of devices including the *second wireless device*. Williams-Decl., [0322]; *see* EX1001, 13:9-12, 3:23-25 ('024 patent discussing assigning access rights to “groups”). Additionally, providing *location access rights* to an individual device would have been obvious because “defin[ing] a group” of authorized users (Sheha, 11:63-65) can include defining a group having only one member. Darling, 41:20-42:2 (“A user defined group can be a single person.”); Williams-Decl., [0322]. Alternatively, allowing permissions specific to individuals in addition to groups would have been obvious as a well-known beneficial option with reasonable expectation of success. Darling, 3:3-5 (“Each user may specify that location information is available only to *specified users or groups*”); Williams-Decl., [0322]-[0324] (citing corroborating EX1007 (“Randall”), [0052], [0070], [0136], [0144]-[0146]; EX1015 (“Friedman”), 12:60-13:21).

Contrary to Mullen’s arguments (IPR2023-00149, Paper 9 at 24-25), Sheha describes device-local privacy filters and the requester-specific group database of permissions as complementary privacy/permission specification options that POSAs would have understood can all coexist within an embodiment, and that are

interchangeably referred to 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, 11:55-12:7, 18:65-19:46; *see id.*, 19:9-15, 19:44-45; Williams-Decl., [0325]. Sheha thus discloses that mobile-to-mobile call and no-call embodiments 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 (mobile-to-mobile embodiments can use the same “privacy settings” and “authorization and authentication protocols...similarly to” landline embodiments), 8:42-53 (“ODAS 3 us[es] authentication and authorization protocols” to “verify the level of authority each user is granted”); Williams-Decl., [0326].

Alternatively, using mobile-to-mobile group permissions would have been obvious because allowing a mobile user to specify a group of 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, as Darling teaches and other prior art corroborates. Darling, 2:1-15, 2:47-3:5, 32:39-33:32; Williams-Decl., [0327]-[0329] (citing corroborating EX1054 (“Sandhu”), 5:35-50; EX1007 (“Randall”), [0052], [0070], [0136], [0144]-[0148]).

Darling and Futagami further render obvious implementing Sheha's system to perform [45C]'s *determining*, in the manner discussed *supra* §VI.E.1.c. Darling, 3:1-9, 35:24-28; Futagami, 15:40-53, FIG. 17 (arrow "N" from S62), FIG. 19 (P45), FIG. 20 (P55); Williams-Decl., [0330]-[0332].

d. [45D]

As discussed *supra* §VI.E.1.d, Futagami teaches the *remote system receiving a request from said second wireless device that the access rights to sensitive personal information be assigned for said second wireless device by said first wireless device, after determining that said second wireless device does not have the access rights for said first wireless device*. Williams-Decl., [0333]. In Sheha-Darling-Futagami (*supra* §VIII.B), the requested personal information is the *first wireless device's location*, and the access rights are *location access rights*, meeting [45D]. Williams-Decl., [0333]. As discussed *supra* §VIII.B, POSAs would have been motivated to implement this *request*, to allow for obtaining location access rights while controlling whether to disturb the target user with an access request. Williams-Decl., [0334]. POSAs would have reasonably expected success based on Futagami's teachings. Williams-Decl., [0334]; *supra* §VIII.B. Darling reinforces [45D]'s obviousness, as discussed *supra* §VI.E.1.d. Darling, 3:1-19; Williams-Decl., [0334]. Sheha, too, teaches that the server can "quer[y] the remote party of

the position request for permission.” Sheha, 5:21-46; Williams-Decl., [0334]-[0335].

e. [45E]

As discussed *supra* §VI.E.1.e, Futagami teaches the *remote system receiving from said first wireless device an assignment of the access rights for said first wireless device to said second wireless device* in response to a request as in [45D] (*supra* §VIII.C.1.d). Futagami, 16:25-32, 17:8-13, 19:60-65, FIG. 20; Williams-Decl., [0336]. Darling reinforces this, as discussed *supra* §VI.E.1.e. Darling, 3:18-19; Williams-Decl., [0336]. As discussed *supra* §VIII.C.1.c ([45C]), Sheha’s *first wireless device may assign said location access rights to said second wireless device* by granting one-time permission, changing privacy settings, and/or assigning the *second wireless device* user to a group that has access to the *first wireless device*’s location. Sheha, 5:29-34, 11:55-12:7; Williams-Decl., [0336]-[0337].

