

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. IPR2025-00227
Patent No. 9,635,540

DECLARATION OF DAVID H. WILLIAMS

Google Exhibit 1003 Google v Mullen IPR2025-00227

TABLE OF CONTENTS (CONDENSED)

I.	PERSONAL AND PROFESSIONAL BACKGROUND	1
II.	MATERIALS REVIEWED AND CONSIDERED	11
III.	MY UNDERSTANDING OF PATENT LAW	12
	A. Anticipation	14
	B. Obviousness.....	15
IV.	PERSON OF ORDINARY SKILL IN THE ART (“POSA”).....	18
V.	THE ’540 PATENT	20
	A. Specification Embodiments.....	20
	B. Prosecution History of the ’540 Patent.....	23
	C. The Challenged Claims	24
VI.	CLAIM INTERPRETATION	24
VII.	PRIOR-ART REFERENCES	25
	A. Background on Motivation to Combine and Reasonable Expectation of Success in Combining Prior Art	25
	B. Sheha (EX1005)	30
	C. Randall (EX1007).....	42
	D. Darling (EX1022).....	45
	E. Futagami (EX1030)	45
	F. Ryden (EX1009).....	46
	G. Wollrab (EX1014)	55
	H. De-Vries (EX1013).....	55
	I. Wako (EX1025).....	56
	J. Smith (EX1023).....	56
VIII.	THE CHALLENGED CLAIMS ARE UNPATENTABLE IN LIGHT OF THE PRIOR ART.....	57
	A. Ground 1: Claim 1-3, 5, 11-16, 19-24, 29, and 33-35 are Unpatentable Over Randall in view of Darling and Futagami.....	58
	1. Discussion of Randall (EX1007-EX1008).....	58
	2. Discussion of Darling (EX1022).....	62

3. Discussion of Futagami (EX1030).....	63
4. Discussion of Randall-Darling-Futagami Combination	64
5. Mapping of Randall-Darling-Futagami Combination to Claim 1-3, 5, 11-16, 19-24, 29, and 33-35.....	71
B. Ground 2: Claims 3 and 8 are Unpatentable over Randall-Darling- Futagami in view of Ryden	133
1. Discussion of Ryden (EX1009).....	133
2. Discussion of Randall-Darling-Futagami-Ryden Combination.....	135
3. Mapping of Randall-Darling-Futagami-Ryden-Ganesh-Wollrab to Claims 3, 8, and 31-32	136
C. Ground 3: Claims 4, 9-10, 17-18, 28, 30 are Unpatentable over Randall in view of Darling, Futagami, and De-Vries	139
1. Discussion of De-Vries (EX1013)	139
2. Discussion of Randall-Darling-Futagami-De-Vries Combination	140
3. Mapping of Randall-Darling-Futagami-De-Vries to Claims 4, 9-10, 17-18, 28, and 30	141
D. Ground 4: Claims 6-7 and 25-27 are Unpatentable over Randall in view of Darling, Futagami, and Wako	146
1. Discussion of Wako (EX1025)	147
2. Discussion of Randall-Darling-Futagami-Wako Combination	148
3. Mapping of Randall-Darling-Futagami-Wako to Claims 6-7 and 25-27.....	151
E. Ground 5: Claims 31 and 32 are Unpatentable over Randall in view of Darling, Futagami, and Wollrab	159
1. Discussion of Wollrab (EX1014).....	159
2. Discussion of the Randall-Darling-Wollrab Combination.....	160
3. Mapping of Randall-Darling-Futagami-Wollrab to Claims 31- 32	162
F. Ground 6: Claims 1-3, 5-6, 11-16, 22-26, 29, and 33-35 are Unptatentable over Sheha in view of Darling and Futagami	166
1. Discussion of Sheha (EX1005)	167

2. Discussion of Sheha-Darling-Futagami Combination	170
3. Mapping of Sheha-Darling-Futagami to Claims 1-3, 5-6, 11-16, 22-26, 29, and 33-35	172
G. Ground 7: Claims 3, 7-8, and 27 are Unpatentable over Sheha in view of Darling, Futagami, and Ryden	204
1. Discussion of Sheha-Darling-Futagami-Ryden Combination	204
2. Mapping of Sheha-Darling-Futagami-Ryden to Claims 3, 7-8, 27, and 31-32	205
H. Ground 8: Claims 4, 9-10, 17-18, 28, and 30 are Unpatentable over Sheha in view of Darling, Futagami, and De-Vries	208
1. Discussion of Sheha-Darling-Futagami-De-Vries Combination	209
2. Mapping of Sheha-Darling-Futagami-De-Vries to Claims 4, 9- 10, 17-18, 28, and 30	210
I. Ground 9: Claims 19-21 are Unpatentable over Sheha in view of Darling, Futagami, and Smith	214
1. Smith (EX1023)	214
2. Discussion of Sheha-Darling-Futagami-Smith Combination	215
3. Mapping of Sheha-Darling-Futagami-Smith Combination to Claims 19-21	216
J. Ground 10: Claims 31 and 32 are Unpatentable over Sheha in view of Darling, Futagami, and Wollrab	220
1. Discussion of Sheha-Darling-Futagami-Wollrab Combination	220
2. Mapping of Sheha-Darling-Futagami-Wollrab to Claims 31-32	221
IX. APPENDIX: CLAIM LISTING	223

TABLE OF CONTENTS (FULL)

I.	PERSONAL AND PROFESSIONAL BACKGROUND	1
II.	MATERIALS REVIEWED AND CONSIDERED	11
III.	MY UNDERSTANDING OF PATENT LAW	12
	A. Anticipation	14
	B. Obviousness.....	15
IV.	PERSON OF ORDINARY SKILL IN THE ART (“POSA”).....	18
V.	THE ’540 PATENT	20
	A. Specification Embodiments.....	20
	B. Prosecution History of the ’540 Patent.....	23
	C. The Challenged Claims	24
VI.	CLAIM INTERPRETATION	24
VII.	PRIOR-ART REFERENCES	25
	A. Background on Motivation to Combine and Reasonable Expectation of Success in Combining Prior Art	25
	B. Sheha (EX1005)	30
	C. Randall (EX1007).....	42
	D. Darling (EX1022).....	45
	E. Futagami (EX1030)	45
	F. Ryden (EX1009).....	46
	G. Wollrab (EX1014)	55
	H. De-Vries (EX1013).....	55
	I. Wako (EX1025).....	56
	J. Smith (EX1023).....	56
VIII.	THE CHALLENGED CLAIMS ARE UNPATENTABLE IN LIGHT OF THE PRIOR ART.....	57
	A. <u>Ground 1</u> : Claim 1-3, 5, 11-16, 19-24, 29, and 33-35 are Unpatentable Over Randall in view of Darling and Futagami.....	58
	1. Discussion of Randall (EX1007-EX1008).....	58

2. Discussion of Darling (EX1022).....	62
3. Discussion of Futagami (EX1030).....	63
4. Discussion of Randall-Darling-Futagami Combination	64
5. Mapping of Randall-Darling-Futagami Combination to Claim 1-3, 5, 11-16, 19-24, 29, and 33-35.....	71
a. Claim 1	71
i. Preamble [1PRE]: A method of mobile-to-mobile locating, said method comprising:	71
ii. Element [1A]: requesting a location of a first wireless device by a second wireless device from a server located remotely from said first and second wireless devices;	72
iii. Element [1B]: determining that said second wireless device does not have location access rights for said first wireless device;	76
iv. Element [1C]: asking said second wireless device if said location access rights are to be requested from said first wireless device after determining that said second wireless device does not have said location access rights for said first wireless device;.....	80
v. Element [1D]: requesting that said location access rights be assigned for said second wireless device by said first wireless device;.....	84
vi. Element [1E]: assigning said location access rights on said server to said second wireless device by said first wireless device;.....	87
vii. Element [1F]: storing said location access rights on said server;	91
viii. Element [1G]: determining said access rights assigned by said first wireless device to said second wireless device on said server; and.....	95
ix. Element [1H]: providing said location from said server to said second wireless device dependent upon said access rights.....	96

b. Claim 2: The method of claim 1, wherein said first and second wireless devices are cellular phones.	100
c. Claim 3: The method of claim 1, 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.	100
d. Claim 5: The method of claim 1, wherein said location is used to provide a location marker on a map on said second wireless device.	101
e. Claim 11: The method of claim 1, further comprising requesting said location of said first wireless device by a non-wireless device.	104
f. Claim 12: The method of claim 1, further comprising obtaining a second location from a non-wireless device.	106
g. Claim 13: The method of claim 1, further comprising receiving a login and password from said second wireless device to identify said second wireless device.	106
h. Claim 14: The method of claim 1, wherein said location of said first wireless device is requested by receiving input, in the form of a telephone number of said first wireless device, on said second wireless device.	108
i. Claim 15: The method of claim 1, further comprising using said first wireless device to modify said location access rights for said second wireless device.	109
j. Claim 16: The method of claim 1, further comprising the ability to use said first wireless device to delete said location access rights for said second wireless device.	110
k. Claim 19: The method of claim 1, further comprising selecting said first wireless device from an identifier list.	111
l. Claim 20: The method of claim 1, further comprising selecting said first wireless device from an identifier list wherein said identifier list comprises a list of telephone numbers.	118

m.	Claim 21: The method of claim 1, further comprising selecting said first wireless device from an identifier list wherein said identifier list comprises a list of user profiles.	119
n.	Claim 22: The method of claim 1, further comprising requesting a second location from said first wireless device from a non-wireless device, wherein said non-wireless device does not comprise a positioning system.	120
o.	Claim 23: The method of claim 1, wherein said location is provided by a positioning system.	121
p.	Claim 24	122
i.	Preamble [24PRE]: The method of claim 1, further comprising:	122
ii.	Element [24A]: providing a first dating matching profile by said first wireless device;	122
iii.	Element [24B]: providing a second dating matching profile by said second wireless device;	123
iv.	Element [24C]: obtaining a second location, wherein said second location is the location of said second wireless device; and	123
v.	Element [24D]: utilizing said location, said second location, said first dating matching profile, and said second dating matching profile to provide an alert.	124
q.	Claim 29: The method of claim 1, wherein said location access rights are only assigned for a period of time.	125
r.	Claim 33: The method of claim 1, further comprising displaying on said second wireless device the opportunity to request said location access rights from said first wireless device.	126
s.	Claim 34: The method of claim 1, wherein said first wireless device is requested to manually allow said location access rights for said second wireless device every time said second wireless device requests said location.	129

t. Claim 35: The method of claim 1, wherein one of said location access rights is the ability to not allow said second wireless device to access said location.	133
B. <u>Ground 2</u> : Claims 3 and 8 are Unpatentable over Randall-Darling-Futagami in view of Ryden	133
1. Discussion of Ryden (EX1009).....	133
2. Discussion of Randall-Darling-Futagami-Ryden Combination.....	135
3. Mapping of Randall-Darling-Futagami-Ryden-Ganesh-Wollrab to Claims 3, 8, and 31-32	136
a. Claim 3: The method of claim 1, 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.	136
b. Claim 8: The method of claim 1, further comprising requesting a second location of said first wireless device and using said location and said second location to determine how fast said first wireless device is traveling.	137
C. <u>Ground 3</u> : Claims 4, 9-10, 17-18, 28, 30 are Unpatentable over Randall in view of Darling, Futagami, and De-Vries	139
1. Discussion of De-Vries (EX1013)	139
2. Discussion of Randall-Darling-Futagami-De-Vries Combination	140
3. Mapping of Randall-Darling-Futagami-De-Vries to Claims 4, 9-10, 17-18, 28, and 30	141
a. Claim 4: The method of claim 1, wherein said location access rights comprise a plurality of access levels.	141
b. Claim 9: The method of claim 1, 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.	142

c. Claim 10: The method of claim 1, 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.	143
d. Claim 17: The method of claim 1, further comprising filtering information about said location such that only a portion of the information is passed to said second wireless device.	143
e. Claim 18: The method of claim 1, further comprising alerting said second wireless device when said first wireless device is within a distance of second wireless device.	144
f. Claim 28: The method of claim 1, further comprising setting location alerts associated with said first wireless device on said second wireless device.	145
g. Claim 30: The method of claim 1, further comprising alerting said second wireless device when said first wireless device enters a geographic area.	146
D. <u>Ground 4</u> : Claims 6-7 and 25-27 are Unpatentable over Randall in view of Darling, Futagami, and Wako	146
1. Discussion of Wako (EX1025)	147
2. Discussion of Randall-Darling-Futagami-Wako Combination	148
3. Mapping of Randall-Darling-Futagami-Wako to Claims 6-7 and 25-27	151
a. Claim 6: The method of claim 1, wherein said location is used to provide directions from said second wireless device to said location on said second wireless device.	151
b. Claim 7: The method of claim 1, wherein said location is used to provide directions from said second wireless device to said location and a travel time on said second wireless device.	151
c. Claim 25: The method of claim 1, further comprising providing a compass in said second wireless device.	152

d.	Claim 26: The method of claim 1, wherein a directional arrow is utilized to display the location of said first wireless device relative to said location of said second wireless device on said second wireless device.....	155
e.	Claim 27: The method of claim 1, further comprising providing a compass in said second wireless device, wherein said compass is utilized to display the direction that said second wireless device is traveling in.	158
E.	<u>Ground 5</u> : Claims 31 and 32 are Unpatentable over Randall in view of Darling, Futagami, and Wollrab	159
1.	Discussion of Wollrab (EX1014).....	159
2.	Discussion of the Randall-Darling-Wollrab Combination.....	160
3.	Mapping of Randall-Darling-Futagami-Wollrab to Claims 31-32	162
a.	Claim 31: The method of claim 1, wherein said server stores a history of locations for said first wireless device.	162
b.	Claim 32: The method of claim 1, wherein said server stores a history of locations for said first wireless device and said history is utilized to provide an approximate location of said first wireless device when said first wireless device is turned OFF.....	164
F.	<u>Ground 6</u> : Claims 1-3, 5-6, 11-16, 22-26, 29, and 33-35 are Unpatentable over Sheha in view of Darling and Futagami	166
1.	Discussion of Sheha (EX1005)	167
2.	Discussion of Sheha-Darling-Futagami Combination	170
3.	Mapping of Sheha-Darling-Futagami to Claims 1-3, 5-6, 11-16, 22-26, 29, and 33-35	172
a.	Claim 1	173
i.	Preamble [1PRE]: A method of mobile-to-mobile locating, said method comprising:.....	173
ii.	Element [1A]: requesting a location of a first wireless device by a second wireless device from a server located remotely from said first and second wireless devices;	173

iii. Element [1B]: determining that said second wireless device does not have location access rights for said first wireless device;	175
iv. Element [1C]: asking said second wireless device if said location access rights are to be requested from said first wireless device after determining that said second wireless device does not have said location access rights for said first wireless device;.....	182
v. Element [1D]: requesting that said location access rights be assigned for said second wireless device by said first wireless device;.....	183
vi. Element [1E]: assigning said location access rights on said server to said second wireless device by said first wireless device;.....	184
vii. Element [1F]: storing said location access rights on said server;	184
viii. Element [1G]: determining said access rights assigned by said first wireless device to said second wireless device on said server; and.....	188
ix. Element [1H]: providing said location from said server to said second wireless device dependent upon said access rights.....	189
b. Claim 2: The method of claim 1, wherein said first and second wireless devices are cellular phones.	190
c. Claim 3: The method of claim 1, 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.	190
d. Claim 5: The method of claim 1, wherein said location is used to provide a location marker on a map on said second wireless device.	191
e. Claim 6: The method of claim 1, wherein said location is used to provide directions from said second wireless device to said location on said second wireless device.	194

f.	Claim 11: The method of claim 1, further comprising requesting said location of said first wireless device by a non-wireless device.....	195
g.	Claim 12: The method of claim 1, further comprising obtaining a second location from a non-wireless device.	196
h.	Claim 13: The method of claim 1, further comprising receiving a login and password from said second wireless device to identify said second wireless device.	196
i.	Claim 14: The method of claim 1, wherein said location of said first wireless device is requested by receiving input, in the form of a telephone number of said first wireless device, on said second wireless device.	197
j.	Claim 15: The method of claim 1, further comprising using said first wireless device to modify said location access rights for said second wireless device.	197
k.	Claim 16: The method of claim 1, further comprising the ability to use said first wireless device to delete said location access rights for said second wireless device.	198
l.	Claim 22: The method of claim 1, further comprising requesting a second location from said first wireless device from a non-wireless device, wherein said non-wireless device does not comprise a positioning system.....	198
m.	Claim 23: The method of claim 1, wherein said location is provided by a positioning system.	199
n.	Claim 24: The method of claim 1, further comprising: providing a first dating matching profile by said first wireless device; providing a second dating matching profile by said second wireless device; obtaining a second location, wherein said second location is the location of said second wireless device; and utilizing said location, said second location, said first dating matching profile, and said second dating matching profile to provide an alert.....	199
o.	Claim 25: The method of claim 1, further comprising providing a compass in said second wireless device.	199

p.	Claim 26: The method of claim 1, wherein a directional arrow is utilized to display the location of said first wireless device relative to said location of said second wireless device on said second wireless device.....	201
q.	Claim 29: The method of claim 1, wherein said location access rights are only assigned for a period of time.	202
r.	Claim 33: The method of claim 1, further comprising displaying on said second wireless device the opportunity to request said location access rights from said first wireless device.	202
s.	Claim 34: The method of claim 1, wherein said first wireless device is requested to manually allow said location access rights for said second wireless device every time said second wireless device requests said location.	203
t.	Claim 35: The method of claim 1, wherein one of said location access rights is the ability to not allow said second wireless device to access said location.	203
G.	<u>Ground 7</u> : Claims 3, 7-8, and 27 are Unpatentable over Sheha in view of Darling, Futagami, and Ryden	204
1.	Discussion of Sheha-Darling-Futagami-Ryden Combination	204
2.	Mapping of Sheha-Darling-Futagami-Ryden to Claims 3, 7-8, 27, and 31-32	205
a.	Claim 3: The method of claim 1, 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.	205
b.	Claim 7: The method of claim 1, wherein said location is used to provide directions from said second wireless device to said location and a travel time on said second wireless device.	206
c.	Claim 8: The method of claim 1, further comprising requesting a second location of said first wireless device and using said location and said second location to determine how fast said first wireless device is traveling.	207

d. Claim 27: The method of claim 1, further comprising providing a compass in said second wireless device, wherein said compass is utilized to display the direction that said second wireless device is traveling in.	208
H. <u>Ground 8</u> : Claims 4, 9-10, 17-18, 28, and 30 are Unpatentable over Sheha in view of Darling, Futagami, and De-Vries	208
1. Discussion of Sheha-Darling-Futagami-De-Vries Combination	209
2. Mapping of Sheha-Darling-Futagami-De-Vries to Claims 4, 9-10, 17-18, 28, and 30	210
a. Claim 4: The method of claim 1, wherein said location access rights comprise a plurality of access levels.	210
b. Claim 9: The method of claim 1, 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.	211
c. Claim 10: The method of claim 1, 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.	211
d. Claim 17: The method of claim 1, further comprising filtering information about said location such that only a portion of the information is passed to said second wireless device.	212
e. Claim 18: The method of claim 1, further comprising alerting said second wireless device when said first wireless device is within a distance of second wireless device.	212
f. Claim 28: The method of claim 1, further comprising setting location alerts associated with said first wireless device on said second wireless device.	213

g.	Claim 30: The method of claim 1, further comprising alerting said second wireless device when said first wireless device enters a geographic area.	214
I.	<u>Ground 9:</u> Claims 19-21 are Unpatentable over Sheha in view of Darling, Futagami, and Smith	214
1.	Smith (EX1023)	214
2.	Discussion of Sheha-Darling-Futagami-Smith Combination	215
3.	Mapping of Sheha-Darling-Futagami-Smith Combination to Claims 19-21	216
a.	Claim 19: The method of claim 1, further comprising selecting said first wireless device from an identifier list.....	216
b.	Claim 20: The method of claim 1, further comprising selecting said first wireless device from an identifier list wherein said identifier list comprises a list of telephone numbers.	218
c.	Claim 21: The method of claim 1, further comprising selecting said first wireless device from an identifier list wherein said identifier list comprises a list of user profiles.	219
J.	<u>Ground 10:</u> Claims 31 and 32 are Unpatentable over Sheha in view of Darling, Futagami, and Wollrab	220
1.	Discussion of Sheha-Darling-Futagami-Wollrab Combination.....	220
2.	Mapping of Sheha-Darling-Futagami-Wollrab to Claims 31-32	221
IX.	APPENDIX: CLAIM LISTING	223

I, David H. Williams, declare:

[0001] I have been retained by Wolf, Greenfield & Sacks, P.C., counsel for Petitioner Google LLC, to assess claims 1-19 (the “challenged claims”) of U.S. Patent No. 9,635,540 (“the ’540 patent”) (EX1001). I am being compensated for my time at my standard rate of \$485.00 per hour, plus actual expenses. My compensation is not dependent in any way upon any outcome in the *inter partes* review of the ’540 patent.