f. [45F]

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 location access rights* for specific users. *See* Sheha, 3:4-13, 4:8-18, 7:22-23, 8:42-53, 9:61-10:4; Williams-Decl., [0338]. Alternatively, storing the group permissions at the server would have been

obvious, as Darling teaches and other prior art corroborates. Darling, 3:1-5 (“[T]he *server stores permission information....*”); Williams-Decl., [0338]-[0341] (citing corroborating EX1054 (“Sandhu”), 5:8-6:22; EX1007 (“Randall”), [0511]-[0514]; EX1015 (“Friedman”), 12:60-13:21).

Also, for any privacy settings set locally at the target device, it would have been obvious to store those settings at the server after verifying them by querying the device (Sheha, 4:64-66), so the server can then apply them to determine whether to release the device’s location to a requesting user. Williams-Decl., [0342].

Further, as discussed *supra* §VI.E.1.f, Futagami teaches the *remote system storing the access rights* when the *first wireless device* user provides them in response to a request as in [45D]-[45E] (*supra* §§VIII.C.1.d-VIII.C.1.e). Futagami, 16:49-58, 19:66-20:7, 20:60-67, FIGs. 17, 20; Williams-Decl., [0343]-[0344].

g. [45G]

Sheha’s *remote system* provides the target device’s *location* to the requesting device if it has been granted *location access rights*. Sheha, 5:2-7, 5:32-34, 10:66-11:9, 11:44-51; Williams-Decl., [0345]. Further, Futagami teaches the *remote system providing* the requested information once the *first wireless device* has provided *said access rights*, as discussed *supra* §VI.E.1.g. Futagami, 16:49-61,

17:8-11, 19:66-20:7, FIGs. 17, 20; Williams-Decl., [0345]; *see supra* §VI.E.1.g (discussing that claim 45 does not limit the order of performing elements [45F]-[45G], Futagami teaches either order, and any order would have been obvious). Because the requesting device previously did not have *access rights* (*supra* §VIII.C.1.c ([45C])), POSAs would have understood that Sheha-Darling-Futagami only *provides* the requested information *dependent upon* determining that the requesting device now has *access rights*. Williams-Decl., [0345]-[0346].

2. Claim 46

Sheha's requesting and target devices can be *cellular phones*. Sheha, 10:66-11:3; Williams-Decl., [0347]-[0348].

3. Claim 47

As discussed *supra* §VIII.C.1 (claim 45), Sheha's *location access rights* include the ability to obtain said location. Because the *second wireless device* obtains the *first wireless device's* location from the ODAS where it is stored, POSAs would have understood that the ODAS can *provide said location to said second wireless device even when said first wireless device is off*. Williams-Decl., [0349]. Darling confirms this understanding. Darling, 2:1-12; Williams-Decl., [0349].

Additionally, it was well-known and obvious to implement the *first wireless device* to transmit its location to the server even when it is *OFF*. Williams-Decl.,

[0350]-[0354] (citing corroborating EX1009 (“Ryden”), 16:53-62; EX1010 (“Ryden-Prov.”), 31:4-8; EX1018 (“Meadows”), 7:20-33).

4. Claim 53

Sheha discloses that “every...user has a username [i.e., *login*] and *password*” as “*user identification* information,” which the requesting device provides for “authentication and authorization procedures,” whereby the ODAS determines “that a particular *user* is signed-on to the system” and whether the “user is genuine.” Sheha, 8:38-53, 3:4-10, 5:26-29; Williams-Decl., [0355].

Darling and Futagami reinforce this teaching to meet claim 53, as discussed *supra* §VI.E.4. Darling, 11:12-20, 19:11-14; Futagami, 8:62-67; Williams-Decl., [0356]-[0357].

5. Claim 54

As discussed *supra* §VIII.C.1 (claim 45), Sheha’s user can define a list of authorized users and change their privacy settings at any time using the target wireless device; thus, the *remote system modifies said location access rights based on a request received from said first wireless device*. Sheha, 5:9-20; 11:61-12:7; Williams-Decl., [0358]. Darling teaches allowing the *first wireless device* to *request* to “Add”/“Remove” contacts from the *location access* “List” at the server. Darling, 33:16-34:3; Williams-Decl., [0358]-[0359].

6. Claim 55

Sheha's functionality discussed *supra* §VIII.C.5 (claim 54) includes terminating another user's access "at anytime," thereby *deleting* that user's *location access rights*. Sheha, 5:12-14; Williams-Decl., [0360]-[0361]. Darling teaches allowing the *first wireless device* to *request* to "Remove" contacts from the *location access* "List" at the server. Darling, 33:16-34:3; Williams-Decl., [0360]-[0361].

7. Claim 58

Sheha discloses the *remote system receiving a request* for a mobile device's location *from*, and *providing* the requested information *to, a non-wireless* "landline" device, which *does not comprise a positioning system*, as its location is obtained by reverse telephone-number lookup instead of GPS. Sheha, 10:47-52, 7:51-54, 9:43-10:4; Williams-Decl., [0362]-[0363].

8. Claim 59

Sheha's *remote system receives* the mobile device's *location from* the device's *positioning system* (e.g., GPS). Sheha, 10:1-16; Williams-Decl., [0364]-[0365].

9. Claim 61

Sheha teaches that the *location access rights* stored as discussed *supra* §VIII.C.1.f ([45F]) can allow "specific users [to] have access" to the *first wireless device's 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 authorized *second wireless device user* may access the location at any time, untethered to any call. Williams-Decl., [0366]-[0367]. Sheha also discloses a wireless device instructing the *remote system* to *allow access* to its location until “terminate[d]” by “manual intervention” or for “as long as [a] call is active,” which are both *indefinite periods of time* because their length is not known *a priori*. Sheha, 5:15-46; Williams-Decl., [0366]-[0368].

10. Claim 62

Sheha’s mobile device’s “privacy settings” that the ODAS “quer[ies]” and *stores* (*supra* §VIII.C.1.f ([45F])) 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., [0369]-[0370].

11. Claim 63

As discussed *supra* §VIII.C.10 (claim 62), Sheha’s *remote system receives an indication of said specific period of time from said first wireless device* by “query[ing]” its “privacy settings.” Sheha, 4:59-66, 5:9-14, 5:40-46, 3:10-13; Williams-Decl., [0371]-[0372].

12. Claim 73

Sheha’s ODAS *stores and transmits to said second wireless device a location of a personal computer*. Sheha, 19:29-31 (“transmitting...position information of the communication device”), 19:41-43 (“communication

device...is...a *personal computer*”), 4:26-42 (landline telephone whose location is at location of “adjacent...*personal computer*”), 10:44-47 (same in “landline-to-mobile example”); Williams-Decl., [0373]-[0374].

13. Claim 75

Sheha describes each “mobile device receiv[ing] the Map Caller-ID” from the ODAS, displaying “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, 11:40-52, 4:52-58, 10:27-41, 12:8-41. In this scenario, the location of the mobile device that the ODAS (*remote system*) stores and transmits is a location of a car. Williams-Decl., [0375]-[0376].