I. PERSONAL AND PROFESSIONAL BACKGROUND

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

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

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

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

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

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

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

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

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

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

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

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

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

[0013] I have written a number of books on wireless location including: The Definitive Guide to IoT Sensors and IoT Use Cases (In Development), The Definitive Guide to GPS, RFID, Wi-Fi, and Other Wireless Location-Based Services (2005/2009 versions, new version in development), The Definitive Guide to Wireless E911 (2004 and 2005 versions), and (co-authored) The Definitive Guide to Mobile Positioning and Location Management.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

II. MATERIALS REVIEWED AND CONSIDERED

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

Exhibit	Description
1001	U.S. Patent No. 9,635,540 (“the ’540 patent”)
1002	Prosecution History of U.S. Patent No. 9,635,540
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”)

Exhibit	Description
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”)
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”)
1017	U.S. Patent No. 6,885,874 (“Grube”)
1018	U.S. Patent No. 6,716,101 (“Meadows”)
1019	U.S. Patent No. 7,366,522 (“Thomas”)
1022	International Patent Application Publication No. WO 01/91486 (“Darling”)
1023	U.S. Patent No. 6,084,951 (“Smith”)
1025	U.S. Patent No. 6,415,224 (“Wako”)
1027	Korean Patent Application Publication No. 10-2001-0091381 (“Han”)
1030	U.S. Patent No. 6,754,665 (“Futagami”)
1054	U.S. Patent No. 6,867,733 (“Sandhu”)
1072	U.S. Patent No. 6,366,856 (“Johnson”)
1073	U.S. Patent No. 6,154,745 (“Kari”)

III. MY UNDERSTANDING OF PATENT LAW

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

of forming the opinions set forth in this declaration. My understanding in this respect is as follows:

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

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

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

[0041] I understand that determining whether a particular patent or printed publication constitutes prior art to a challenged patent claim can require determining the effective filing date (also known as the priority date) to which the challenged claim is entitled. I understand that for a patent claim to be entitled to the benefit of the filing date of an earlier application to which the patent claims priority, the earlier application must have described the claimed invention in sufficient detail to convey with reasonable clarity to the POSA that the inventor had possession of the claimed invention as of the earlier application's filing date. I understand that a disclosure that merely renders the claimed invention obvious is not sufficient written description for the claim to be entitled to the benefit of the filing date of the application containing that disclosure.

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

A. Anticipation

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

understood the reference to disclose the limitation based on inferences that a POSA would reasonably be expected to draw from the explicit teachings in the reference when read in light of the POSA's knowledge and experience.

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

B. Obviousness

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

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

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

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

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

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

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

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

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

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

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

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

[0051] The ’540 patent involves technology in the field of location-based services—including specifically “systems and methods for determining a device’s location” and “[m]ore particularly,...systems and methods for remotely determining a device’s location.” EX1001, 1:16-19. I have been asked to provide my opinions as to the state of the art in this field by March 2002. I use this timeframe because the face of the ’540 patent indicates an earliest claimed priority date of March 25, 2002. Whenever I offer an opinion in this declaration about the

knowledge of a POSA, the manner in which a POSA would have understood the claims of the '540 patent or its description, the manner in which a POSA would have understood the prior art, or what a POSA would have been led to do based on the prior art, I am referencing the early-2002 timeframe, even if I do not say so specifically in each case.

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

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

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

V. THE '540 PATENT

[0055] The '540 patent is titled "Systems and Methods for Locating Cellular Phones and Security Measures for the Same." Its Abstract says it provides "[m]ore particularly, systems and methods for provided that allow the location of a requested user's cellular phone to be provided to a requesting user's device (e.g., a second cellular phone) based on access rights defined by the requested user."

A. Specification Embodiments

[0056] Generally, the '540 patent discusses techniques for determining a wireless device's location, such as via the Global Positioning System ("GPS"). EX1001, 1:15-26. The patent alleges that "GPS systems have been integrated into cellular phones" but "only minimally utilized," so the patent purports to provide

functionality to allow one cellphone user to “locate the position of” another user’s cellphone. EX1001, 1:27-43.

[0057] Cellphones in the ’540 patent can share their locations with a remote system, from which other users can obtain them. EX1001, 5:4-26. A user can also restrict access to their location by identifying authorized users or groups, thus specifying which other users may obtain their location information. EX1001, 3:22-31.

[0058] FIG. 2’s example method to obtain another user’s location (below) includes receiving a location request, determining whether the requesting user is authorized, and, if so, providing the location to the requestor. The location can be displayed on a map. EX1001, 8:6-21.

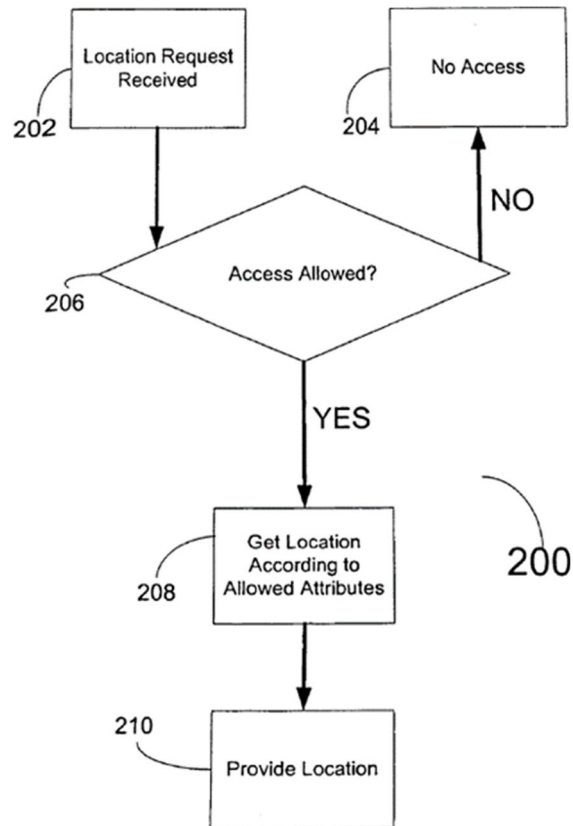


FIG. 2
EX1001, FIG. 2

[0059] Received location information may be displayed on a display screen, as shown in FIG. 6's example below. EX1001, 7:31-39. The display can include directional information, such as compass information and an arrow showing which way the target user's location is relative to the requesting user. EX1001, 7:51-61.

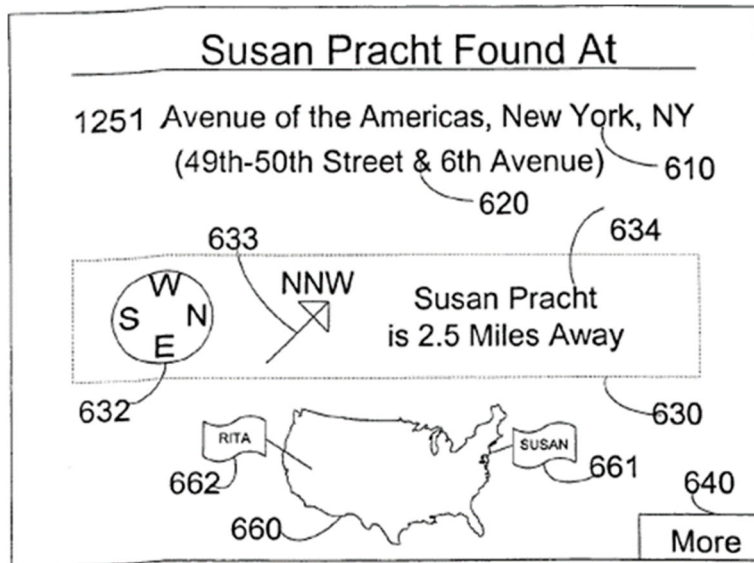


FIG. 6

EX1001, FIG. 6

B. Prosecution History of the '540 Patent

[0060] The '540 patent's application was rejected 12 times before allowance. EX1002, 65-69, 183-88, 1004-07, 1106-10, 1157-61, 1198-1204, 1239-47, 1287-96, 1342-53, 1394-1403, 1446-50, 1470-73. The claims were allowed after Applicant added the following limitations to claim 1, the only independent claim: (1) "determining that said second wireless device does not have location access rights for said first wireless device" and (2) "asking said second wireless device if said location access rights are to be requested from said first wireless device[.]" EX1002, 1412. Applicant asserted that the prior art did not teach a step of asking the requesting device if location access rights were to be

requested from the first device. EX1002, 1431. The Examiner provided no reasons for allowance. EX1002, 1448.

C. The Challenged Claims

[0061] The '540 patent's single independent claim 1 recites a method in which a second wireless device requests the location of a first wireless device from a remote server. The server determines that the second wireless device does not have location access rights for the first wireless device, and asks the second wireless device if location access rights are to be requested from the first wireless device. Regardless of the response from the second wireless device, the location access rights are requested, assigned to the second wireless device, and stored on the server, and the location is provided by the server to the second wireless device.

[0062] As I discuss further below in §VIII, each of the dependent claims recites further functionality that was routine and conventional before the '540 patent's earliest claimed priority date.

VI. CLAIM INTERPRETATION

[0063] In accordance with the standards for interpreting patent claim terms that I discussed above in Section III, I have interpreted the terms in the claims in accordance with their ordinary and customary meaning as understood by a POSA in the context of the patent (including the descriptions in the specification) and its prosecution history.

VII. PRIOR-ART REFERENCES

[0064] I briefly introduce in this Section below various prior-art references discussed in this declaration.

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

[0065] The '540 patent purports to have provided a variety of innovations, such as “locat[ing] the position of a different user's cellular phone (e.g., a requested user) based upon requestor-assigned access rights[,]” EX1001, 1:36-42, and more broadly, “provid[ing] systems and methods that better utilize the information about a device's location.” EX1001, 1:30-32.

[0066] It is my opinion that not only were the purported inventions known to POSAs prior to 2002, the 1990s federal mandate to update wireless devices and carrier network location-based technologies and services spurred innovation in this field years before the patents were filed.

[0067] It is my understanding, and was the understanding of a POSA, that the 1996 Telecommunications Act, and in particular FCC orders (the “911 Mandate”) that came from it dramatically changed the telecommunications industry in the United States, particularly for the wireless industry in general and even more so the development and deployment of wireless location technologies and associated location-based services (“LBS”). The Act and 911 Mandate required action on every part of the wireless ecosystem: devices, carriers, end

users, application providers, equipment makers and service providers, providing much of the groundwork for subsequent location-related services in the United States, including transportation/transit applications.

[0068] The 911 Mandate was rooted in part in the inability of 911 dispatchers to locate mobile phone callers, which set off a subsequent FCC order process that resulted in a mandate by the FCC requiring wireless carriers to be able to locate cell phones for 911 emergency purposes. Federal Communications Commission. “Third Report and Order.” October 6, 1999.

<https://transition.fcc.gov/Bureaus/Wireless/Orders/1999/fcc99245.pdf> (last checked 09-030-2024). The original mandate had a target of 5 years for completion (by December 2001, later revised to the end of 2005), with a variety of interim milestone targets to be met. The mandate required that carriers be able to determine and deliver to Public Safety Answering Points (PSAPs, e.g., 911 dispatchers) the location of a cell phone within a specific range of accuracy.¹

[0069] Thus, well before Mr. Mullen purportedly invented the ideas described in the challenged patents, the U.S. E911 mandate requiring the locating devices and sharing that location with other systems (and in turn other users) had

¹ For handset-based solutions: 50 meters for 67 percent of calls, 150 meters for 95 percent of calls; For network-based solutions: 100 meters for 67 percent of calls, 300 meters for 95 percent of calls. See https://transition.fcc.gov/pshs/services/911-services/enhanced911/archives/factsheet_requirements_012001.pdf at p.3 (last checked 09-30-2024).

been in existence for several years, where much of the wireless industry (particularly wireless carriers and their suppliers) had been actively working for years to meet the original mandate milestones, to avoid multi-million dollar fines, and to enable applications that could monetize the extensive (many millions of dollars) infrastructure investments that the mandate necessitated.

[0070] Further, a variety of location information sharing innovations were occurring by that time, stimulated by the coming ubiquity of cell phone location capabilities and further buoyed by the elimination in May 2000 of the GPS system’s “Selective Availability,” which had deliberately distorted GPS signals so they would be inaccurate up to 100 meters.² As the White House’s press release said at the time:³

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

² Specifically, up to 100 meters vertically, and up to 50 meters horizontally.

³ That Selective Availability would likely be discontinued was known as early as the 1996 Telecommunications Act.

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

⁴ All emphases are added unless otherwise specified.

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

[0071] These new applications and enhancement of existing applications looked to capitalize on the additional capabilities and associated benefits that having location as part of the data set/app functionality would provide. These include improving efficiencies and costs of mobile resources deployment and utilization, new revenue potential from new and more tailored apps, personalizing/customizing functionality based on location, improved convenience, improved privacy and security, providing real-time status based on/including current location, collecting historical location for after-the-fact analysis and forward-looking projections of location-related resources, in enabling more custom data presentation based on/utilizing a user's (device) location, enabling new use cases, and enhancing particular use case(s) and overall application customer experience.

[0072] For example, a Google Patent search for "location services" and "sharing" prior to March 25, 2002 yields over 136,000 results.⁶ Over 129,000 of those results⁷ appear for between May 1, 2000 and March 25, 2002, indicating at

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

⁶ <https://patents.google.com/?q=location+services&q=sharing&before=priority:20020325> (last checked 9/17/2024).

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

least in part the widespread recognition of the benefits from the improved accuracy resulting from removal of Selective Availability, the utility/benefits of sharing location information, and more generally the growing awareness of the potential for location-based services around the turn of the century. Further, over 95,000 results remain when further filtered by adding “cost reduction” or “improved efficiencies.”⁸ Similarly, a search for “location services” and “sharing” and “new revenue” yielded over 15,000 results.⁹ Replacing the search of “new revenue” with “improved user interface” yielded over 84,000 results,¹⁰ and “navigation” instead of “new revenue” yielded over 25,000 results.¹¹ Thus, by the time of the patent priority date, the potential benefits of location services involving the sharing of information like location were well known, including services involving navigation and better user interface capabilities. In addition, a POSA would also recognize the multitude of technology capabilities and varied user interface challenges associated with location-related technology and data, and seek out ways to improve

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

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

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

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

a user's ability to utilize and interact with such (often large amounts of) location data via meaningful and efficient mechanisms.

[0073] It is my opinion, and was the understanding of a POSA, that the LBS field rapidly grew in the late 1990s and early 2000s as the wireless industry strived to satisfy the U.S. E911 mandate and innovators recognized the potential of LBS, particularly with Selective Availability removed. Further, it is my opinion that the general advances in the LBS field would have motivated a POSA to combine the asserted references as I describe in more detail below.

B. Sheha (EX1005)

[0074] Sheha is titled "System and Method for Providing Routing, Mapping, and Relative Position Information to Users of a Communication Network." Sheha "is directed to a system and method for providing real-time position information of one party to another party" such that "a party may locate the position of another party" and "retrieve routing instructions or maps for traveling to or from each other." Sheha, Abstract.

[0075] According to the face of the document, Sheha (EX1005) is a United States patent issued on February 19, 2008 as Patent No. 7,333,820 from an application filed on July 11, 2002 as Application No. 10/194,518. That application claimed priority to a provisional application filed on July 17, 2001 as Provisional Application No. 60/305,975. I have been informed that EX1006 is a copy of the

Sheha provisional application as available from the website of the United States Patent and Trademark Office.

[0076] By comparing EX1005 to EX1006, I have observed that the written description and figures of Sheha (the non-provisional publication) (EX1005) are substantively identical to those of the Sheha provisional application (EX1006).

[0077] Based on comparing claim 1 of Sheha (EX1005) to the written description in the Sheha provisional application (EX1006), it is also my opinion that the Sheha provisional application provides written description support for claim 1 of Sheha, as shown in the table below:

Table 1: Claim Chart comparing Claim 1 of Sheha (EX1005) to Sheha’s Provisional Application (EX1006)

Sheha (EX1005) Claim 1 Limitation	Sheha’s Provisional Application Support in EX1006
1. A method of providing position information of a caller using a telecommunication network, said method comprising the steps of:	“It is another object of the present invention to provide a method for...the purpose of determining position information associated with the telephone number by searching a networked database.” 4:6-10. ¹² <i>See also</i> 4:11-18; 4:21-25 (“ the position information to a caller is displayed”); 11:3-27 (caller uses a

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

	“telephone network,” which is “<i>a telecommunication network</i>”); 12:30-32 (supported telecommunication networks include “CDMA, TDMA, or GSM”).
receiving caller information, said caller information being associated with a telecommunication event that is initiated by the caller, said caller information including at least one of a caller identification information and the phone number information of the caller;	“The act of dialing the telephone number to another remote landline telephone [<i>a telecommunication event</i>]”, such as a residential telephone, triggers the transfer of position information, such as in the form of a map, to either one or both of the local and/or remote telephone devices.” 6:13-17. “In one embodiment the display unit on the destination telephone 8 [<i>i.e.</i>, the device receiving the caller information] can display the caller’s name [<i>caller identification information</i>], telephone number, address, and can provide a map illustration of varying resolutions configured by the user through the telephone network 2.” 11:28-31. “The ODAS 3 is preferably notified that a telephone call is being established by the telephone network 2 [<i>a telecommunication event that is initiated by the caller</i>]. Included in this notification is the telephone number and user identification information for both the originating and destination telephone numbers.” 13:9-13. “After the system has verified that the destination telephone number user is signed-on, the ODAS 3 sends a

	notification to the device 6 that the user is signed-on.” 13:29-31. “In this embodiment, the notification appears on the user’s display device 6 just prior or during the ringing or notification that the telephone has an incoming telephone call. In one embodiment, the display 24 of the user’s device shows that he or she is signed-on and can have numerous miscellaneous window(s) 25 open at the time the Map Caller-ID notification is activated. The Map Caller-ID notification window 26 typically contains only the originating user identification and telephone number, but may also contain map information of varying resolution.” 14:6-13.
accessing caller privacy information, said caller privacy information identifying a caller user group consisting of a plurality of group members pre-defined by said caller, each group member of the caller user group being a user of the telecommunication network;	“In this case, users who are initiating or receiving the telephone calls [<i>‘users of the telecommunication network’</i>] have their local telephone numbers stored into a database that resides on a secure network.” 6:21-23. “In another embodiment, the destination remote mobile device receiving the telephone call obtains the position information from the calling local mobile device, based on permission settings of the calling local mobile device [<i>‘caller privacy information’</i>], for the performance of various operations, such as mapping and calculating driving directions.” 7:19-23. “In another embodiment, each device has privacy settings that allow the

	device to prevent or limit other calling devices from obtaining position information [<i>‘caller privacy information’</i>].” 8:14-16. “In another embodiment, users can define a group of specific users that have access to this information [<i>‘identifying a caller user group consisting of a plurality of group members pre-defined by said caller’</i>]. This is also accomplished by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information [<i>‘identifying a caller user group consisting of a plurality of group members pre-defined by said caller’</i>].” 18:30-19:1.
receiving receiver information, said receiver information being associated with said telecommunication event initiated by the caller, said receiver information including a unique identification information of the receiver;	“This invention relates to location and navigational systems and to the determination of local and remote position information in ad-hoc landline and wireless systems, including the utilization of unique identification addresses, such as telephone numbers or Internet Protocol (IP) addresses [<i>‘unique identification information’</i>], for such purposes as providing real-time location information, maps, routing, and direction finding.” 1:6-11. “It is yet another object of the present invention to provide a method for entering a unique identification token [<i>‘unique identification information’</i>], such as an e-mail address, that can be used on a networked server system utilizing authentication and

	authorization procedures, in order to determine position information and to pass that information between a plurality of unique users or applications on various devices.” 4:11-16. “The act of dialing the telephone number to another remote landline telephone [<i>‘a telecommunication event’</i>], such as a residential telephone, triggers the transfer of position information, such as in the form of a map, to either one or both of the local and/or remote telephone devices.” 6:13-17. “In order to determine the position information of a remote landline or wireless device in order to obtain driving directions to that device or other related information about that device, in one embodiment, a user can initiate a position request by entering a unique identification token, such as an e-mail address.” 8:1-5. “Therefore, in this embodiment, when a telephone 8 dials a destination standard telephone 5 [<i>‘said telecommunication event initiated by the caller’</i>], the destination telephone number is sent over the dedicated landline connection 9b to the telephone network 2 [<i>‘unique identification information’</i>]. The ODAS 3 is sent both the originating and destination telephone numbers via the telephone network connection 10. In another embodiment, accompanying information, such as
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	user identification information associated with each telephone number is also sent to the ODAS 3.” 13:1-7. “The ODAS 3 receives both the originating and destination telephone numbers, users’ account information, and position information for both mobile devices 18b and 18c [‘receiving receiver information, said receiver information being associated with said telecommunication event initiated by the caller, said receiver information including a unique identification information of the receiver’]” 17:29-31.
verifying whether the receiver is a member of the caller user group;	“A mobile or landline device can also request position information of another mobile or landline device by only specifying a telephone number, without having to initiate a telephone call. For a landline-to-landline position request, the specified telephone number is correlated to its position information using telephone information from a known database or sets of databases. In one embodiment, the online database that contains this information only includes users that do not have unlisted telephone numbers. In another embodiment, users can define a group of specific users that have access to this information. This is also accomplished by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information. When a mobile device's