IX. GROUND 4: SHEHA-DARLING-FUTAGAMI IN COMBINATIONS WITH DE-VRIES, FROEBERG, BECHTOLSHEIM, DEGNBOL, WOLLRAB, OBRADOVICH, BOLING, SMITH

A. 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., [0377]-[0379].

B. 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., [0380]-[0381].

C. Combinations of Sheha-Darling-Futagami with De-Vries, Froeberg, Bechtolsheim, Degnbol, Wollrab, Obradovich, Boling, Smith

De-Vries: POSAs would have been motivated by De-Vries's teachings (*supra* §VII.A, §VII.G) to provide notifications via Sheha's wireless devices in Sheha-Darling-Futagami (*supra* §VIII.B) when other users of interest are nearby, and to allow users to set rules/parameters for receiving notifications and to define what granularity of their location is disclosed to particular other device users, to better enable compatible mobile-device users to identify and navigate to each other. Williams-Decl., [0382]. POSAs would have reasonably expected success based on De-Vries's teachings of successfully implementing such functionality in a system like Sheha's, where wireless-device users access each other's locations. Williams-Decl., [0383].

Froeberg: POSAs would have been motivated to implement Sheha-Darling-Futagami's server to generate and transmit the directions that Sheha discloses (*infra* §IX.D.2 (claim 49)) in view of Froeberg's teachings (*supra* §VII.B, §VII.G) that doing so allows storage and/or processing requirements to be implemented server-side, reducing such requirements locally at the mobile device. Froeberg, FIGs. 4-5, 4:27-6:20, 7:5-22; Williams-Decl., [0384]. 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 that provide their GPS locations. Froeberg, 1:6-10, 3:46-52; Williams-Decl., [0384].

Bechtolsheim: POSAs would have been motivated and reasonably expected success to incorporate into Sheha-Darling-Futagami (with or without Froeberg) Bechtolsheim's techniques discussed *supra* §VII.C, §VII.G, as both Sheha and Bechtolsheim (and Froeberg) provide travel directions to a mobile user device, usable while driving and/or walking. Williams-Decl., [0385].

Degnbol: POSAs would have been motivated to incorporate various location-based tracking and alert functionality from Degnbol to more effectively share location data in Sheha's system, which also provides location-related notifications. *See, e.g.*, Sheha, 11:40-51, FIG. 4; Williams-Decl., [0386]. POSAs would have reasonably expected success because Sheha's system identifies and shares location information and Degnbol's techniques would easily be applied using Sheha's hardware with minor software modifications. Williams-Decl., [0386].

Wollrab: POSAs would have been motivated to enhance Sheha-Darling-Futagami by incorporating Wollrab's teachings discussed *supra* §VII.E, to store historical location-tracking records to help trace where a device has been and

locate a device whose tracking has been lost. Wollrab, 3:21-27, 4:40-58; Williams-Decl., [0387]-[0389] (citing corroborating EX1012 (“Ganesh”), 7:3-20, 1:43-55); *see supra* §VII.G. POSAs would have reasonably expected success given that Sheha’s ODAS receives, stores, and provides updates of a target wireless device’s location as discussed *supra* §VIII.A, §VIII.C.1. Williams-Decl., [0390].

Obradovich: POSAs would have been motivated and reasonably expected success, based on Obradovich’s teachings, to implement Sheha’s Internet-connected server (ODAS) in Sheha-Darling-Futagami to function as a “home site” into which a user requesting another user’s location inputs “an identifier” and “password,” and to utilize a user’s location to validate credit requests. Obradovich, 26:13-56, 4:62-65, 24:50-25:30; Williams-Decl., [0391].

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-Darling-Futagami. Williams-Decl., [0392].

Smith: POSAs would have been motivated and reasonably expected success to include in Sheha-Darling-Futagami’s wireless devices conventional contact-list

functionality as in Smith, because such functionalities were routine and typical in wireless devices. Williams-Decl., [0393].

D. Mapping to Challenged Claims

1. Claims 48, 51-52, 56-57, 60, 64-66

Claims 48, 51-52, 56-57, 60, and 64-66 are obvious over Sheha-Darling-Futagami-De-Vries based on De-Vries's teachings discussed *supra* §VII.H.1, §§VII.H.4-VII.H.7. Williams-Decl., [0395]-[0424].

2. Claim 49

Claim 49 is obvious over Sheha-Darling-Futagami or Sheha-Darling-Futagami-Froeberg.

Sheha discloses using a target mobile device's location "to obtain driving *directions* to that device" on a requesting device. Sheha, 5:21-34. "ODAS 3 periodically updates each mobile device with the other's position information, thus *providing* real-time driving *directions* and route information." Sheha, 11:44-51, FIG. 5 (directions 35 along route 29 annotated below); Williams-Decl., [0425]-[0427].

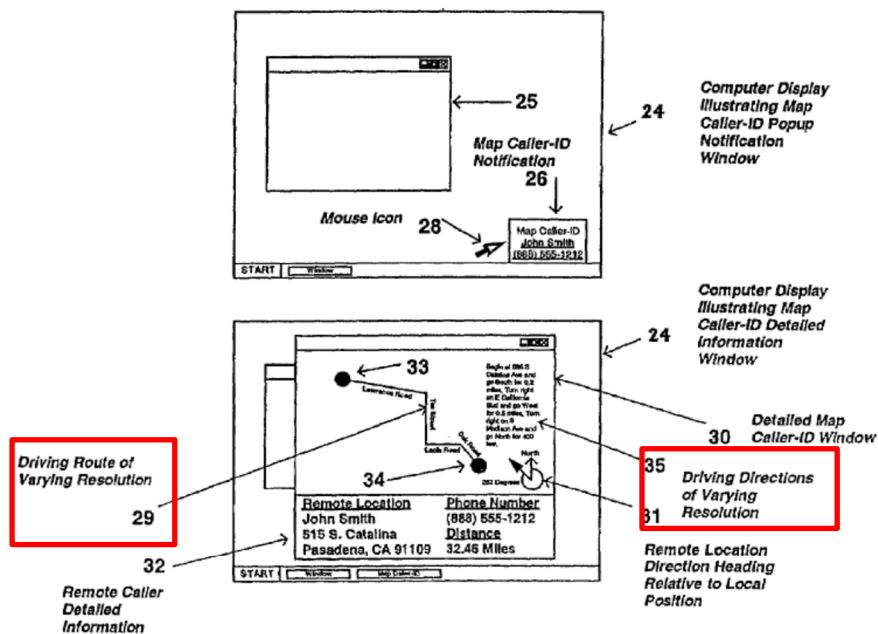


FIG. 5

Generating the *directions* at the ODAS and transmitting them to the *second wireless device* would have been obvious to, e.g., reduce storage and/or processing requirements at the mobile device. Williams-Decl., [0428]-[0435] (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, as discussed *supra* §IX.C, POSAs would have been motivated to implement Sheha’s ODAS to generate and transmit the claimed *directions* by Froeberg’s teachings that doing so can reduce storage and/or processing

requirements at the mobile device, as discussed *supra* §VII.H.2. Froeberg, FIGs. 4-5, 4:27-6:20, 7:5-22; Williams-Decl., [0431].

3. Claim 50

Claim 50 is obvious over Sheha-Darling-Futagami-Froeberg or Sheha-Darling-Futagami-Bechtolsheim.

It would have been obvious background knowledge for Sheha-Darling-Futagami-Froeberg's system that provides driving directions (*supra* §IX.D.2 (claim 49)) to *provide* "an estimated ***time*** to reach the final destination" (*said location*). Williams-Decl., [0436]-[0437] (quoting EX1025 ("Wako"), 2:12-34 ("BACKGROUND" section), FIGs. 1B, 7, 9:8-22; citing corroborating EX1041 ("Tobin"), [0028], FIG. 1C; EX1043 ("Obradovich"), 2:60-63, 8:18-22, 22:47-65, FIG. 47; EX1067 ("Mura-Smith"), 9:12-14, 7:40-56, 8:45-57, FIG. 8B). It would have been obvious to generate this information server-side to reduce storage and/or processing requirements at the wireless device, for the reasons discussed *supra* §IX.D.2 (claim 49). Williams-Decl., [0437].

Further, Bechtolsheim teaches the *remote system providing to the wireless device a travel time to the destination*, as discussed *infra* §IX.D.11 (claim 77). Williams-Decl., [0438]-[0439].