	position information is requested, the system, based on privacy settings, responds with the appropriate position information to the requesting user's device. In another embodiment, using the authorization and authentication protocols a user can request the position of a mobile device, similarly to requesting the position of a landline device.” 18:23-19:6.
retrieving a caller position information, said caller position information indicating a location of the caller; and	“It is another object of the present invention to provide a method for...the purpose of determining position information associated with the telephone number [<i>‘retrieving a call position information ... indicating a location of the caller’</i>] by searching a networked database.” 4:6-10. “It is yet another object of the invention to provide an alternative form of Caller-ID (Map Caller-ID) to a local computing telephone device for display of the caller’s position information This position information transfer is done utilizing authentication and authorization procedures or telephone-to-position information correlation procedures for caller identification.” 4:19-28. <i>See also</i> 5:5-11 (“acquire local or remote position information through the methods described above”); 6:13-17 (“The act of dialing the telephone number to another remote landline telephone, such as a residential telephone, triggers the transfer of position information, such as in the form of a map, to either one or both

	of the local and/or remote telephone devices.”); 7:19-23 (“In another embodiment, the destination remote mobile device receiving the telephone call obtains the position information from the calling local mobile device [<i>‘retrieving a call position information ... indicating a location of the caller’</i>], based on permission settings of the calling local mobile device, for the performance of various operations, such as mapping and calculating driving directions.”); 11:21-24 (“Map Caller-ID includes additional position information fields of various formats, and can include map information at varying resolutions of both the originating and destination telephone number’s locations.”); 14:21-25 (“In one embodiment, this new information window 30 is a detailed Map Caller-ID information window of varying resolution displaying the originating position information, such as a map location 33 of the caller, and the user’s location position information, such as a map location 34 of the destination telephone number.”); 18:15-22 (“The mobile devices 18b and 18c continually send their updated position information to the ODAS 3, when the position information has changed significantly as compared to the positioning error probability and as determined by the positioning technology or network configuration. The ODAS 3 periodically updates each mobile device with the other’s position information, thus providing real-time driving directions and route
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	information. In another embodiment, the position information transfer can be sent in a peer-to-peer configuration, thus circumventing the ODAS 3.”)
transmitting to the receiver the caller position information if the receiver is verified to be a member of the caller user group,	“The mobile devices 18b and 18c continually send their updated position information to the ODAS 3, when the position information has changed significantly as compared to the positioning error probability and as determined by the positioning technology or network configuration. The ODAS 3 periodically updates each mobile device with the other’s position information [<i>“transmitting to the receiver the caller position information”</i>], thus providing real-time driving directions and route information. In another embodiment, the position information transfer can be sent in a peer-to-peer configuration, thus circumventing the ODAS 3.” 18:15-22. “A mobile or landline device can also request position information of another mobile or landline device by only specifying a telephone number, without having to initiate a telephone call. For a landline-to-landline position request, the specified telephone number is correlated to its position information using telephone information from a known database or sets of databases. In one embodiment, the online database that contains this information only includes users that do not have unlisted telephone numbers. In another embodiment, users can define a group of specific users that have access to

	this information [<i>‘receiver is verified to be a member of the caller user group’</i>]. This is also accomplished by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information [<i>‘receiver is verified to be a member of the caller user group’</i>]. When a mobile device's position information is requested, the system, based on privacy settings, responds with the appropriate position information to the requesting user's device [<i>“transmitting to the receiver the caller position information if the receiver is verified to be a member of the caller user group”</i>]. In another embodiment, using the authorization and authentication protocols a user can request the position of a mobile device, similarly to requesting the position of a landline device.” 18:23-19:6.
wherein the transmission of the caller position information is associated with the telecommunication event and occurs after the telecommunication event is initiated.	“The act of dialing the telephone number to another remote landline telephone [<i>‘a telecommunication event’</i>], such as a residential telephone, triggers the transfer of position information, such as in the form of a map, to either one or both of the local and/or remote telephone devices [<i>i.e., ‘the transmission of the caller position information is associated with the telecommunication event and occurs after the telecommunication event is initiated’ because the transfer is triggered by the telecommunication event</i>].” 6:13-17.

	“In another embodiment, users can define a group of specific users that have access to this information. This is also accomplished by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information. When a mobile device’s position information is requested [i.e., ‘after the telecommunication event is initiated’], the system, based on privacy settings, responds with the appropriate position information to the requesting user’s device [‘transmitting to the receiver the caller position information if the receiver is verified to be a member of the caller user group’]. In another embodiment, using the authorization and authentication protocols a user can request the position of a mobile device, similarly to requesting the position of a landline device.” 18:30-19:6.
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[0078] Because Sheha’s disclosure is substantively identical to that of its provisional application, and because the provisional application’s disclosure provides written-description support for at least one of Sheha’s claims (e.g., Sheha’s claim 1 as I demonstrated above), I have been informed by counsel that Sheha qualifies as prior art to the ’540 patent based on the filing date of Sheha’s provisional application.

[0079] As discussed in Sections VIII.E-H below, in my opinion a POSA would have understood that Sheha, in combination with other references,

renders obvious all claims of the '540 patent. *See also infra* §VIII.E.1 (additional discussion of Sheha).

C. Randall (EX1007)

[0080] Randall is titled “Method of Enabling a Wireless Information Device to Access Data Services.” Randall relates to “enabling a wireless information device to access data from several data services providers...using an extensible framework which handles data passing to and from several applications resident on the device, the framework being shared by each of the applications resident on the device and also being shared by each of the data services providers.” Randall, Abstract. “As an example,...a user might choose to subscribe to a service which allowed others to track his or her location” and “show the position of the user” on “digital maps.” Randall, [0021].

[0081] According to the face of the document, Randall (EX1007) is a published U.S. patent application, published on February 5, 2004 as Publication No. 2004/0024846 from an international patent application that was filed on August 22, 2001 as PCT (WIPO) Application No. PCT/GB01/03788 and entered the U.S. national stage as U.S. Application No. 10/362,109. I have been informed by counsel that Randall qualifies as prior art to the '218 patent based on Randall's international filing date. I have also compared the WIPO publication of Randall (EX1008) to the U.S. publication of Randall (EX1007) and I have observed that

they are substantively identical. In Table 2 below, I have listed the paragraphs in the U.S. publication of Randall that appear on each page of the WIPO publication of Randall. Thus, although in this declaration I cite to the U.S. publication of Randall (EX1007) for ease of reference, each citation to the U.S. publication has a substantively identical citation in the WIPO publication of Randall at the corresponding page shown in the following table:

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

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

[0082] As discussed in Sections VIII.A-D below, in my opinion a POSA would have understood that Randall, alone or in combination with other references, renders obvious all claims of the '540 patent. *See also infra* §VIII.A.1 (additional discussion of Randall).

D. Darling (EX1022)

[0083] Daring is titled “Informing a subscriber about the position of another subscriber” and relates to “using mobile equipment, in which messages can be sent to and from a server thereby allowing information to be obtained concerning users of the mobile devices even when the users are off line and without requiring direct contact with the users.” Darling, Abstract. According to the face of the document, Darling (EX1022) is an international patent application published on November 29, 2001 as International Publication No. WO 01/91486 from an international patent application filed on May 22, 2001 as Application No. PCT/GB01/02244. I have been informed by counsel that Darling qualifies as prior art to the '540 patent based on Darling's publication date. *See also infra* §VIII.A.2 (additional discussion of Degnbol).

E. Futagami (EX1030)

[0084] Futagami is titled “Information processing apparatus, information processing method, and storage medium” and relates to “an information processing apparatus, an information processing method, and a storage

medium, which allow personal information of a user, such as a name, address, telephone number, and electronic mail address, to be recorded in an address table or the like and which also make it possible to easily control the access of another user to the personal information.” Futagami, 1:10-16. According to the face of the document, Futagami is a United States patent issued on June 22, 2004 as Patent No. 6,754,665 from an application filed on June 13, 2000 as Application No. 09/592,977. I have been informed by counsel that Futagami qualifies as prior art to the ’540 patent based on Futagami’s filing date. *See also infra* §VIII.A.3 (additional discussion of Futagami).

F. Ryden (EX1009)

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

[0086] By comparing EX1009 to EX1010, I have observed that the written description and figures 1-16 of Ryden (the non-provisional publication) (EX1009) are substantively nearly identical to those of the Ryden provisional

application (EX1010), and every disclosure in Ryden (the non-provisional publication) that I discuss in Grounds 2 and 7 below (§VIII.B.5, §VIII.G.2) is supported by Ryden’s provisional application, as demonstrated by the citations I provide below in Grounds 2 and 7.

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

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

Ryden (EX1009) Claim 1 Limitation	Ryden’s Provisional Application Support in EX1010
1. A communication system for communication between a first communications unit and at least one other communications unit, comprising:	“The present invention comprises a communication system which may be integrated with current telephonic system, e.g. hard-wired or cellular, or may be used as a partial or complete replacement for current methods of initiating and maintaining telephonic communication between parties.” Ryden-Provisional, 6:19-24.¹³ “In a location-based communication system of the invention, each mobile unit [e.g., <i>first and second</i>

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

	<i>communication units</i>] To initiate a call [<i>a communication</i>] from a first telephone unit to a second telephone unit” Ryden-Provisional, 7:14-24. “The invention may be broadly summarized as comprising methods and apparatus for connecting telephone units 10 for directional communication on the basis of the earth location of the calling and/or called telephone units, rather than on the basis of a conventional assigned telephone number.” Ryden-Provisional, 13:7-12. <i>See also</i> Ryden-Provisional, 13:7-14:6.
first communications unit, comprising:	“In a location-based communication system of the invention, each mobile unit [e.g., <i>first and second communication units</i>] To initiate a call from a first telephone unit [<i>first communication unit</i>] to a second telephone unit” Ryden-Provisional, 7:14-24 “The term ‘telephone unit’ is used to describe a terminal apparatus by which a user may access a communication system, and may transmit and receive voice, data, e-mail, facsimile information and the like.... A telephone unit may be configured as a desk or wall-mounted ‘hand-set’, a mobile unit, vehicle mounted telephone unit, a computer terminal or other apparatus.” Ryden-Provisional, 12:13-27.

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

	dimensions including altitude 38 e.g. above sea level, or alternatively above ground level. As already indicated, the location G# 30 may be configured and stored in memory 82 as a numeric or alpha-numeric sting indicative of the 2-dimensional or 3-dimensional position G.” Ryden, 10:1-16; <i>see also</i> FIGS. 2-3. Ryden’s provisional includes the same disclosure. <i>See</i> Ryden-Provisional, 16:21-17:6; <i>see also</i> FIGS. 2-3.
means for encodingly defining a selectable geographic zone having boundaries encoded in at least two dimensions to seek connection with a targeted communications unit;	An exemplary “<i>means for encodingly defining a selectable geographic zone having boundaries encoded in at least two dimensions to seek connection with a targeted communications unit</i>” disclosed in Ryden is “the initiating call from the first telephone unit is directed (e.g., through a communications transceiver on a satellite or cellular system) to include a two-dimensional area or a three-dimensional space having boundaries [defining a selectable geographic zone having boundaries encoded in at least two dimensions] within which the G# (i.e. location) of the second telephone unit is located [<i>a targeted communications unit</i>]. This area or space is called herein a Geographic Zone or GZ for short, and has a brief numeric or alphanumeric electronically transmittable code defining the limits of the GZ.” Ryden, 4:57-65 Ryden discloses “[a]n initiating telephone call will preferably include the G# of the calling telephone unit ...

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

	which a desired called telephone unit is located, e.g. a GZ#.” Ryden, 5:4-8. <i>See also</i> Ryden, 4:57-65, 12:50-13:48; FIGS. 2-3. Ryden’s provisional includes the same disclosures. <i>See</i> Ryden-Provisional, 7:25-8:6, 8:7-11, 22:15-24:13, FIGS. 2-3.
second communications unit, comprising:	“In a location-based communication system of the invention, each mobile unit [e.g., <i>first and second communication units</i>] To initiate a call from a first telephone unit to a second telephone unit [<i>second communication unit</i>]” Ryden-Provisional, 7:14-24. “The term ‘telephone unit’ is used to describe a terminal apparatus by which a user may access a communication system, and may transmit and receive voice, data, e-mail, facsimile information and the like.... A telephone unit may be configured as a desk or wall-mounted ‘hand-set’, a mobile unit, vehicle mounted telephone unit, a computer terminal or other apparatus.” Ryden-Provisional, 12:13-27.
radio-telephone means for sending and receiving messages by radio including means for initiating, maintaining and terminating said messages;	<i>See</i> same limitation above for the “<i>first communication unit</i>.” <i>See also</i> Ryden-Provisional, 15:2-5 (“Where the text specifically refers to one of a stationary or mobile unit, stationary telephone units will be

	identified by the numeral 10A, and mobile units by 10B.”)
means for receiving encoded earth locations of itself in at least two dimensions from a Position Locating Satellite;	<i>See same limitation above for the “first communication unit.”</i>
means for encodingly defining a selectable geographic zone having boundaries encoded in at least two dimensions to seek connection with a targeted communications unit;	<i>See same limitation above for the “first communication unit.”</i>
means for comparing said geographic zone selected by said first communications unit with said encoded earth location of itself to determine agreement therewith, and	An exemplary “<i>means for comparing said geographic zone selected by said first communications unit with said encoded earth location of itself to determine agreement therewith</i>” disclosed in Ryden is “telephone units 10 are programmed so that, upon sensing a telephone call origination message from a communications satellite 7 (or other location based communication system) which agrees with its own G# 30. ... [The unit] respond[s] with its G# 30 and identification number 140 to every call 23 it senses which is in agreement with its location....” Ryden, 16:43-58. Ryden also discloses that “[t]he called telephone unit receives the initiating call, compares the called geographic definition with its own location. If there is agreement, the called telephone unit will signal that it has received a call, and an ANSWER command may be entered by its user (or an automatic response may [be] initiated by the unit) to complete the connection and begin communication.” Ryden, 5:14-21.

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

[0088] Because Ryden’s disclosure is nearly substantively identical to that of its provisional application, and because the provisional application’s disclosure provides written-description support for at least one of Ryden’s claims (e.g., Ryden’s claim 1 as I demonstrated above) and support for the disclosure in Ryden that I identify for Grounds 2 and 7 (as I demonstrate below, *infra* §VIII.B.5, §VIII.G.2), I have been informed by counsel that Ryden qualifies as prior art to the ’540 patent based on the filing date of Ryden’s provisional application. *See also infra* §VIII.B.1 (additional discussion of Ryden).

G. Wollrab (EX1014)

[0089] Wollrab is titled “Family calendar notification and tracking” and relates to “an electronic system and method for managing location, calendar, and event information.” Wollrab, Abstract. According to the face of the document, Wollrab is a United States patent issued on July 19, 2005 as Patent No. 6,920,328 from an application filed on August 30, 2001 as Application No. 09/942,901. I have been informed by counsel that Wollrab qualifies as prior art to the ’540 patent based on Wollrab’s filing date. *See also infra* §VIII.E.1 (additional discussion of Wollrab).

H. De-Vries (EX1013)

[0090] De-Vries is titled “Place specific buddy list services” and relates to “communications and messaging systems and services, and more

particularly to such systems and services to facilitate communication based on location and inter-relationships of people.” De-Vries, 1:5-8. According to the face of the document, De-Vries is a United States patent issued on November 22, 2005 as Patent No. 6,968,179 from an application filed on July 27, 2000 as Application No. 09/626,170. I have been informed by counsel that De-Vries qualifies as prior art to the ’540 patent based on De-Vries’s filing date. *See also infra* §VIII.C.1 (additional discussion of De-Vries).

I. Wako (EX1025)

[0091] Wako is titled “Display Method and Apparatus for Navigation System” and relates to “displaying information necessary for guiding a driver of a vehicle.” Smith, Abstract. According to the face of the document, Wako is a United States patent issued on July 2, 2002 as Patent No. 6,415,224 from an application filed on February 6, 2001 as Application No. 09/777,990. I have been informed by counsel that Wako qualifies as prior art to the ’540 patent based on Wako’s filing date. *See also infra* §VIII.D.1 (additional discussion of Wako).

J. Smith (EX1023)

[0092] Smith is titled “Iconized name list” and relates to “to graphical user interfaces in telephony, and more particularly to scrolling lists with automatic compression and expansion.” Smith, 1:21-23. According to the face of the document, Smith is a United States patent issued on July 4, 2000 as Patent No.

6,084,951 from an application filed on April 23, 1997 as Application No.

08/842,036. I have been informed by counsel that Smith qualifies as prior art to the '540 patent based on Smith's issue date. *See also infra* §VIII.I.1 (additional discussion of Smith).

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

[0093] I have been asked to provide my opinion concerning whether claims 1-35 of the '540 patent would have been obvious to a POSA in light of the prior-art references discussed below. For the reasons explained below, it is my opinion that each of claims 1-35 would have been obvious to a POSA. The following table summarizes the Grounds I discuss in the sections below:

Ground Number and Reference(s)		Claims	Basis
1	Randall (EX1007-EX1008), Darling (EX1022), Futagami (EX1030)	1-3, 5, 11-16, 19-24, 29, 33-35	Obviousness
2	Randall, Darling, Futagami, Ryden (EX1009)	3, 8	Obviousness
3	Randall, Darling, Futagami, De-Vries (EX1013)	4, 9-10, 17-18, 28, 30	Obviousness
4	Randall, Darling, Futagami, Wako (EX1025)	6-7, 25-27	Obviousness
5	Randall, Darling, Futagami, Wollrab (EX1014)	31-32	Obviousness
6	Sheha (EX1005), Darling, Futagami	1-3, 5-6, 11-16, 22-26, 29, 33-35	Obviousness
7	Sheha, Darling, Futagami, Ryden	3, 7-8, 27	Obviousness

8	Sheha, Darling, Futagami, De-Vries	4, 9-10, 17-18, 28, 30	Obviousness
9	Sheha, Darling, Futagami, Smith (EX1023)	19-21	Obviousness
10	Sheha, Darling, Futagami, Wollrab	31-32	Obviousness

A. Ground 1: Claim 1-3, 5, 11-16, 19-24, 29, and 33-35 are Unpatentable Over Randall in view of Darling and Futagami

[0094] As explained in this section below, in my opinion claims 1-3, 5, 11-16, 19-24, 29, and 33-35 of the '540 patent are unpatentable over the combination of Randall (EX1007-EX1008), Darling (EX1022), and Futagami (EX1030).

1. Discussion of Randall (EX1007-EX1008)

[0095] Randall is an international (PCT) application filed August 22, 2001, and published in the international stage as EX1008 (in English, designating the United States) and then in the U.S. national stage as EX1007. I understand that Randall is therefore prior art to the '540 patent. Citations herein are to the U.S. publication (EX1007) paragraph numbers for convenience; however, the identical description is present in the international publication (EX1008), as I demonstrated above in §VII.C. Thus, everything I cite to in EX1007 is identically disclosed in EX1008.

[0096] Randall relates to “enabling a wireless information device to access data services,” using “an extensible framework which handles data passing to and from several applications resident on the device, the framework being shared by each of the applications.” Randall, [0002], [0006]. The wireless devices can be “radio telephones, smart phones,” etc., which “can access information on” “internet servers hosting extensible databases.” Randall, [0002], [0029]. Examples of applications on a wireless device that can all access the same server-based database framework and coordinate to provide services include “a directory application (which contains a user’s contacts list...)” and “a location application (which gives a user’s location and includes digital maps).” Randall, [0009], [0012], [0025], [0028] (“applications...share information”), [0080]-[0081], [0086], [0085]-[0115].

[0097] Randall’s framework is a “‘framework of frameworks’ such that services are tightly integrated in a way that the traditional browser model does not allow.” Randall, [0080]. Specifically, Randall provides a framework that allows for different services to be available from a “centralised location” (Randall, [0080]) such that different applications on the wireless device can work together to provide a service using the same data from the centralized location. Randall, [0025], [0081].

[0098] For example, Randall provides an example of a “Yellow Pages™ data services plug-in” in which different applications on a wireless device can all access data from a “Yellow Pages remote server” to work together to provide a service. Randall, [0009], see also Randall, [0089]-[0093] (Randall describing a “Yellow Pages” service provided by a Directory framework application and a Radar framework). Thus, different applications on the wireless device can be “grouped together” to provide a service using the same Yellow Pages remote server data. Randall, [0025]. In the “Yellow Pages” example, “a search request performed in the directory application (e.g. search: ‘cameras’) could be routed to a Yellow Pages remote server, which responds with the required data, including detailed maps in the location application; special shopping offers are [] pushed into the shopping application; nearby shops/services are shown in the location application.” Randall, [0009]. Accordingly, the Yellow Pages data services plug-in in this example can provide data from the same source to the different applications on the wireless device that work together to provide a service.