4. Claim 67

Claim 67 is obvious over Sheha-Darling-Futagami-Degnbol, which incorporates Degnbol's teachings to implement Sheha's *remote system to transmit an alert* to "inform[]" a user at his *first wireless device* "that he has been the subject of an alert to another user" (e.g., when the *second wireless device* user *locates* his *first wireless device* by being informed that his location is nearby). Degnbol, 21:4-6, 18:27-31; Williams-Decl., [0440]. It would alternatively have been obvious to *transmit an alert* whenever another user requests to access the *first wireless device's* location, as this was a known useful option. Williams-Decl., [0441]-[0442] (citing corroborating EX1071 ("Rice"), 9:26-51, 7:40-49, 12:20-33); *supra* §VII.H.8.

5. Claims 68-69

Claims 68-69 are obvious over Sheha-Darling-Futagami-Wollrab based on Wollrab's teachings discussed *supra* §§VII.H.9-VII.H.10. Williams-Decl., [0443]-[0446].

6. Claim 70

Claim 70 is obvious over Sheha-Darling-Futagami-Obradovich. Sheha's *remote system provides said location after* the requesting user *inputs* their *login and password* to the ODAS, as discussed *supra* §VIII.C.4 (claim 53). Obradovich teaches that an Internet server (like Sheha's ODAS) can function as a target device's "home site," into which the requesting user inputs "an identifier" and

“password” for accessing the target user’s information. Obradovich, 26:13-56.

Thus, POSAs would have found it obvious to accept the *second wireless device* user’s *login and password as input into a website* when the user is *utilizing another device*. Williams-Decl., [0447]-[0448]. Doing so was well-known for accessing other users’ location information. Williams-Decl., [0448]-[0452] (citing corroborating EX1012 (“Ganesh”), 5:1-6:14; EX1019 (“Thomas”), 5:49-57, 6:53-7:33, FIG. 6).

7. Claim 71

Claim 71 is obvious over Sheha-Darling-Futagami-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., [0453]. In light of Sheha’s ODAS *storing and transmitting the location of* various communication devices like those Degnbol lists (Sheha, 9:50-53), it would have been obvious to *store and transmit* any suitable device’s *location*, including *a watch*. Williams-Decl., [0453]-[0454].

8. Claim 72

Claim 72 is obvious over Sheha-Darling-Futagami-Degnbol. Degnbol teaches that the *watch* discussed *supra* §IX.D.7 (claim 71) is “[a] unit in the set” of “*communication* units” whose “position” is determined by “GPS,” etc. Degnbol,

4:1-5:11, 6:22-7:30. Such GPS-enabled (Global *Positioning System*) mobile communication devices calculate and communicate their positions to Sheha's *remote system* (ODAS) over said communications network. Sheha, 10:1-16, 11:12-51; Williams-Decl., [0455]-[0456].

9. Claim 74

Claim 74 is obvious over Sheha-Darling-Futagami-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* §IX.A; Williams-Decl., [0457]-[0458] (citing corroborating EX1076 (“Lelievre”), Abstract, [0047], FIG. 5). In light of Sheha's *remote system storing and transmitting* various mobile devices' *locations* (Sheha, 12:58-60, 19:41-46, 12:1-7), it would have been obvious to *store and transmit* any suitable mobile device's *location*, such as a *radio* per Boling. Williams-Decl., [0458]-[0459].

10. Claim 76

Claim 76 is obvious over Sheha-Darling-Futagami-Obradovich based on Obradovich's teachings discussed *supra* §VII.H.13, used to “make use of [Sheha's] location monitoring capability” in “determining the validity of credit requests.” Obradovich, 24:51-54; Williams-Decl., [0460]-[0462].

11. Claim 77

Claim 77 is obvious over Sheha-Darling-Futagami-Bechtolsheim or Sheha-Darling-Futagami-Froeberg-Bechtolsheim, based on Bechtolsheim's teachings discussed *supra* §VII.H.14. Williams-Decl., [0463]-[0464].