[0099] Randall provides another example in which “data sent from a commercial data service provider can automatically populate one or more applications (such as PIM applications) on the wireless information device.” Randall, [0012]. In this example, “sporting fixtures and entertainment listings

could be transmitted from a data service provider placed straight into a user's calendar application" and "[n]ews headlines and weather could be sent straight into a user's calendar application." Randall, [0012]. That various data can automatically be provided to different applications on the user's wireless device "where it is likely to be looked at and found useful" to provide a service. Randall, [0012].

[0100] Regarding location, "[a]s an example,...a user might choose to subscribe to a service which allowed others to track his or her location—location could be a new attribute" stored in the "database" as "information relating to [the] individual." Randall, [0021]. "The user's friends or parents etc who wish to track the users 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].

[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.

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].

[0102] Thus, Randall discloses that various applications in a wireless device can all work together to provide a service using the same server data to support the various functionalities supported by Randall’s service.

2. Discussion of Darling (EX1022)

[0103] Darling relates to “[m]obile telephones,” and “enabl[ing] a user to determine the location of another user without specifically having to contact that other user, even when that other user is not online or when their mobile telephone or other device is switched off.” Darling, 1:26, 9:11-16, 2:10-12. Each phone’s GPS position is provided to a server, such that a second user can request a first user’s location from the server. Darling, 2:1-8, 2:47-50. Users’ locations “may be determined by GPS or by triangulation, by the user’s mobile telephone or by the network, or both and preferably sent at intervals or on request by the server or at the request of [another] user.” Darling, 2:47-50. Darling teaches that “[e]ach user may specify that location information is available only to specified users or groups or categories of users or that the information is publicly available” 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. Darling further teaches that “[i]n addition or instead of a first user granting permission to a second user, the second user may request permission to have access to information from the first user's profile, for example business card details, location information, preferences and the like.” 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.

3. Discussion of Futagami (EX1030)

[0104] Futagami describes techniques for controlling access to the personal information of a user of a portable telephone device, such as the user’s “name, telephone number, address,” etc. 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, in accordance with access restriction information, whether or not providing of the personal information...is restricted.” 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 to provide the personal information,” and “[i]f permission is given, the management server provides the personal information” to the requesting user. Futagami, Abstract, 16:7-32. This is shown in Figures 19-21 as a “determination as to whether to issue a request for changing the access restriction,” to which the user can input “yes” or “no.” If the user inputs “yes,” then the user’s device transmits a restriction removal request message to the management server, and the management server transmits a restriction removal inquiry message to the device of the other user. Futagami, 16:7-18, 17:1-8, 20:40-43. The other user can then decide whether to “approve[] the removal of access restriction” by “giv[ing] permission, as to access to the personal information, to the user.” Futagami, 16:25-32, 19:60-63, 20:60-65.

4. Discussion of Randall-Darling-Futagami Combination

[0105] As I discussed above (§§VIII.A.1-3) and further below, Randall, Darling, and Futagami describe highly overlapping techniques and use cases. As I explain below, all three describe a system where a server stores personal information of client users of wireless devices.

[0106] Randall teaches that its wireless devices’ “‘map’ application” can show the device’s “position on digital maps and also, by using the location attribute of [another] user’s data object, it could also show the position of the [other] user.” Randall, [0021]. Randall discloses an “ADS System Database,” which “is at the heart of much of the ADS System’s extensibility,” where “[e]ach piece of data [stored] on the server (the ‘i-server’) has an associated tag (or name) which defines its meaning.” Randall, [0502]-[0505], Table 1 (“Alice’s iData” stored on i-server, including “name,” “E-mail,” “Mobile Phone” number, “Home Address,” etc.).

[0107] Darling similarly discloses a “server” that “stores permission information indicating whether the location information ... is available to the second user,” with “[s]imilar permissions” “associated with other information stored for each user,” where “the preferred features of this aspect may be provided independently or in combination with other aspects” of Darling’s system. Darling, 3:1-8, *see also* Darling, 21:19-22:17 (“Personal Profile” including “name,” “Mobile Phone Number,” “Personal Email Address,” “Date of Birth,” “Address,” etc.).

[0108] Futagami similarly discloses a “management server” that “manages personal information of all users of,” for example, “portable telephone device 5, and other client terminals” “in terms of, for example, names, telephone

numbers, addresses, dates of birth, and electronic mail addresses.” Futagami, 4:7-12.

[0109] As I explain below, all three references also 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.

[0110] Randall discloses “Specifying Data Visibility” because “data provided by or on behalf of the user will have varying levels of visibility assigned to it” and so users can “define...for themselves” to various data, including “[v]isible to specific people (or groups).” Randall, [0131]-[0136]. Randall further discloses that “sensitive information is only available to people in certain i-Groups” and “allowing Alice to control what data they see.” Randall, [0509].

[0111] Darling similarly discloses that “[e]ach user may specify that location information is available only to specified users or groups.” Darling, 3:3-5. Darling further discloses defining information about “People who have access to My Personal Details,” which is a “[l]ist of individuals who have access to the Personal Details,” and “will use” various information “to identify the user depending on how much information the system has on that user” (e.g., “Nickname,” “Username,” “Mobile Phone Number,” “Email address”). Darling, 22:23-40. Darling further discloses functionality for “Requests for Access to this

profile.” Darling, 22:41-23:13; *see also* Darling, 33:16-34:3 (“People who have access to My Location Details”).

[0112] Futagami similarly discloses that “for each user, the access restriction information may specify personal information which is not permitted to be accessed by the user.” Futagami, 13:33-67. Futagami further discloses that, for example, “user B is permitted to access data A and data C; user C is permitted to access data C and data D;” etc. Futagami, 14:1-44; *see also* Futagami, FIGs. 15-16.

[0113] As I explain below, 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.

[0114] Randall discloses performing “Authentication (i.e., identifying an entity seeking information)” where “the server recogniz[es] Bob’s device 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].

[0115] Darling similarly discloses that with the “server stores permission information indicating whether the location information for the first

user is available to the second user” and “checking the permission information prior to the transmitting step.” Darling, 3:1-3. Users “may specify that location information is available only to specified users or groups or categories of users” and “[s]imilar permission may be associated with other information stored for each user.” Darling, 3:3-8. “If the second user is not permitted to know the location of the first user, the information is not transmitted.” Darling, 3:8-9.

[0116] Futagami similarly discloses that the “management server” functioning so that “access to personal information is restricted in accordance with the access restriction information.” Futagami, 14:44-49. The server “receives a personal information retrieval request together with a keyword from the client terminal” and “retrieves personal information, which matches the keyword...from personal information recorded in the personal information database.” Futagami, 14:50-65. The “server unit 32” then “determines, in accordance with the access restriction information, whether the user of the client terminal which has issued the retrieval request is permitted to access the personal information.” Futagami, 14:66-15:3. The server unit will “check[] the access restriction information included in the personal information” and “determine[]...whether the access to that personal information is permitted or not.” Futagami, 15:4-12. If the “user of the client terminal which has issued the retrieval request is permitted to access the personal information” the server will cause the “communication controller 31” “to

transmit the personal information...to the client terminal which has issued the above retrieval request.” Futagami, 15:13-35. “[I]f it is determined” “that the user of the client terminal” “is not permitted to access the personal information,” the “server unit 32 controls the communication controller 31 so as to transmit a message (refusal message) to the client terminal which has issued the retrieval request to tell that access to the requested personal information is not allowed.” Futagami, 15:36-53, *see also* Futagami, 18:26-19:27

[0117] In my opinion, 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. 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).

[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. 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). 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.

[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 (discussed above) 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 have the server request access from the target user (or not). *See also* Futagami, 15:40-16:32, 18:62-20:67, FIGs. 19-20. 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.

5. Mapping of Randall-Darling-Futagami Combination to Claim 1-3, 5, 11-16, 19-24, 29, and 33-35

[0120] As explained in the section below, in my opinion a POSA would have understood that the Randall-Darling-Futagami combination meets all limitations of claims 1-3, 5, 11-16, 19-24, 29, and 33-35 of the '540 patent, and therefore renders those claims obvious.

a. Claim 1

[0121] As explained in this section below, in my opinion a POSA would have understood that the Randall-Darling-Futagami combination meets all limitations of claim 1 of the '540 patent, and therefore renders claim 1 obvious.

i. Preamble [1PRE]: A method of mobile-to-mobile locating, said method comprising:

[0122] Claim 1's preamble recites "[a] method... comprising." I understand that the preamble is not necessarily limiting. In this case, whether or not it is limiting does not affect my opinion as Randall discloses the preamble. Randall teaches "[a] *method* of enabling a wireless information device to access data." Randall, Abstract, [0002], [0006]. As I discussed above (§VIII.A.1), Randall's method provides access control for a mobile device user to track the

location of another mobile device user (*mobile-to-mobile locating*). For example, Randall discloses that “a user might choose to subscribe to a service which allowed others to track his or her location” using “applications resident on their devices,” such as “a ‘map’ application.” Randall, [0021]. Randall further discloses that Alice’s “location data can be obtained via [her] GPS wireless information device, which transmits location information to [an] i-server, enabling authorised people to **track the location of the GPS wireless information device** by polling the server.” Randall, p. 24 (Table 4, “People tracking”), 29 (“Rendezvous”) (“using your phones everyone in your group” makes their “location visible to” each other). Thus, in Randall, the tracking is done on a mobile device, and the tracked device is a mobile device (i.e., *mobile-to-mobile locating*).

ii. Element [1A]: requesting a location of a first wireless device by a second wireless device from a server located remotely from said first and second wireless devices;

[0123] Randall’s system includes “*wireless* information *device[s]*,” which can be “radio telephones, smart phones,” etc. Randall, [0002]. Randall discusses some examples involving Alice and Bob, who are both users of wireless information devices. Randall, [0053], [0491] (“Bob’s...mobile phone”), [0505] (“Alice’s mobile device”). Alice’s device is an exemplary *first wireless device* 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). For example, Randall posits "[c]onsider Alice, who is publishing some information, and Bob who is accessing it." Randall, [0053]. POSAs would have understood Randall to be posing a hypothetical example in which Alice and Bob are arbitrary users of the ADS system and the only distinction between them is the order in which these arbitrary users are performing operations using the ADS system. POSAs would have understood that, in one example, Bob is interested in accessing Alice's data, but the example could easily be reversed in which Alice is interested in Bob's data. Indeed, Randall teaches such a scenario by providing that "Bob also has stored on the server his own personal information" ([0067]), which POSAs would have understood as Bob storing his own personal information on the server for potential use by another user, e.g., Alice, accessing Bob's information in the same way that Randall provides that Bob can access Alice's information. That understanding is also consistent with Randall's claims (e.g., claim 1), which refer to a user operating a generic "wireless information device."

[0124] "[R]esident on the wireless information device" is a "location application (which gives a user's location and includes digital maps)." Randall, [0009], [0021]. "That location data can be obtained via a GPS wireless information device, which transmits location information to [an] i-*server*, enabling

authorised people to track the location of the GPS wireless information device by polling the server.” Randall, p. 24 (Table 4, “People tracking”). The i-server is an “internet *server*[]”—a “*server* on the Internet”—which POSAs would have known is *located remotely* from the wireless devices. Randall, [0029], [0053], [0030] (“application resident on the device queries and receives data from the *remote*, extensible database”), FIG. 4 (showing the system’s servers located remotely from the wireless devices).

[0125] For example, “Alice stores her data on a *server* on the Internet.” Randall, [0053]. As shown in Randall’s Table 1 (which I 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”).

TABLE 1			
<u>Alice’s iData</u>			
Field/Attribute	Category	Details	i-Groups
First name	personal	Alice	all
Family name	personal	Edwards	all
Title	work	European Marketing Manager	all

TABLE 1-continued

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

Randall, Table 1 (highlighted)

[0126] 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]. Thus, as Alice's data changes (e.g., as "[t]he I-server is up-dated" with Alice's current location), "Bob can pull the new data into his device" by "polling the server." Randall, p. 24

(Table 4, “People tracking”), [0053], [0015] (“pull[ing]” information from server is “*request[ing]*” it). “When Bob’s device sends Alice’s ADS Number to the server, then the server recognises Bob’s device and allows that device to read Alice’s information held on the database which is specified as being accessible to Bob”—i.e., if Alice has given Bob the appropriate permissions, “the server passes to Bob’s device the information it *requests*.” Randall, [0049], [0067], [0512]. Bob’s device indicates which “relevant information” it is requesting (which may be, e.g., Alice’s location information) by “sending various data tags defining its enquiry.” Randall, [0067].

[0127] Randall thus discloses Element [1A].

[0128] Additionally, Darling reinforces Randall’s teaching to meet Element [1A] by the Randall-Darling-Futagami combination by disclosing “receiving at the server a request from a second user querying where the first user is located,” as “communicated by means of mobile devices.” Darling, 2:1-15; *see also* Darling, 34:22-35:22, 89:23-30.

iii. Element [1B]: determining that said second wireless device does not have location access rights for said first wireless device;

[0129] Randall’s “server recognis[es] Bob’s *device* and *determin[es]* the database *access rights* which Alice has given him.” Randall, [0067]. “The database can define which entities can read different fields: Alice can therefore

give Bob rights to read only certain fields in her database.” Randall, [0047]. As I discussed above (§VIII.A.5.a.ii, Element [1A]) and shown in Table 1, one of the fields in Alice’s database is information about her device’s “GPS *location*,” and she has designated that field as only being accessible to users whom she has designated as part of the “i-Group” called “partner.” Randall, [0503]-[0512]. “[S]ensitive information is only available to people in certain i-Groups; allowing Alice to control what data they see.” Randall, [0509], [0136] (“Location information” is “[v]isible to specific people (or groups)”). 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.*

[0130] “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.

[0131] 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 (excerpted and highlighted below).

TABLE 1

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

[0132] Randall thus discloses Element [1B].

[0133] Additionally, Darling reinforces Randall's teaching to meet Element [1B] by the Randall-Darling-Futagami combination by disclosing that "the server stores permission information indicating whether the location information for the first user is available to the second user and...check[s] the permission information. ... If the second user [i.e., the requesting user] is not permitted to know the location of the first user, the information is not transmitted." Darling, 3:1-9, 35:24-28.

[0134] Futagami also reinforces this teaching Randall's teaching to meet Element [1B] by the Randall-Darling-Futagami combination by disclosing that "it is determined in step S62 that...the access restriction information is set

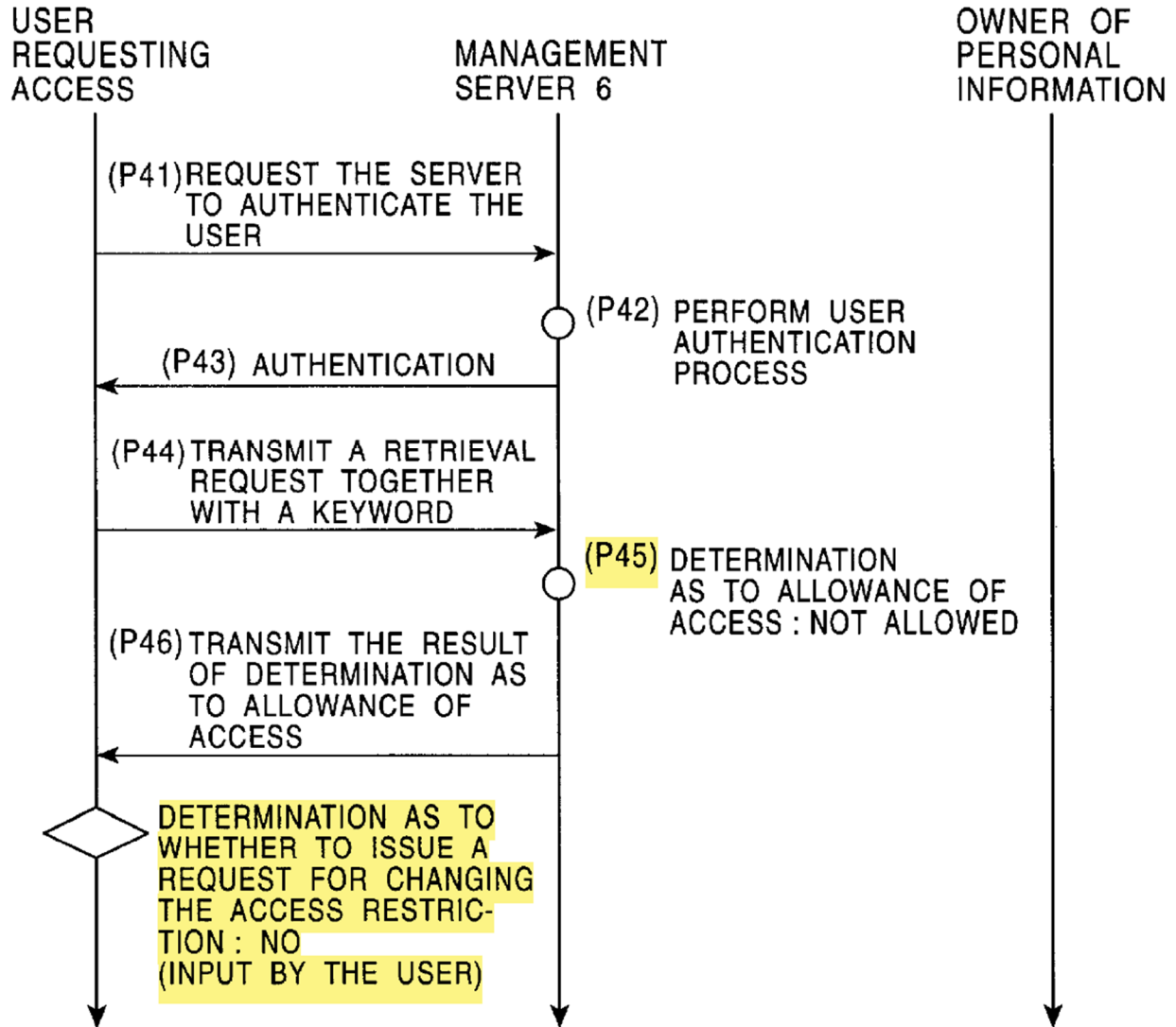
such that the user of the client terminal which has issued the retrieval request is not permitted to access the personal information.” Futagami, 15:40-53; *see also* Futagami, FIG. 17 (arrow “N” from S62), FIG. 19 (“(P45) Determination as to allowance of access: not allowed”), FIG. 20 (P55).

iv. Element [1C]: asking said second wireless device if said location access rights are to be requested from said first wireless device after determining that said second wireless device does not have said location access rights for said first wireless device;

[0135] Futagami teaches that “if it is determined in step S62 that the user of the client terminal which has issued the retrieval request [i.e., 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 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.” Futagami, 15:40-53. “When the user reads the refusal message,” the user is provided an option “if the user still wants to access the retrieved personal information,” to “transmit[] a message (restriction removal request message)...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. As shown in Futagami’s Figures 19-20 (highlighted below), the refusal message prompts for a “determination as to whether to issue a request

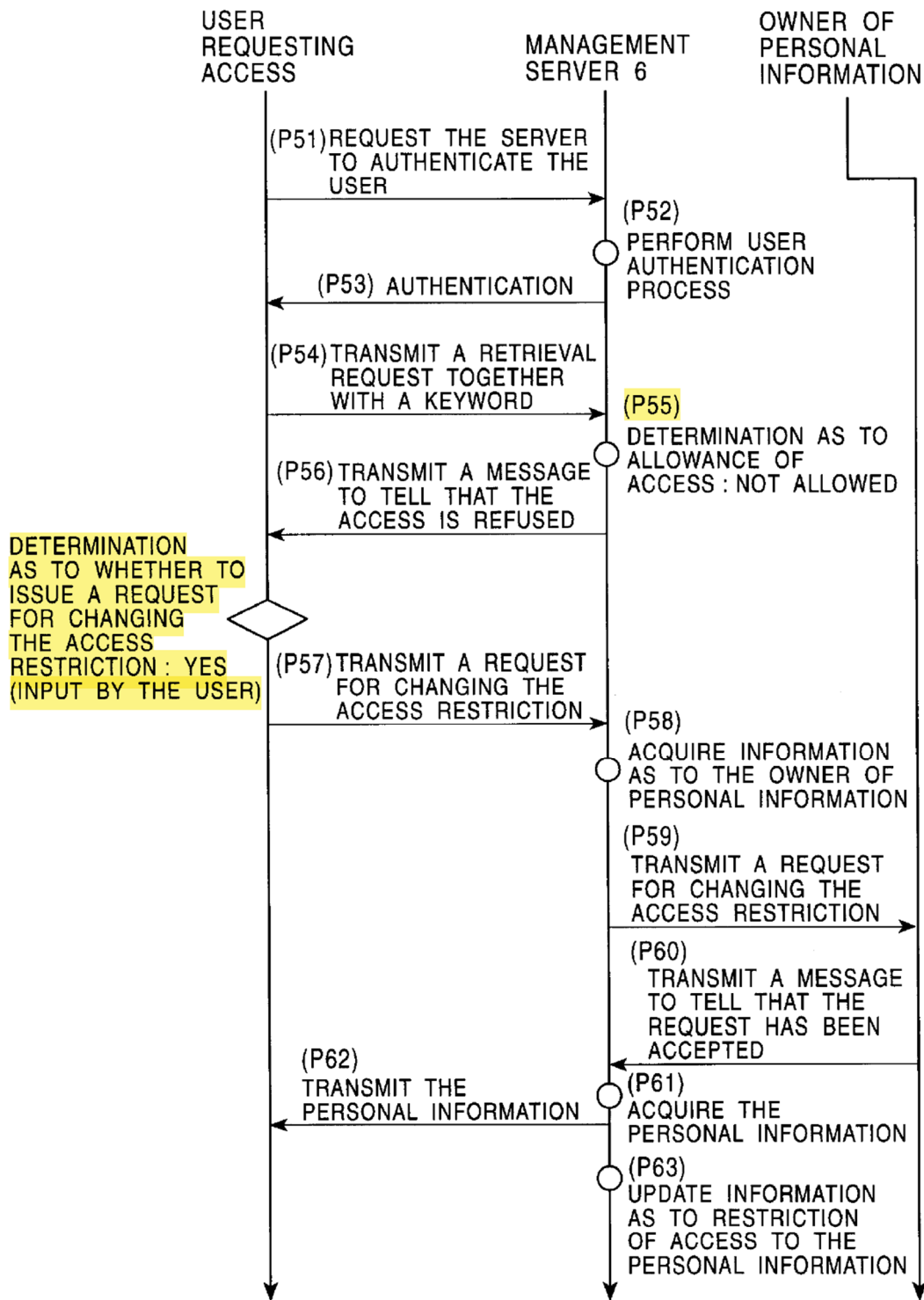
for changing the access restriction,” to which either “yes” or “no” can be “input by the user.”