12. Claim 78

Claim 78 is obvious over Sheha-Darling-Futagami-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. It would therefore have been obvious to allow the *second wireless telephone user* to *download* from the *remote system a phone book corresponding to the user*—i.e., a set of EBCs/CLIDs to create the user's contact list—including when the user wishes to import their existing contacts to *a new wireless telephone*. Williams-Decl., [0465]-[0471] (citing corroborating EX1007 (“Randall”), [0046], [0062], [0127]-[0129]; EX1069 (“Song”), 14:31-16:55).

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.⁵ 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. EX1038 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.

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).

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

“Petitioner’s reliance on [an] earlier-filed” IPR, “even as a menu and roadmap, is not sufficient to create a significant relationship that favors denial.” *Id.* at 5.

This Petition and those concurrently challenging other ’024 patent claims are “the first filed by Petitioner[s] against the” ’024 patent. *Id.* Petitioners have “different allegedly infringing products and in different district court proceedings” than Apple (petitioner in prior IPR2023-00149), have not coordinated with Apple regarding the ’024 patent, and thus have no “significant relationship” with Apple. *Ford Motor Co. v. Neo Wireless LLC*, IPR2023-00763, Paper 28 at 7, 10 (Mar. 22, 2024) (director review).

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

Discretionary denial “is not justified.” *Videndum* at 7.

B. Section 325(d)

Of the references combined in this Petition’s grounds, only De-Vries was of record during prosecution of the ’024 patent, and was not applied in any rejection or considered in combination with Randall or Sheha. Ganesh, Friedman, 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.

The Board considered Sheha, Bechtolsheim, Degnbol, and Obradovich in IPR2023-00149, but not in combination with Darling or Futagami, which teach the features the Board found missing. *See BMW of North America, LLC v. Michigan Motor Techs. LLC*, IPR2023-01031, Paper 12 at 13-14 (Jan. 23, 2024) (granting institution).

Furthermore, Grounds 1-2 based on Randall, which was not of record in prosecution or IPR2023-00149, warrant institution regardless of the status of Sheha-based Grounds 3-4. *Current Lighting Sols., LLC v. Jiaxing Super Lighting Electric Appliance Co., Ltd.*, IPR2023-00270, Paper 18 at 51 (Aug. 16, 2023).

XI. CONCLUSION

The Board should institute review and cancel claims 45-78.

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 13,996 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., [45A], [45B], etc.) to certain claim elements for ease of reference.

Claim 45
[45PRE] A system comprising:
[45A] a remote system comprising a server, the remote system capable of communicating with a first wireless device and a second wireless device over a communications network and further capable of:
[45B] receiving a request for a location of said first wireless device from said second wireless device;
[45C] determining that said second wireless device does not have location access rights for said first wireless device;
[45D] after determining that said second wireless device does not have said location access rights for said first wireless device, receiving a request from said second wireless device that said location access rights be assigned for said second wireless device by said first wireless device;
[45E] receiving from said first wireless device an assignment of said location access rights for said first wireless device to said second wireless device;
[45F] storing said location access rights; and
[45G] providing said location to said second wireless device dependent upon said location access rights.
Claim 46
The system of claim 45, wherein said first wireless device and said second wireless device are cellular phones.
Claim 47
The system of claim 45, wherein said location access rights include the ability to obtain said location, wherein said location is provided to said second wireless device from said server even when said first wireless device is off.
Claim 48
The system of claim 45, wherein said location access rights comprise a plurality of access levels.

Claim 49

The system of claim 45, wherein said remote system is further capable of providing to said second wireless device directions from a location of said second wireless device to said location of said first wireless device.

Claim 50

The system of claim 45, wherein said remote system is further capable of providing to said second wireless device a travel time to said location.

Claim 51

The system of claim 45, wherein said location access rights comprise a plurality of levels of access rights, at least one of said plurality of levels of access rights comprise the exact location of said first wireless device, and another one of said plurality of levels of access rights comprise an approximate location of said first wireless device.

Claim 52

The system of claim 45, wherein said access rights comprise a plurality of levels of access rights, at least one of said plurality of levels of access rights comprise an approximate location of said first wireless device, and said approximate location comprises a city or state.