FIG. 19



Futagami, FIG. 19 (highlighted)

FIG. 20



Futagami, FIG. 20 (highlighted)

[0136] POSAs would have understood, for example, that an obvious implementation to solicit Futagami’s “yes” or “no” “input by the user” would have included a question prompt in the refusal message (*e.g.*, “Would you like to request removal of the access restriction?”).

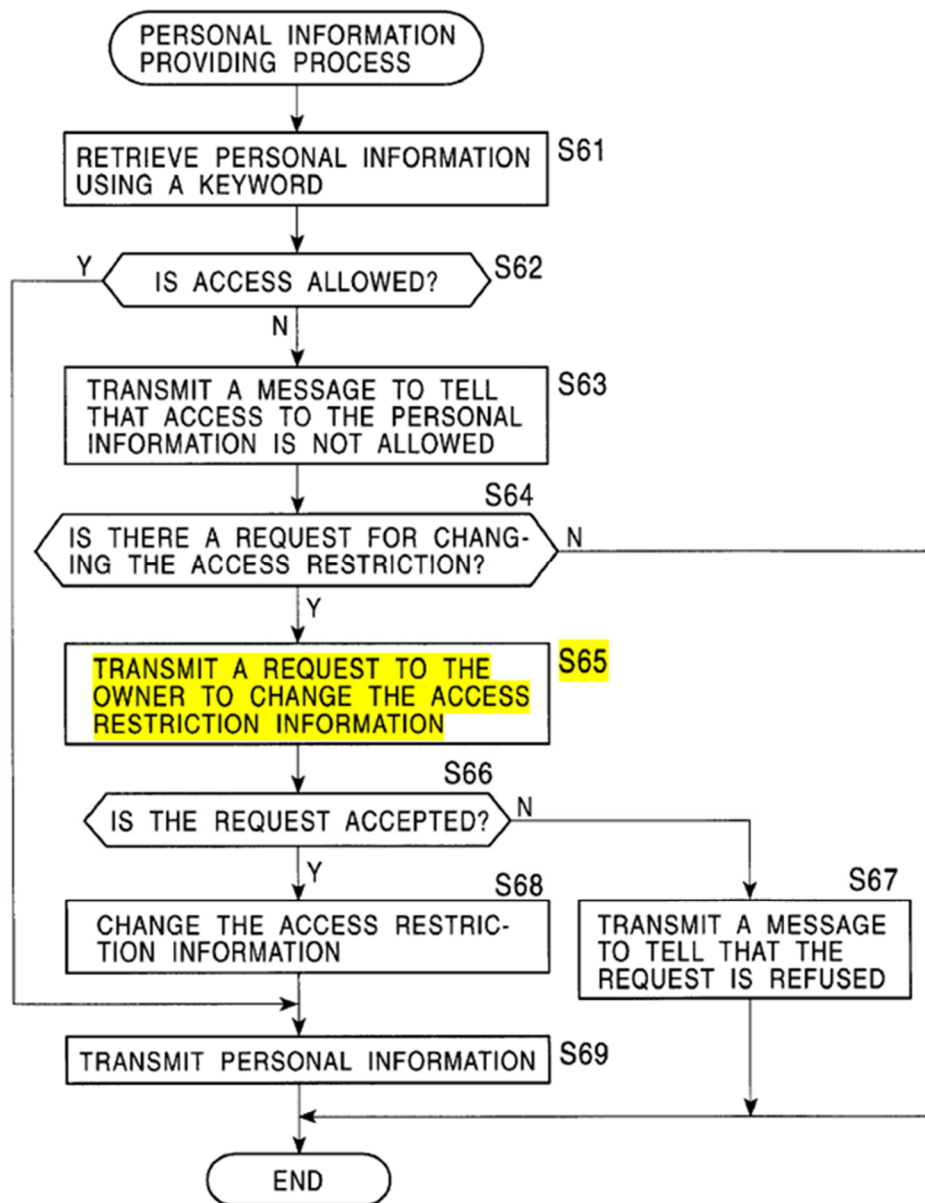
[0137] Thus, Futagami teaches *asking said second wireless device if the access rights are to be requested from said first wireless device after determining that said second wireless device does not have the access rights for said first wireless device.*

[0138] In the combination with Randall and Darling, as I discussed above (§VIII.A.4), the personal information being requested by Bob is Alice’s *first wireless device*’s location, and the access rights are *location access rights*, meeting Element [1C]. As I discussed above (§VIII.A.4), POSAs would have been motivated to implement this asking, 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. 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 I discussed above (§VIII.A.4).

v. Element [1D]: requesting that said location access rights be assigned for said second wireless device by said first wireless device;

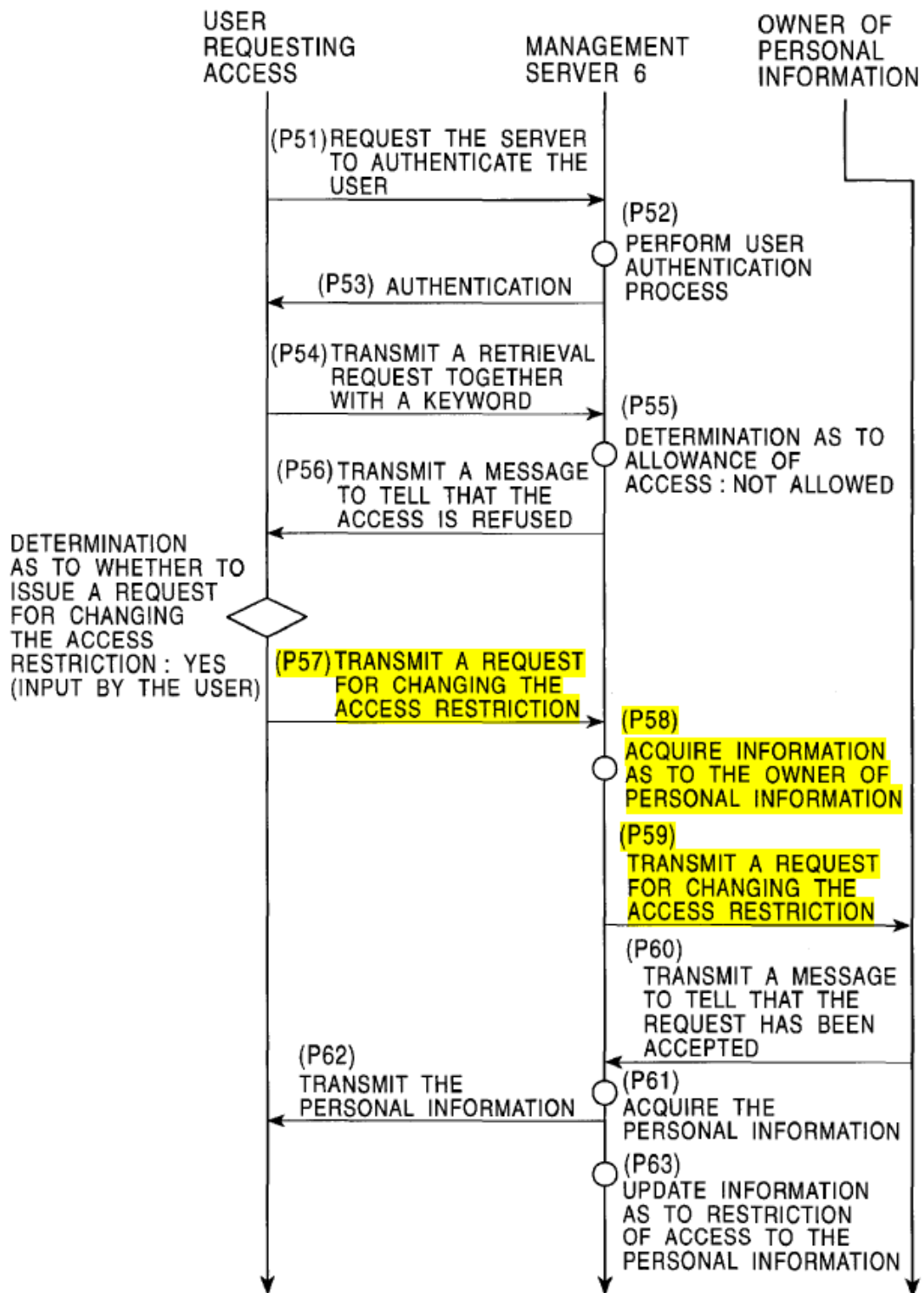
[0139] Futagami teaches that if the user inputs “yes” to the question that I discussed above (§VIII.A.5.a.iv, Element [1C]), the user’s device transmits a “restriction removal request message” to the server, which then “transmit[s] a message (restriction removal inquiry message) to the client terminal of the user who is the owner of the...personal information” (i.e., the *first wireless device*) “to inquire whether to permit the access restriction information to be changed...such that the requester” (i.e., the *second wireless device*) “is permitted to access the personal information.” Futagami, 15:56-62, 16:7-21, 17:1-8, 19:27-59, 20:38-43, FIGs. 17, 20 (both highlighted below).

FIG. 17



Futagami, FIG. 17 (highlighted)

FIG. 20



Futagami, FIG. 20 (highlighted)

[0140] Thus, Futagami teaches *requesting that the access rights to the personal information be assigned for said second wireless device by said first wireless device*.

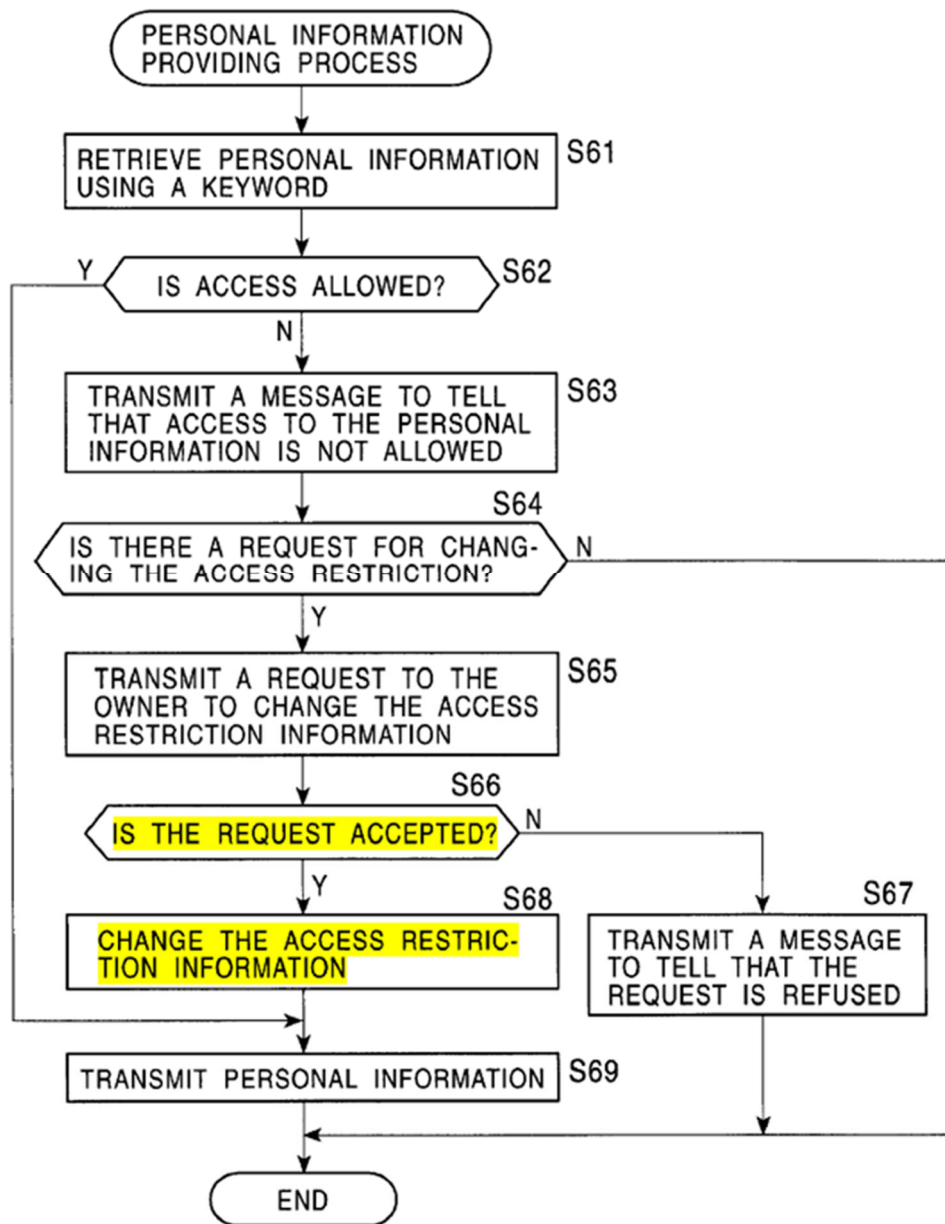
[0141] In the combination with Randall and Darling, as I discussed above (§VIII.A.4; §VIII.A.5.a.iv, Element [1C]), the access rights are *location access rights*, thus meeting Element [1D]. Darling further reinforces that the Randall-Darling-Futagami combination meets Element [1D] by teaching that when “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.” Darling, 3:1-19.

vi. Element [1E]: assigning said location access rights on said server to said second wireless device by said first wireless device;

[0142] 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 *assign said location access rights on said server to Bob’s second wireless device* to access information about her device’s location, 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]. Randall thus discloses Element [1E].

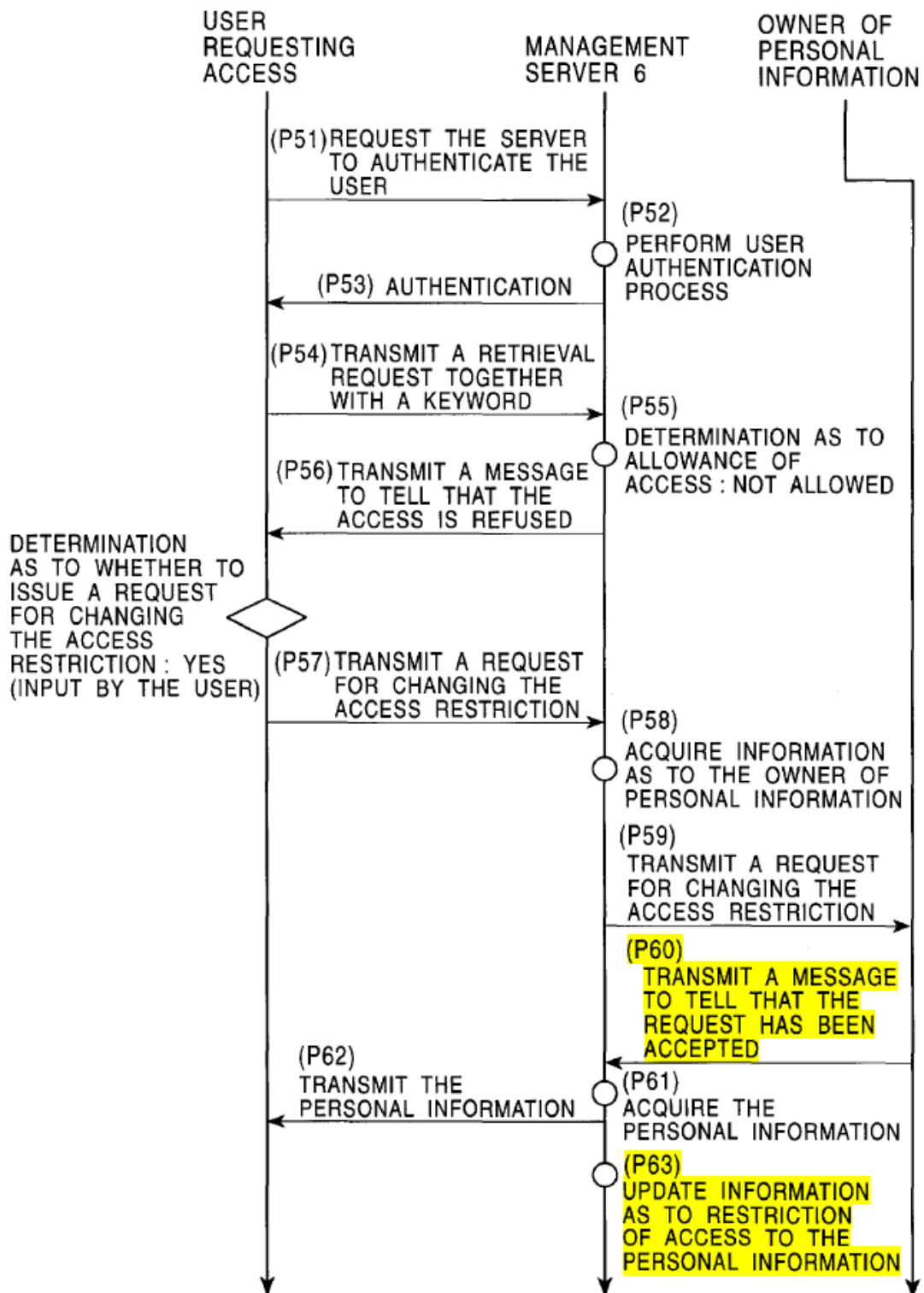
[0143] Further, Futagami teaches to prompt the *first wireless device* user to do this in response to a request as in Element [1D], as I discussed above (§VIII.A.5.a.v). “When the owner of the personal information reads the restriction removal inquiry message, *if he/she decides to give permission*, as to access to the personal information, to the user who has issued the access restriction removal request, *he/she transmits a message (restriction removal approval message)* from his/her client terminal *to the management server 6* to tell that he/she approves the removal of access restriction,” and then “the server...changes the access restriction information” in the server’s database. Futagami, 16:25-58, 17:8-13, 19:60-20:7, FIGs. 17, 20 (both highlighted below).

FIG. 17



Futagami, FIG. 17 (highlighted)

FIG. 20



Futagami, FIG. 20 (highlighted)

[0144] Darling reinforces the Randall-Darling-Futagami combination meeting Element [1E] by teaching that “[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.

vii. Element [1F]: storing said location access rights on said server;

[0145] Randall’s “internet servers host[] extensible databases with attributes.” Randall, [0046]. “The database can define which entities can read different fields: Alice can therefore give Bob rights to read only certain fields in her database.” Randall, [0047]. Thus, when Alice “specif[ies] the remote database access rights given to different people or groups” including Bob, 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 on* the i-server. See Randall, [0501]-[0512] (Alice’s Table 1 database on i-server assigns different permissions to different i-groups, as I discussed above (§VIII.A.5.a.iii, Element [1B])).

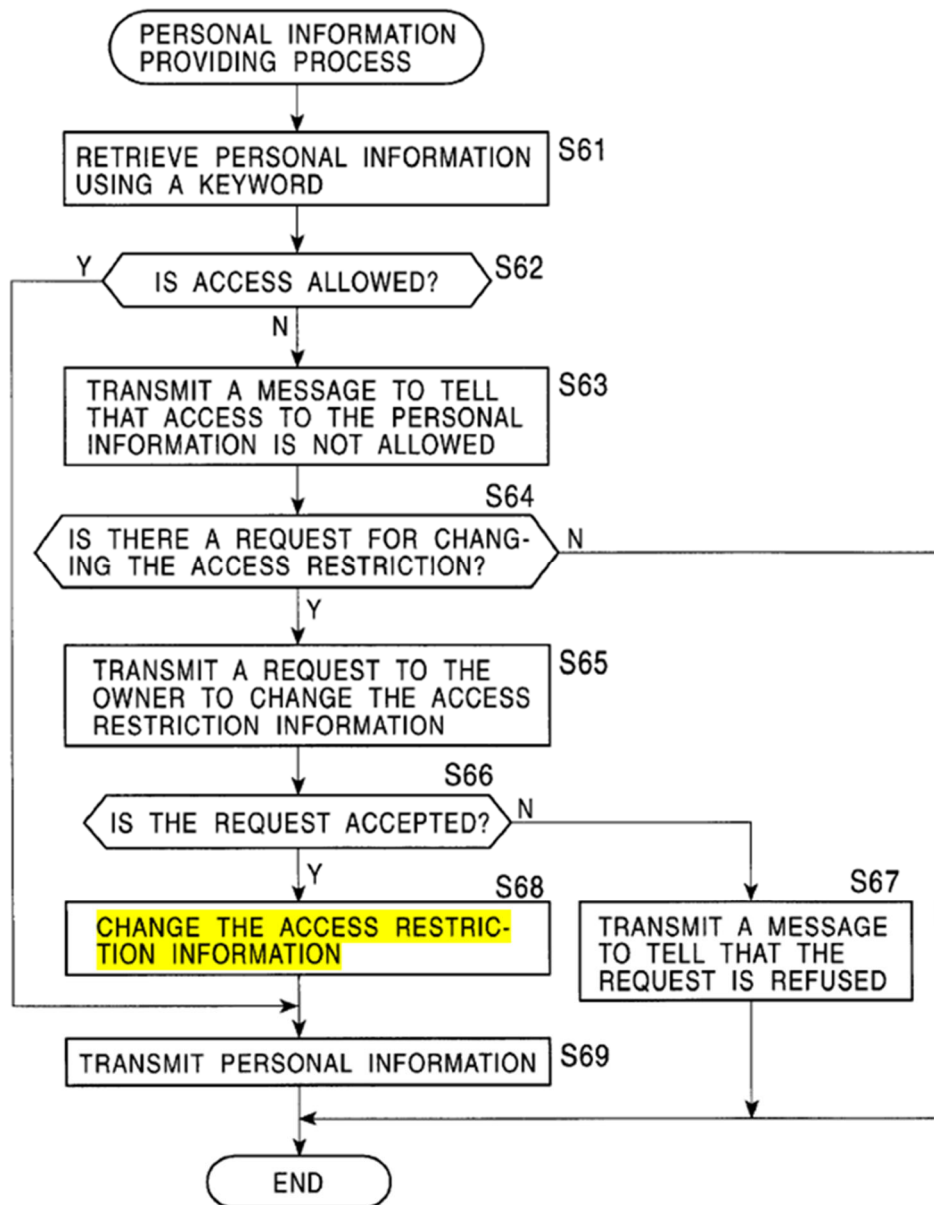
[0146] Randall thus discloses Element [1F].

[0147] Further, Futagami teaches to *store* the *access rights on said server* when the *first wireless device* user provides them in response to a request as in Elements [1D]-[1E] that I discussed above (§VIII.A.5.a.v, §VIII.A.5.a.vi).

Futagami teaches that when “the restriction removal approval message has been

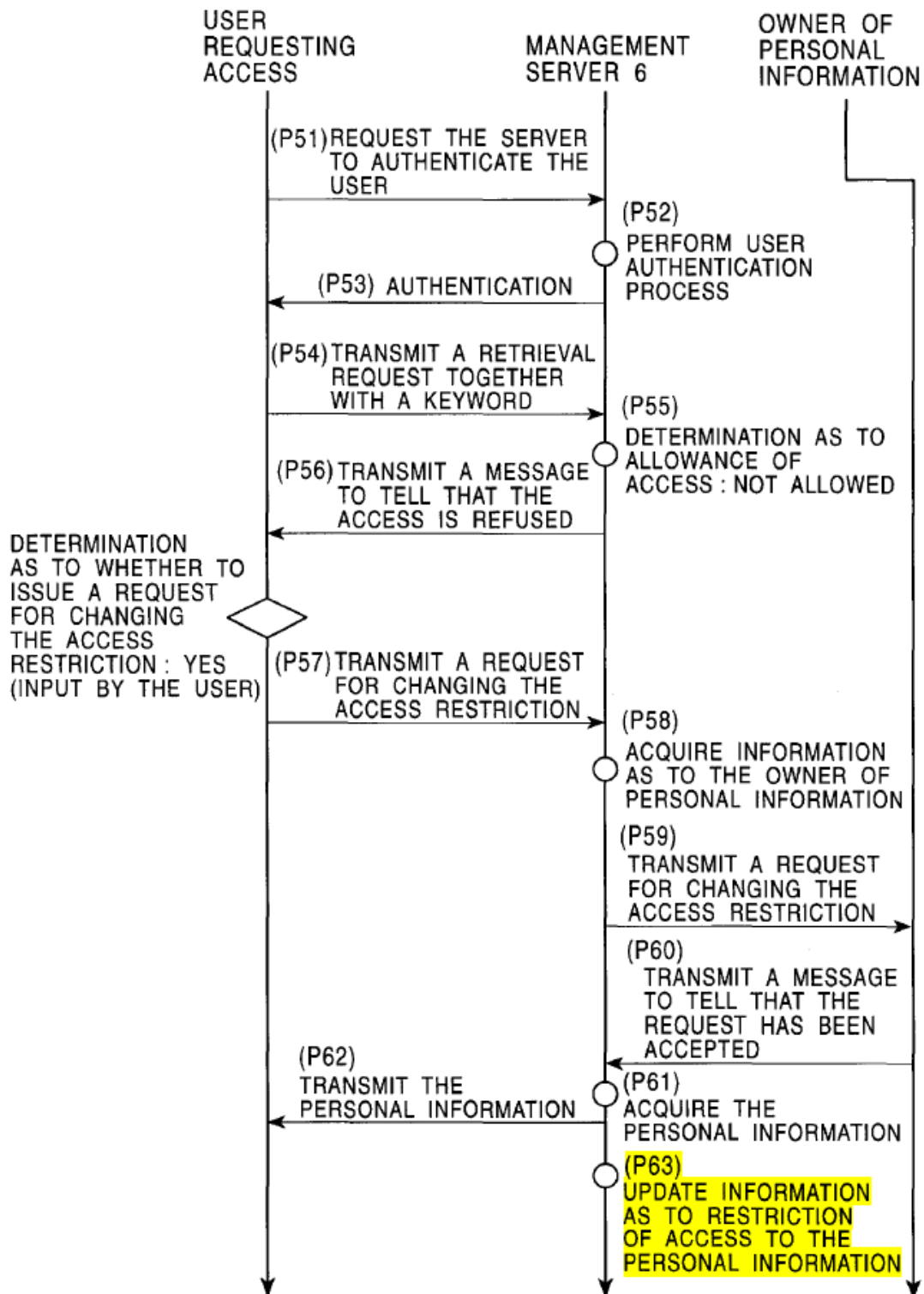
received,...the server...*changes the access restriction information* included in... personal information database 33” on the server (FIG. 9) “such that the user of the client terminal which has transmitted the retrieval request [i.e., the requesting user] is permitted to access the personal information 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)).

FIG. 17



Futagami, FIG. 17 (highlighted)

FIG. 20



Futagami, FIG. 20 (highlighted)

**viii. Element [1G]: determining said access rights
assigned by said first wireless device to said
second wireless device on said server; and**

[0148] Randall teaches that “when one of the people in [Alice’s contact] list...looks at Alice’s ADS Number, (using an application on their...wireless information device[])”—e.g., when Bob’s device requests Alice’s location information as I discussed above (§VIII.A.5.a.ii, Element [1A])—“they see a view onto Alice’s personal data that is defined by Alice.” Randall, [0512], [0049], [0053], [0067], [0509] (“Bob” is Alice’s “contact” and has “access” to Alice’s “information”). 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, the server passes to Bob’s device the information it requests.” Randall, [0067]. This “enabl[es] authorised people to track the location of the GPS wireless information device by polling the server” which has been “updated with the location of” Alice’s device. Randall, p. 24 (Table 4, “People tracking”).

[0149] Thus, once Alice has *assigned* the *access rights* to Bob’s *second wireless device on said server by her first wireless device* as I discussed above (§VIII.A.5.a.vi, Element [1E]), Randall’s server *determines* them, meeting Element [1G].

[0150] Further, Futagami teaches that the server “*determine[s]*” that “the restriction removal approval message has been received from the client terminal of the owner of the personal information,” wherein the message *assigns* the *access rights* for the requesting “client terminal...to access the personal information of interest.” Futagami, 16:49-58

[0151] Because Bob previously did not have *access rights* (*supra* §VIII.A.5.a.iii ([1B])), POSAs would have understood that Randall-Darling-Futagami will *determine* that he now has been *assigned access rights* by Alice before giving him the requested information.

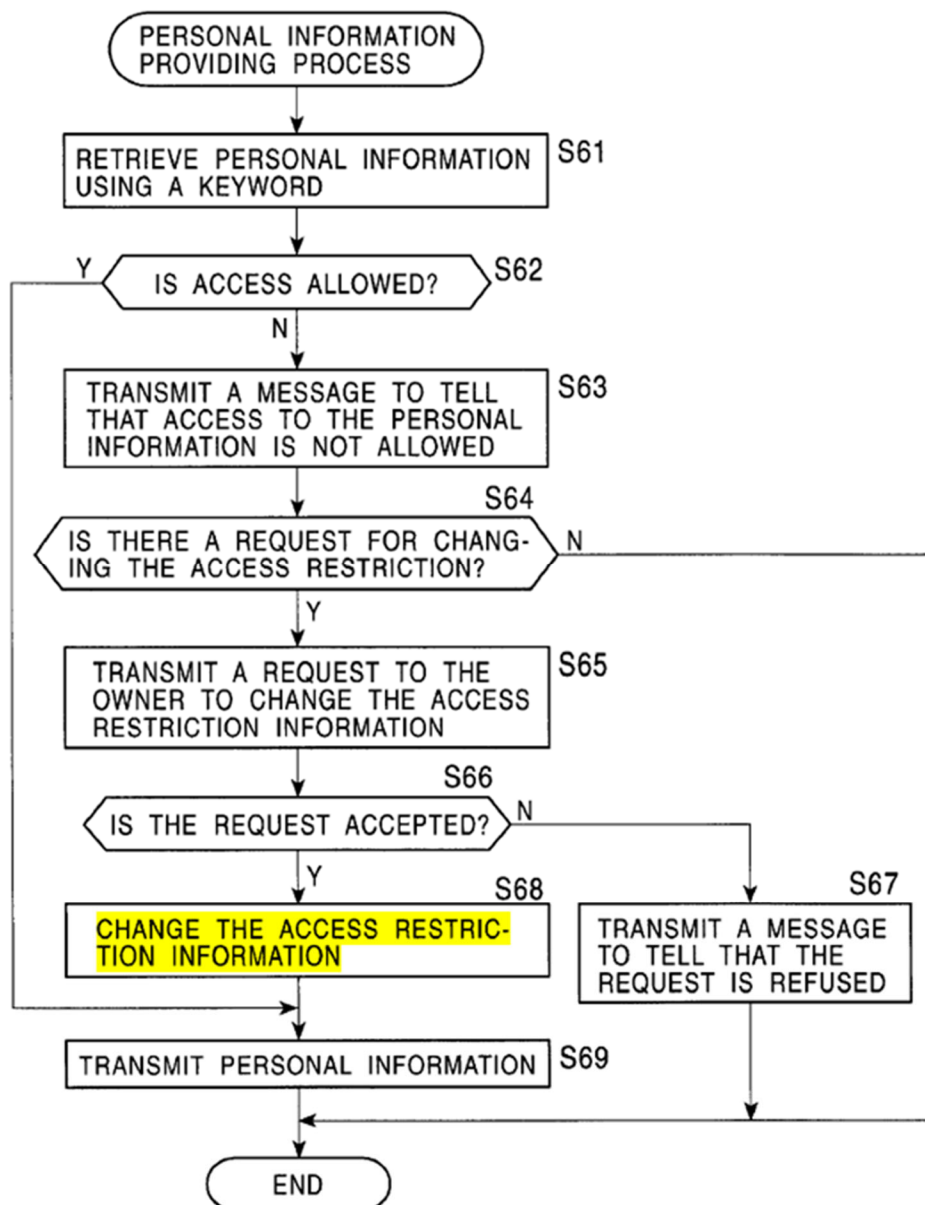
ix. Element [1H]: providing said location from said server to said second wireless device dependent upon said access rights.

[0152] As I discussed above (§VIII.A.5.a.viii, Element [1G]), 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, the server passes to Bob’s device the information it requests,” which may be Alice’s *location*. Randall, [0067]. Thus, Randall, server *provides Alice’s location from said server to Bob’s second wireless device dependent upon said access rights* and, therefore, discloses Element [1H].

[0153] Further, Futagami teaches that “if it is determined...that the restriction removal approval message has been received,” the server “changes the

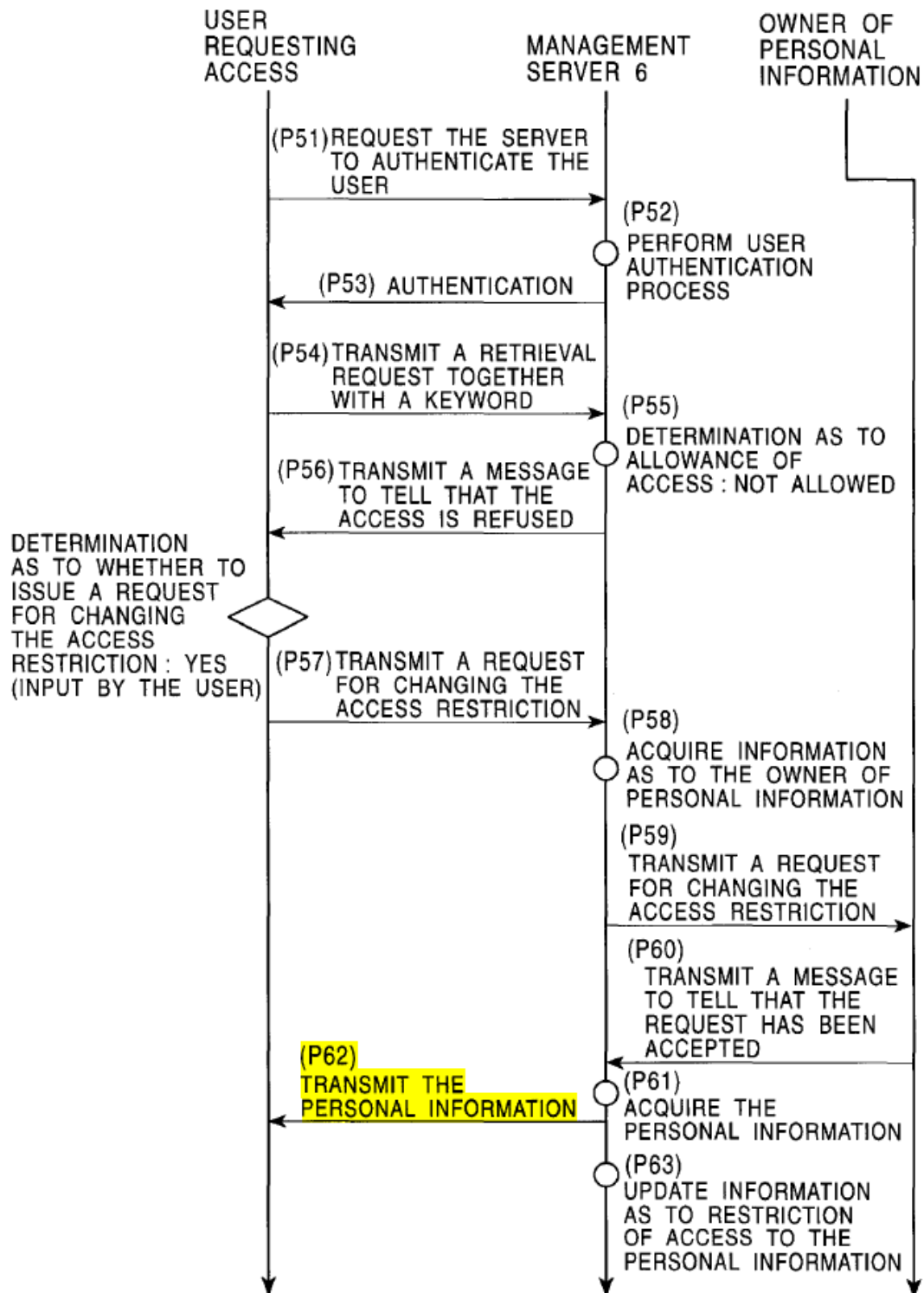
access restriction information” and “transmit[s]” “the personal information...to the client terminal which has issued the retrieval request.” Futagami, 16:49-61, 17:8-11, 19:66-20:7, FIGs. 17, 20 (both highlighted below). Futagami teaches that the information can be transmitted to the requesting device before (FIG. 20) or after (FIG. 17) the storing of the access rights (*supra* §VIII.5.a.vii, Element [1F]), and Randall teaches updating and storing the access rights before sending the information to Bob’s *second wireless device* (*supra* §VIII.A.5.a.iii, Element [1B]; § VIII.A.5.a.vi, Element [1E])). In my opinion, POSAs would have understood that claim elements [1F]-[1H] do not need to be performed in any particular order and, regardless, it would have been obvious to POSAs as a programming design choice to *store location access rights* before *providing Alice’s location* to Bob’s *second wireless device*. Because Bob previously did not have *access rights* (*supra* §VIII.A.5.a.iii, Element [1B]), POSAs would have understood that Randall-Darling-Futagami only provides Bob the requested information dependent upon on a *determination* (*supra* § VIII.A.5.a.viii, Element [1G]) that he now has *access rights*.

FIG. 17



Futagami, FIG. 17 (highlighted)

FIG. 20



Futagami, FIG. 20 (highlighted)

b. Claim 2: The method of claim 1, wherein said first and second wireless devices are cellular phones.

[0154] Randall’s “wireless information device[s]”—including Alice’s and Bob’s—can be “radio *telephones*” or “smart *phones*.” Randall, [0002], [0491] (“Bob’s...mobile *phone*”), [0495] (“Alice’s *phone*”). POSAs would have understood that these are examples of *cellular phones*. Randall further states that the “wireless information device” is “able to communicate” over “GSM[,] UMTS, CDMA and WCDMA mobile radio” networks (Randall, [0002]), which POSAs would have understood are *cellular* networks.

[0155] Thus, in my opinion, Randall-Darling-Futagami meets claim 2.

c. Claim 3: The method of claim 1, 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.

[0156] As I discussed above (§VIII.A.5.a, claim 1), 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* at the time when Bob accesses Alice’s last-updated location. 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*").

[0157] Thus, in my opinion, Randall-Darling-Futagami meets claim 3.

d. Claim 5: The method of claim 1, wherein said location is used to provide a location marker on a map on said second wireless device.

[0158] In Randall's system, once Alice "has subscribed to the location service, then [Alice's] friends[] [such as Bob] could add a '*map*' application to their own devices, which could show their position on digital *maps* and...also show the position of the user [Alice]." Randall, [0021]. Thus, Alice's *location is used to provide a map on Bob's second wireless device* showing Alice's position. POSAs would have understood that "show[ing]" Alice's "position" on the map (Randall, [0021]) involves using Alice's *location to provide a location marker on the map*, because the position is a *location* and showing it would involve displaying a *marker*.

[0159] Alternatively, it would have been an obvious implementation of this disclosure to show Alice's location on the map by *providing a location marker at Alice's location on the map*, because displaying a marker was well-known in POSAs' background knowledge as a beneficial and commonly used option for representing a location of interest (including a current location of a person's wireless device) on a digital map. My testimony regarding POSAs' background

knowledge in this regard is corroborated by several references, as discussed in the paragraphs below.

[0160] Wollrab (EX1014) describes “translat[ing] remote sensing location coordinates into a graphic map image, e.g. a .jpg or .gif file, depicting the relative locations of all members/PDA devices within a family.” Wollrab, 3:28-31. For example, mobile devices like “PDA device 14-1 through 14-5 can display a map image via display device 15-5 through 15-5 depicting the relative locations of all members/PDA devices within a family. Wollrab, 4:43-58. The maps and location markers for different users displayed on a PDA device are illustrated, for example, in Wollrab’s FIG. 4B (markers 44-2 through 44-5). *See also* Wollrab, FIGs. 1-4C.

[0161] Meadows (EX1018) describes “monitoring the geographical location of a subscriber’s mobile cellular telephone, and for providing the location information to an authorized user through the world wide web.” Meadows, 2:2-7. The authorized user can access the location information through various media including a “wireless handheld device 20b.” Meadows, 3:59-67. Meadows describes the location information can be displayed on a map (Meadows, 5:48-57), which shows location markers of various individuals being monitored, as shown in Figure 4B and Figure 5B.