Claim 53

The system of claim 45, wherein said remote system is further capable of receiving a login and password from said second wireless device to identify a user of said second wireless device.

Claim 54

The system of claim 45, wherein said remote system is further capable of: receiving a request from said first wireless device to modify said location access rights for said second wireless device; and modifying said location access rights for said second wireless device based on said request.

Claim 55

The system of claim 45, wherein said remote system is further capable of: receiving a request from said first wireless device to delete said location access rights for said second wireless device; and deleting said location access rights for said second wireless device based on said request.

Claim 56

The system of claim 45, wherein said remote system is further capable of filtering information about said location such that only a portion of location information associated with said location is transmitted to said second wireless device.

Claim 57

The system of claim 45, wherein said remote system is further capable of alerting said second wireless device when said first wireless device is within a distance of second wireless device.

Claim 58

The system of claim 45, wherein said remote system is further capable of: receiving a request for a second location of said first wireless device from a non-wireless device, wherein said non-wireless device does not comprise a positioning system; and providing said second location of said first wireless device to said non-wireless device in response to said request.

Claim 59

The system of claim 45, wherein said remote system is further capable of receiving said location of said first wireless device from a positioning system of said first wireless device.

Claim 60

The system of claim 45, wherein said remote system is further capable of setting at least one location alert associated with said first wireless device for a user associated with said second wireless device in response to a request from said second wireless device.

Claim 61

The system of claim 45, wherein said storing said location access rights comprises storing location access rights that allow a user of said second wireless device to access said location of said first wireless device for an indefinite period of time.

Claim 62

The system of claim 45, wherein said storing said location access rights comprises storing location access rights that allow a user of said second wireless device to access said location of said first wireless device for only a specific period of time.

Claim 63

The system of claim 62, wherein said remote system is further capable of receiving an indication of said specific period of time from said first wireless device.

Claim 64

The system of claim 45, wherein said remote system is further capable of transmitting an alert to said second wireless device based on said location of said first wireless device.

Claim 65

The system of claim 64, wherein said remote system is further capable of receiving a request for said alert from said second wireless device.

Claim 66

The system of claim 65, wherein said alert is geographic area-based and said remote system is further capable of alerting said second wireless device when said location of said first wireless device is within a geographic area specified by said second wireless device.

Claim 67

The system of claim 45, wherein said remote system is further capable of transmitting an alert to said first wireless device when said second wireless device locates said first wireless device.

Claim 68

The system of claim 45, wherein said remote system is further capable of storing a history of locations of said first wireless device.

Claim 69

The system of claim 68, wherein said providing said location to said second wireless device comprises providing to said second wireless device a location from said history of locations when said first wireless device is turned off.

Claim 70

The system of claim 45, wherein said remote system is further capable of providing said location to another device utilized by a user of said second wireless device after said user utilizes said another device to input a login and password for said user into a website.

Claim 71

The system of claim 45, wherein said remote system is further capable of storing and transmitting to said second wireless device a location of a watch.

Claim 72

The system of claim 71, wherein said remote system is capable of communicating with said watch over said communications network to obtain said location of said watch from a positioning system of said watch.

Claim 73

The system of claim 45, wherein said remote system is further capable of storing and transmitting to said second wireless device a location of a personal computer.

Claim 74

The system of claim 45, wherein said remote system is further capable of storing and transmitting to said second wireless device a location of a radio.

Claim 75

The system of claim 45, wherein said remote system is further capable of storing and transmitting to said second wireless device a location of a car.

Claim 76

The system of claim 45, wherein said remote system is further capable of providing said location of said first wireless device to a credit card authorization system.

Claim 77

The system of claim 45, wherein said remote system is further capable of providing to said second wireless device information indicating time to reach said location of said first wireless device from a second location of said second wireless device according to at least two types of travel selected from the types of travel consisting of subway, walking, running, and driving.

Claim 78

The system of claim 45, wherein said remote system is further capable of: storing a phone book corresponding to a user of said second wireless telephone; and downloading said phone book to a new wireless telephone of said user.