[0162] Sheha (EX1005) discloses displaying a “map and address of the destination telephone number...on the mobile telephone,” and teaches that such a map can include a marker representative of a location of another wireless device, such as shown in Figure 5. Sheha, 4:52-58, 6:51-56 (“FIG. 5. illustrates an example of a Map Caller-ID indicator and a display window detailing a plurality of various possible features utilizing the position and/or address location information of the remote caller and local device or person that is called.”), 9:23-39 (map displays “map location 33 of the caller” and “map location 34 of the destination telephone number”), FIG. 5 (displaying markers representing locations 33 and 34 of both devices).

[0163] Grube (EX1017) describes displaying, on mobile devices (Grube, 4:38-57, 5:13-17), maps of tracked vehicles, and the maps displaying icons to represent the current locations of the tracked vehicles. Grube, 6:59-7:6, *see also* Grube, 6:14-27. Grube’s FIG. 2, for example, “shows an example map display that may be provided to a user of a communication unit” that shows the “the current location of” vehicles “by respective vehicle icons.” Grube, 6:59-65.

[0164] Thus, the above references corroborate my opinion that providing a location marker on a map on a wireless device was within a POSAs’ background knowledge and that a POSA’s reasonable expectation of success in doing so in Randall-Darling-Futagami combination.

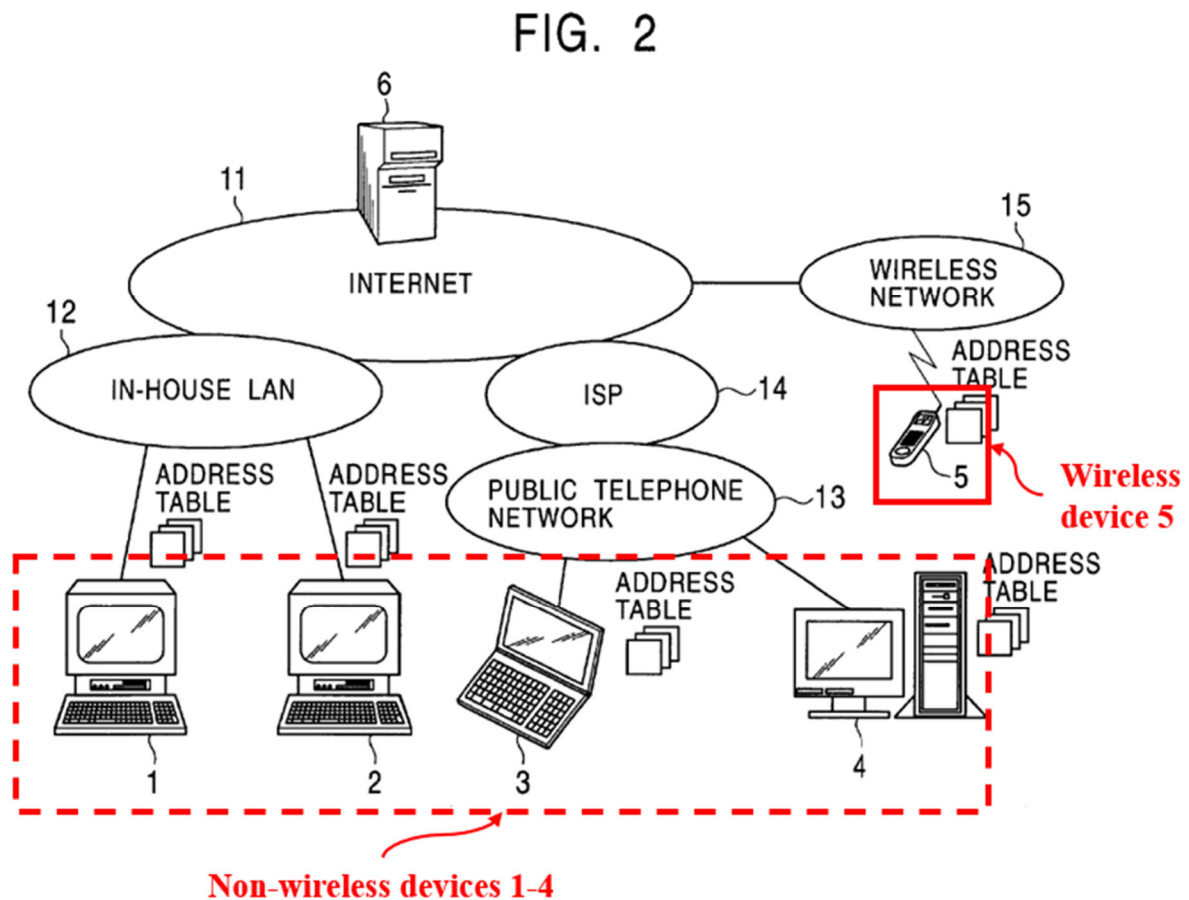
[0165] Thus, in my opinion, Randall-Darling-Futagami meets claim 5.

- e. **Claim 11: The method of claim 1, further comprising requesting said location of said first wireless device by a non-wireless device.**

[0166] Randall teaches that a user like Bob can be “[a]uthenticat[ed]” to access his data and *request* Alice’s data on the i-server, not only from his wireless device, “but also where Bob...uses a public device.” Randall, [0067]; *see also* [0049] (“[a] wireless information device (*as well as web browsers*) can access an entity’s database,” where POSAs would have understood that “web browsers” encompasses *non-wireless devices* because web browsers would be accessible from various non-wireless computing devices, like a desktop computer), [0365] (“users will want...to access data and services from a variety of terminals and devices”). POSAs would have understood that a public device is often a *non-wireless device*, such as a desktop computer in a library or an Internet café, and that Randall’s reference to “web browsers” as alternatives to “wireless information device[s]” is intended to encompass *non-wireless devices*.

[0167] Additionally, Futagami confirms POSAs’ understanding that a “server” like Randall’s that “manages personal information of...users” can serve “users of computers 1-4” as well as “portable telephone device[s],” where the computers 1-4 below (in contrast to the wireless device 5) are *non-wireless devices* because they connect to the Internet (and thereby to the server) by “LAN” or by

“ISP” that is accessed via the “public telephone network” 13, rather than by “wireless network” 15. Futagami, 4:7-10, 1:27-36, FIG. 2 (annotated below to depict *non-wireless* computers 1-4 and wireless device 5; POSAs would also understand the straight lines between computers 1-4 and the networks to represent wired connections, in contrast to the bent line that is commonly used to represent wireless connections, such as between device 5 and wireless network 15):



Futagami, FIG. 2 (annotated)

[0168] Futagami teaches that “personal information of a certain user” can be “*requested* by any of the computers 1-4 or the portable telephone device 5” from the server 6. Futagami, 4:7-20.

[0169] Thus, Randall alone or in combination with Futagami meets *requesting said location of said first wireless device by a non-wireless device*.

Thus, in my opinion, Randall-Darling-Futagami meets claim 11.

f. Claim 12: The method of claim 1, further comprising obtaining a second location from a non-wireless device.

[0170] Darling teaches that a user’s location at a “fixed telephone” (i.e., *non-wireless device*) can be determined “based on a database correlating telephone numbers (or other information) and a measure of location” in a system like Randall’s. Darling, 121:12-15, 2:40-45. Thus, the Randall-Darling-Futagami combination that I discussed above (§VIII.A.4) includes *obtaining a second location from a non-wireless device*.

[0171] Thus, in my opinion, Randall-Darling-Futagami meets claim 12.

g. Claim 13: The method of claim 1, further comprising receiving a login and password from said second wireless device to identify said second wireless device.

[0172] 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]. “Recognising Bob’s device can be achieved in several ways; for example, Bob’s device could have a unique, secret ID number which it transmits to the server; the server could be programmed to authenticate Bob only where the transmitted and secret ID was recognised by it.” Randall, [0067]. “The authentication can use a number of different mechanisms: a basic *WID* [*login*] and *password*/passphrase is likely to be the first line of access,” where the “WID[.]” identifies the “Wireless Information *Device*[.]” Randall, [0380], [0385]. Thus, Randall discloses *receiving a login and password from Bob’s second wireless device to identify said second wireless device*.

[0173] Darling and Futagami both reinforce this teaching. Darling, 11:12-20 (“*Login*” with “Identifier Field” including “Mobile Phone Number” and “*Password* Field”), 19:11-14; Futagami, 8:62-67 (“when the management server 6 receives a retrieval request from a client terminal, the management server 6 may request presentation of the user *identification* and the *password* of the user of that [requesting] client terminal so as to authenticate the user”).

[0174] Thus, in my opinion, Randall-Darling-Futagami meets claim 13.

- h. Claim 14: The method of claim 1, wherein said location of said first wireless device is requested by receiving input, in the form of a telephone number of said first wireless device, on said second wireless device.**

[0175] Randall teaches that “[a] wireless information device...can access an entity’s database by sending to the server an unchanging pointer or key (an ‘ADS Number’) which is [a number] unique to that entity.” Randall, [0049]. “[I]f Bob is given Alice’s ordinary *telephone number*, but Alice is an ADS system user, then Bob can use the ordinary number to access a web database which can download Alice’s ADS Number directly to Bob’s device.” Randall, [0073]. “When Bob’s device sends Alice’s ADS Number to the server, then the server recognises Bob’s device and allows that device to read Alice’s information held on the database which is specified as being accessible to Bob.” Randall, [0049]. Thus, Randall teaches that the *location of Alice’s first wireless device is requested by receiving input, in the form of a telephone number of said first wireless device, on Bob’s second wireless device.*

[0176] Darling reinforces this, by teaching to allow a user to “Find People” by inputting the target user’s “Mobile Number” as a “search field.” Darling, 34:22-35:33.

[0177] Thus, in my opinion, Randall-Darling-Futagami meets claim 14.

- i. **Claim 15: The method of claim 1, further comprising using said first wireless device to modify said location access rights for said second wireless device.**

[0178] 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 *using Alice’s first wireless device to modify said location access rights for Bob’s second wireless device* (e.g., if Alice has set the “friend” i-Group and not the ‘business’ i-Group to have access to her location).

[0179] Another way Randall meets claim 15 is by teaching that “[t]he user [e.g., Alice] must be able to switch location information on for a person or group of people” by “select[ing] the person and allow[ing] access...for a pre-defined period of time” that “should be easily extensible by the user.” Randall, [0144].

[0180] 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.

[0181] Thus, in my opinion, Randall-Darling-Futagami meets claim 15.

- j. **Claim 16: The method of claim 1, further comprising the ability to use said first wireless device to delete said location access rights for said second wireless device.**

[0182] As I discussed above (§VIII.A.5.i, claim 15), Alice can make “Location information” “Visible to specific people (or groups) for a specific period of time.” Randall, [0136]. Randall teaches that in “a simple step,” Alice can “change a visibility setting, in particular location information.” Randall, [0141]. Alice can “switch location information on for a person” (e.g., for Bob) “for a specific period of time, i.e. for the half hour that the group of friends are trying to locate each other in town,” and “[a]t the end of the pre-defined period the location information” can “again *become invisible*.” Randall, [0143]-[0144]. Thus, by pre-defining a period of time after which Bob’s access to Alice’s location ends, Alice’s *first wireless device can delete said location access rights for Bob’s second wireless device*.

[0183] 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].

[0184] 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.

[0185] Thus, in my opinion, Randall-Darling-Futagami meets claim 16.

k. Claim 19: The method of claim 1, further comprising selecting said first wireless device from an identifier list.

[0186] Each of Randall’s wireless devices can have “a directory application” that “contains a user’s contacts list.” Randall, [0009]. A user’s “contacts database”—called their “Universe”—“is the list of all the entities known to an entity and to whom access to more private data is to be given.” Randall, [0511]. “Table 2” is “an example” of “Alice’s Universe.” Randall, [0511].

TABLE 2		
<u>ALICES UNIVERSE</u>		
NAME	DETAILS	i-GROUP
Aardvark plumbers	Number, email, address etc . . .	contractors
Bently, John	Number, email, address etc . . .	friend
Coppermill Corp	Number, email, address etc . . .	contractors
Davies, Charles	Number, email, address etc . . .	work 1
Entwistle, Peter	Number, email, address etc . . .	partner, friend
Greenfield Ventures	Number, email, address etc . . .	business 1

[0187] As Table 2 shows, a user’s Universe displays *an identifier list*, listing the user’s contacts with identifiers such as each contact’s “name.”

[0188] Table 2 shows “Alice’s Universe” as an example; Randall teaches that Bob similarly has his own “Universe” contacts list, and Bob and Alice can each be included as contacts displayed in each other’s contacts lists. Randall,

[0509]-[0510] (“Bob’s details” are in “Alice’s Universe” and “downloaded to Alice’s mobile device,” and likewise “Alice’s contact” is provided to “Bob’s device[]”), [0060] (Bob “view[s]” “Alice’s contact information” on his device), p. 24 Table 4 (“Data freshness”: “visual indication” regarding “Alice’s contact information can be shown on Bob’s wireless information device”). Even if Randall had not explicitly taught that, it would have been an obvious implementation option to allow any wireless device users to subscribe to the same functionality (including contacts functionality and location functionality) in Randall’s system, and to allow any user to include any other user in their contacts list.

[0189] Thus, Bob’s contact list is displayed on Bob’s wireless device and Alice’s contact list is displayed on Alice’s wireless device.

[0190] Taking Bob as an example, Randall teaches that “[w]hen one of the people in [Alice’s] list...looks at Alice[]...on their...wireless information device[]...in their contacts application” (i.e., when Bob selects Alice in his device’s displayed contacts list), “they see a view onto Alice’s personal data that is defined by Alice.” Randall, [0512], [0049], [0053], [0067], [0509] (“Bob” is Alice’s “contact” and has “access” to Alice’s “information”). That view is of a subset of Alice’s “Identity” information which contains data “objects” that are “information relating to an individual.” Randall, [0180]-[0187], [0118], [0505]-

[0508], [0021]. Bob’s device can “display an icon or other shorthand” for such an object, and Bob can “select[] the icon or shorthand” to view “attributes of the object.” Randall, [0022], [0060] (“Bob’s device” can display “icon appearing next to Alice’s contact information”). A “user’s data object” in “a contacts application” can have a “location attribute” used to “show the position of the user.” Randall, [0021].

[0191] Thus, Randall teaches, or, at minimum, renders obvious, that an entry representing Alice and her device’s location can be displayed in Bob’s contacts list, and Bob can select that entry to view Alice’s location attribute (and Alice can do the same in her contacts list to view Bob’s location). In my opinion, POSAs would have understood this to disclose *selecting Alice’s first wireless device from an identifier list*, or at minimum to render such selection obvious. Randall, [0012] (“user could click on” data displayed on wireless device “to perform...actions”), [0146]-[0151] (user can take “action” on a “specific contact” in “their buddy list”).

[0192] Additionally, it would have been obvious to implement Bob’s device to allow Bob to *select Alice’s first wireless device* from Bob’s displayed contacts list (*identifier list*) to request Alice’s location information. Darling teaches to provide a “Search for a friend” “Menu” that “Allows the user to scroll through the list of people that they are allowed to view locations for and find out

where they are.” Darling, 41:2-5. Selecting another user from a displayed contacts list was also well-known in POSAs’ background knowledge as a suitable option with reasonable expectation of success for “look[ing] at [another user’s] ADS Number” to “see a view onto [that user’s] personal data” (Randall, [0512]) such as location.

[0193] My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed in the paragraphs below:

[0194] Smith discloses a system to provide a user interface for a cellphone, including contact list functionality that provides electronic business cards (“EBCs”). Smith, 5:15-18, 6:65-7:3, 7:41-49, 10:55-60; FIGs. 14-16. An example of this routine and conventional functionality is shown in Figure 15A:

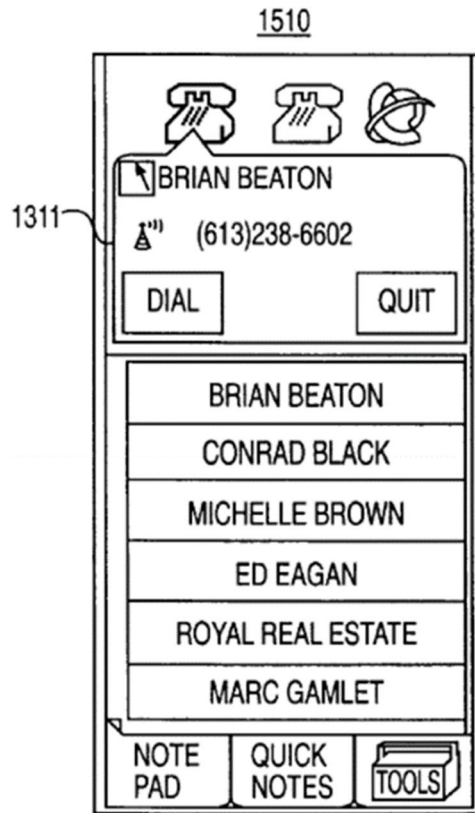
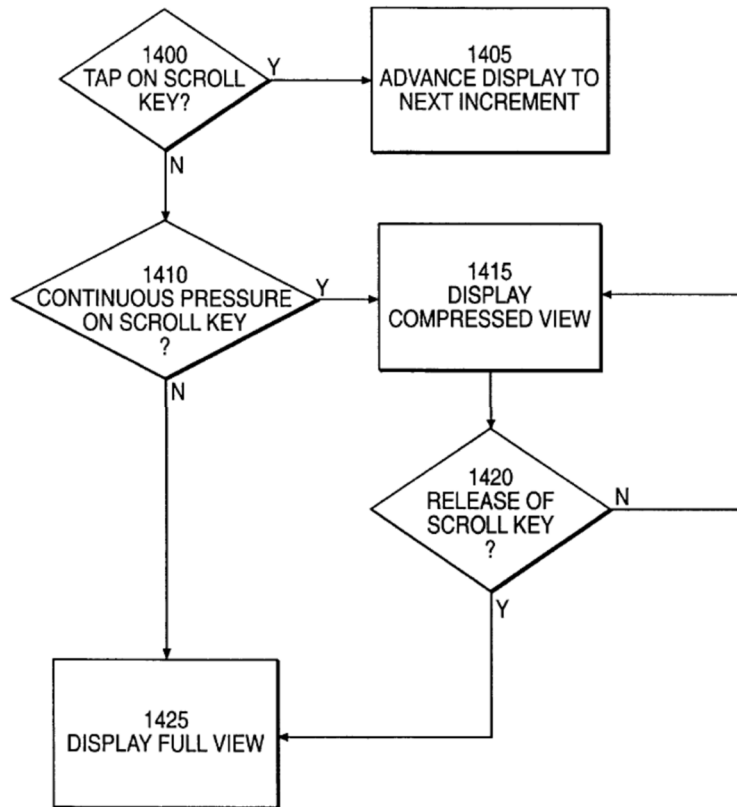


FIG. 15A

Smith, FIG. 15A

[0195] Smith describes that the telephone can “receiv[e] a user input selecting an icon, one of the entries corresponding to the selected icon is selected.” Smith, 3:24-26, 5:15-18, 6:53-7:3, 7:41-9:61, 10:29-11:4. Smith describes various examples of input devices, including a keypad with buttons, an on-screen keyboard, or using handwriting recognition. Smith, 7:12-20. For example, Smith describes a process for scrolling through a contact list, shown in Figure 14 below. The flowchart illustrates a process that allows a user to scroll through the contact list using physical or graphical buttons. Smith, 9:42-61, 10:67-11:3, FIG. 14. The

user can use the process to scroll to a desired contact and ultimately select a contact to call. Smith, 9:42-61, 10:67-11:3, FIG. 14.



Smith, FIG. 14

[0196] Han (EX1027) describes “a position tracking service system and method using wireless communication and Internet.” Han, [0002]. Han discloses a display screen from which a user “selects the target for which he intends to receive position tracking service via the registration window output on the screen of the computer.” Han, [0033]. Therefore, Han corroborates that a user manually selecting to receive position information of a target that is selected from a list of targets was within a POSAs’ background knowledge as a suitable option

for selecting a contact of interest, including to access their location and that a POSA would have had a reasonable expectation of success doing so in the Sheha-Smith-Carey combination.

[0197] Meadows (EX1018) describes a monitoring system that “monitor[s] the geographical location of individuals within a geographical region from a remote location.” Meadows, 2:29-32. As shown in Meadows’s FIG. 4A (reproduced below), Meadows describes that a user is “presented with a list of names of persons” and from that list the user can manually “select[] which of the individuals to monitor” for their location information. Meadows, 5:30-47.

Therefore, Meadows also corroborates that a user manually selecting individuals to receive location information for from a displayed contacts list in a graphical user interface was within a POSAs’ background knowledge as a suitable option for selecting a contact of interest, including to access their location and that a POSA would have had a reasonable expectation of success doing so in the Sheha-Smith-Carey combination.

WELCOME TO THE WORLD WIDE WATCHER		
ACCESS CODE: <u>1582</u>		
		<u>STATUS</u>
1. DEBORAH	(301) 663-9580	ACTIVE
2. MARCIA	(410) 222-3344	ACTIVE
3. BRIAN	(301) 663-9301	ACTIVE
4. ADAM	(301) 494-5000	ACTIVE
PLEASE SELECT INDIVIDUALS TO MONITOR		
①	②	③ ④ ALL

FIG. 4a

Meadows, FIG. 4a

[0198] Thus, in my opinion, Randall-Darling-Futagami meets claim

19.

- I. **Claim 20: The method of claim 1, further comprising selecting said first wireless device from an identifier list wherein said identifier list comprises a list of telephone numbers.**

[0199] Randall teaches *selecting said first wireless device from an identifier list* as I discussed above (§VIII.A.5.k, claim 19). As Table 2 (highlighted below) illustrates, Randall's *identifier list comprises a list of telephone numbers*.
Randall, [0511].

TABLE 2

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

[0200] Thus, in my opinion, Randall-Darling-Futagami meets claim 20.

- m. **Claim 21: The method of claim 1, further comprising selecting said first wireless device from an identifier list wherein said identifier list comprises a list of user profiles.**

[0201] Randall-Darling-Futagami meets *selecting said first wireless device from an identifier list, from which said first wireless device is selected*, as I discussed above (§VIII.A.5.k, claim 19). As Randall’s Table 2 (highlighted below) illustrates, the *identifier list comprises a list of user profiles* containing “details” on each user. Randall, [0511].

TABLE 2

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

[0202] Thus, in my opinion, Randall-Darling-Futagami meets claim

21.

- n. **Claim 22: The method of claim 1, further comprising requesting a second location from said first wireless device from a non-wireless device, wherein said non-wireless device does not comprise a positioning system.**

[0203] As I discussed above (§VIII.A.5.e, claim 11), Randall alone or in combination with Futagami teaches *requesting a location* (and subsequent location updates—Randall, p. 24 “People tracking”) *from said first wireless device from a non-wireless device*. POSAs would have understood that it was typical, common, and obvious for such a *non-wireless device* to be a non-mobile device (e.g., Futagami’s “fixed” device—Futagami, 4:7-10, 1:27-36, FIG. 2) that does *not comprise a positioning system* given that it does not regularly change position. My opinion in this regard is corroborated by EX1073 (“Kari”), which explains that unlike a “mobile communication device,” where “real-time location” is obtained

“from the GPS system...or via the positioning service of a mobile communications network,” when “a desktop PC or the like” is used, its “**location is not usually changed very often**” such that “the location information can be stored[,] e.g.[,] in a text-form file where the information can be retrieved and edited by the user” (i.e., the location is manually input by the user, rather than automatically found from a positioning system). Kari (EX1073), 6:15-23.

[0204] Thus, in my opinion, Randall-Darling-Futagami meets claim 22.

o. Claim 23: The method of claim 1, wherein said location is provided by a positioning system.

[0205] Randall’s wireless device uses “GPS” to determine its location and provide it to the i-server. Randall, p. 24 Table 4 (“People tracking”), p. 22 Table 1 (“GPS location”), p. 29 (“Route finder”). A POSA would have known that “GPS” stands for “global positioning system” and is *a positioning system*. The ’540 patent further admits this was prior-art “background” knowledge. EX1001, 1:19-32.

[0206] Thus, in my opinion, Randall-Darling-Futagami meets claim 23.

p. Claim 24

i. Preamble [24PRE]: The method of claim 1, further comprising:

[0207] Claim 24’s preamble only recites “The method of claim 1 further comprising.” Randall-Darling-Futagami meets the method of claim 1 for the same reasons I discussed above (*see supra* §VIII.A.5.a.i). As with claim 1, I understand that the preamble is not necessarily limiting. In this case, whether or not it is limiting does not affect my opinion as Randall-Darling-Futagami meets the preamble of claim 24. As I discuss further below, Randall-Darling-Futagami meets the remaining Elements added by claim 24.

ii. Element [24A]: providing a first dating matching profile by said first wireless device;

[0208] Randall’s system enables any user, including Alice, to provide via her *first wireless device* a virtual profile to share information about herself. Randall, [0118] (“Identity allows people to share information about themselves using their wireless information devices—i.e. it is a mechanism for establishing a virtual identity by posting information onto an extensible database.”). Via Randall’s “New buddy finder” service, “[c]ompatible personal profiles stored on the I-server can be readily identified and the corresponding individuals alerted to their mutual presence at a party, club etc.” Randall, p. 24 (Table 4). In this context where personal profiles are shared and matched based on whether they are

“compatible,” POSAs would have understood that Alice’s profile functions as *a first dating matching profile* provided by Alice’s (*first*) *wireless device*. Darling similarly teaches a “Pick-Up Profile” (a.k.a. “Get Lucky Profile”) for each *wireless device* user. Darling, 57:12-60:1.

[0209] Thus, in my opinion, Randall-Darling-Futagami meets Element [24A].

iii. Element [24B]: providing a second dating matching profile by said second wireless device;

[0210] For the same reasons I discussed above (§VIII.A.5.p.ii, Element [24A]), Bob’s personal profile is *a second dating matching profile provided by Bob’s (said second) wireless device* in the “New buddy finder” application. Randall, p. 24 (Table 4); Darling, 57:12-60:1.

[0211] Thus, in my opinion, Randall-Darling-Futagami meets Element [24B].

iv. Element [24C]: obtaining a second location, wherein said second location is the location of said second wireless device; and

[0212] In my opinion, POSAs would have understood Randall’s example of Alice sharing her location with Bob to be a generic example that is equally applicable to Bob sharing his location with Alice. Randall, [0067] (“Bob also has stored on the server his own personal information”). Randall teaches that any “user must be able to switch location information on for a person or group of

people..., i.e. being able to select the person and allow access” to make the user’s device’s location “[v]isible to specific people (or groups) for a specific period of time” (i.e., visible to other people)—e.g., “for the half hour that the group of friends are trying to locate each other in town.” Randall, [0144], [0136], [0143]. Thus, Bob can also “choose to subscribe to [the] service which allowed others to track his...location” such that “[t]he I-server is up-dated with the location of” Bob’s “GPS wireless information device.” Randall, [0021], p. 24 (“People tracking”). That is, a *second location* of Bob’s *second wireless device* can be obtained.

[0213] Thus, in my opinion, Randall-Darling-Futagami meets Element [24C].

v. Element [24D]: utilizing said location, said second location, said first dating matching profile, and said second dating matching profile to provide an alert.

[0214] Via Randall’s “New buddy finder” service, “[c]ompatible personal profiles (e.g., *first and second dating matching profiles*) stored on the I-server can be readily identified and the corresponding individuals *alerted* to their mutual presence at a party, club etc.” (thus *utilizing the locations* of the devices). Randall, p. 24. Darling similarly teaches, “After checking location, the system checks for matches at the current location for other people...who match profiles and preferences” and “sends...a message.” Darling, 58:40-59:24. *Said location*

and *said second location* are utilized to determine that Alice and Bob are mutually present at a place, and their two *dating matching profiles* are utilized to determine that they are compatible, to provide the alert.

[0215] In my opinion, POSAs would have understood that this can be done whether or not Alice and Bob are already contacts of each other, as even people who are contacts may not realize how compatible their profiles are, and/or may appreciate an alert that a compatible contact is nearby for meeting up.

[0216] Thus, in my opinion, Randall-Darling-Futagami meets Element [24D].

q. **Claim 29: The method of claim 1, wherein said location access rights are only assigned for a period of time.**

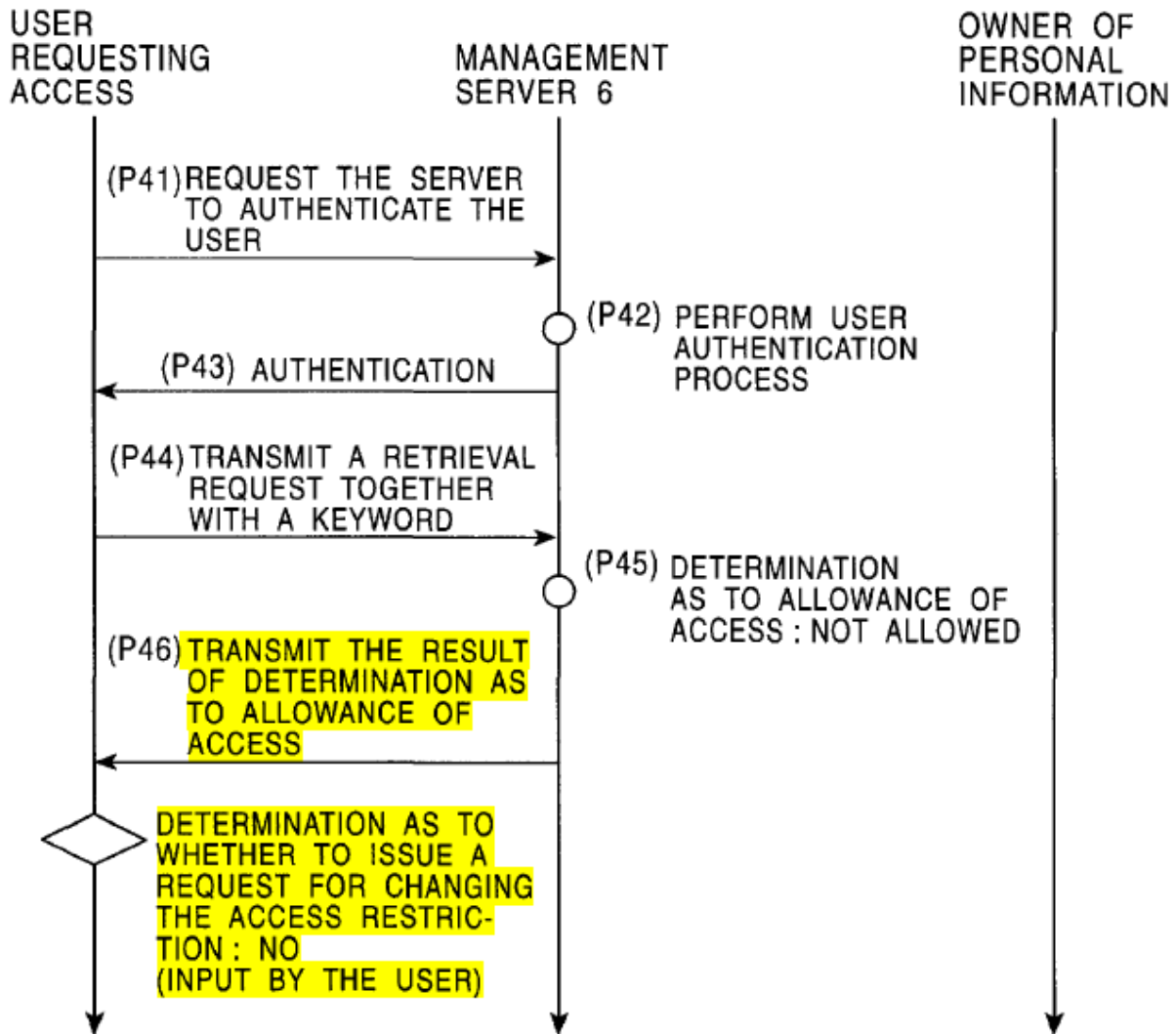
[0217] Randall teaches that Alice can specify that the *location access rights are only assigned* to make her “[l]ocation information” “[v]isible to specific people” (e.g., to Bob) “*for a specific period of time*” such as “the half hour that the group of friends are trying to locate each other in town.” Randall, [0136], [0143]. After which, “[a]t the end of the pre-defined period[,] the location information” can “again become invisible.” Randall, [0144].

[0218] Thus, in my opinion, Randall-Darling-Futagami meets claim 29.

- r. **Claim 33: The method of claim 1, further comprising displaying on said second wireless device the opportunity to request said location access rights from said first wireless device.**

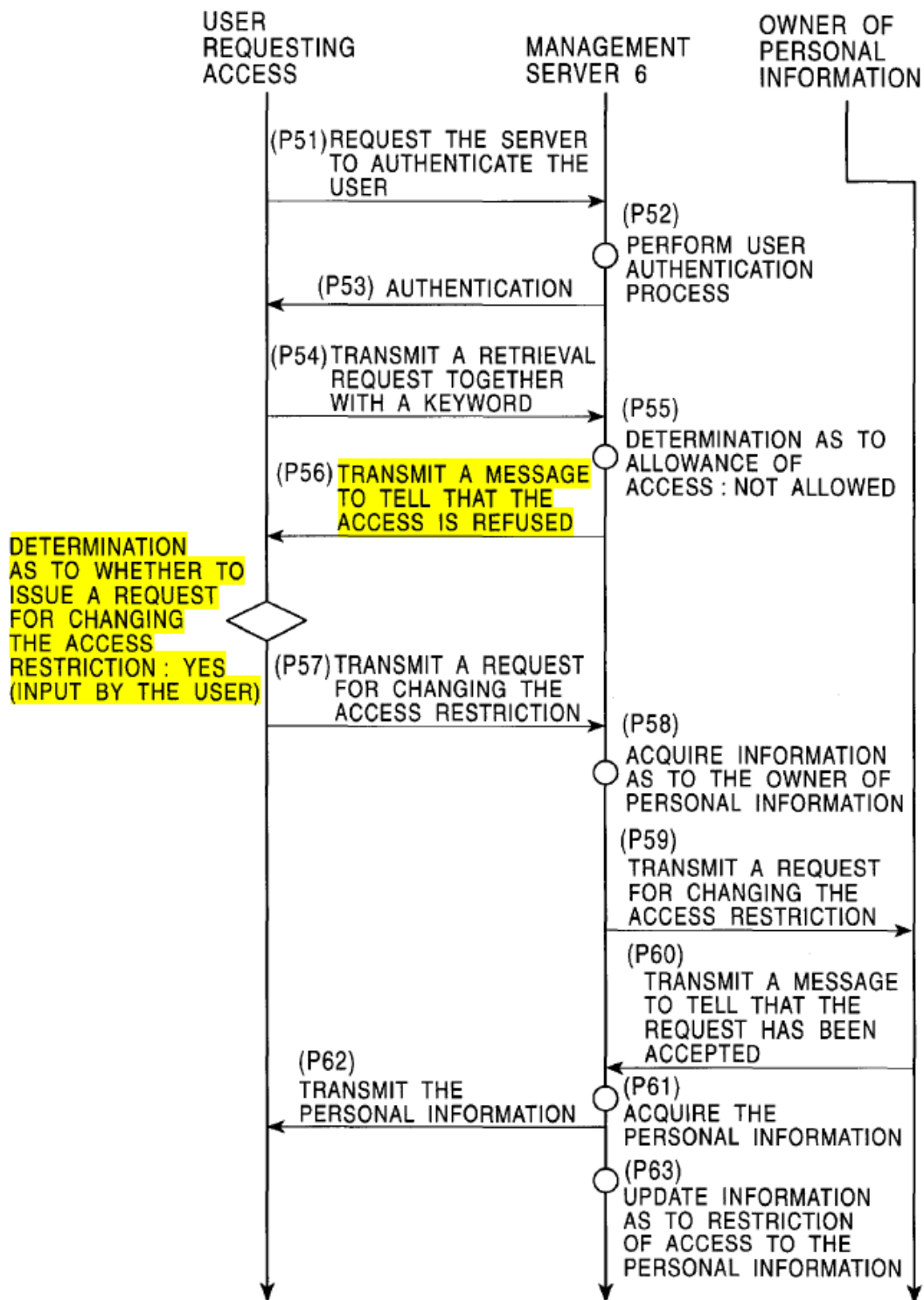
[0219] Futagami teaches that after it determining that *said second wireless device* does not have permission to access *said first wireless device* user's personal information, the server transmits a "refusal message" to the *second wireless device*. Futagami, 15:40-53. "When the client terminal receives the refusal message...the refusal message is ***displayed***." Futagami, 15:54-56. As I discussed above (§VIII.A.5.a.iv, Element [1C]), "[w]hen the user reads the refusal message," this "***displayed***" message provides the user *the opportunity*, "if the user still wants to access the...personal information" of the other user, to make a "restriction removal request" to "change the access restriction information" (*i.e.*, *request said location access rights from said first wireless device*) "so that the user is allowed to access the personal information." Futagami, 15:54-62, 19:15-23, 19:47-59, FIGs. 19-20 (which I have highlighted below—user inputs "yes" or "no" as "to whether to issue a request for changing the access restriction"); *see also supra* §VIII.A.5.a.ic (Element [1C]) (where I discuss the obviousness to POSAs of displaying a question prompt in a refusal message).

FIG. 19



Futagami, FIG. 19 (highlighted)

FIG. 20



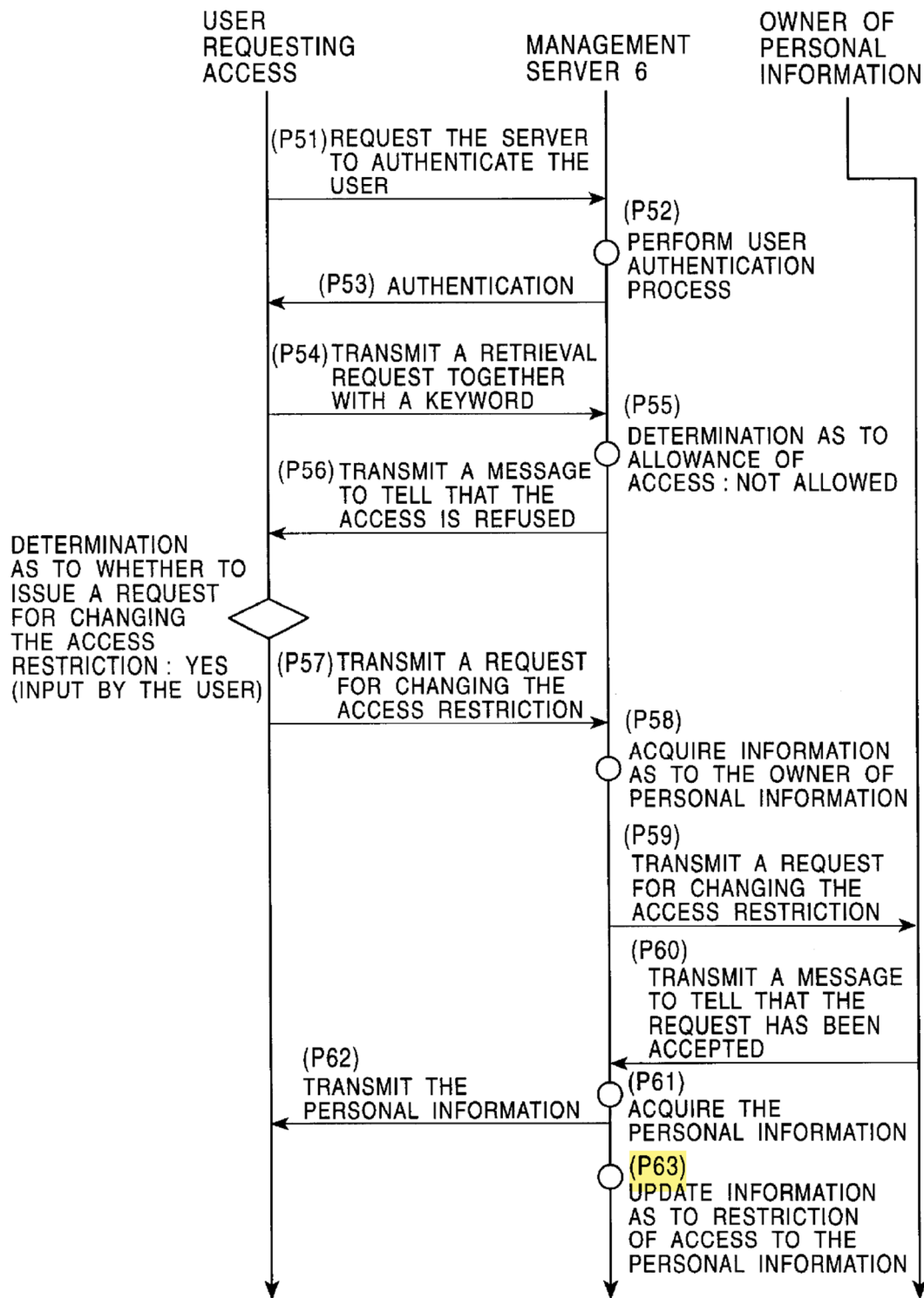
Futagami, FIG. 20 (highlighted)

[0220] Thus, in my opinion, Randall-Darling-Futagami meets claim 33.

- s. **Claim 34: The method of claim 1, wherein said first wireless device is requested to manually allow said location access rights for said second wireless device every time said second wireless device requests said location.**

[0221] After the *second wireless device* has made a “restriction removal request” and the *first wireless device* has approved the request as I discussed above (§VIII.A.5.a, claim 1), Futagami teaches two alternatives: simply transmitting the requested information to the requester (FIG. 21), or additionally updating access restriction information for the requester’s future access (FIG. 20). In Futagami’s process in Figure 20 (highlighted below) (which I discussed above in §VIII.A.5.a.vii, Element [1F]), the server “changes the access restriction information...such that the access requester is permitted to access the personal information” not only that one time, but also in the future. Futagami, 20:3-7.

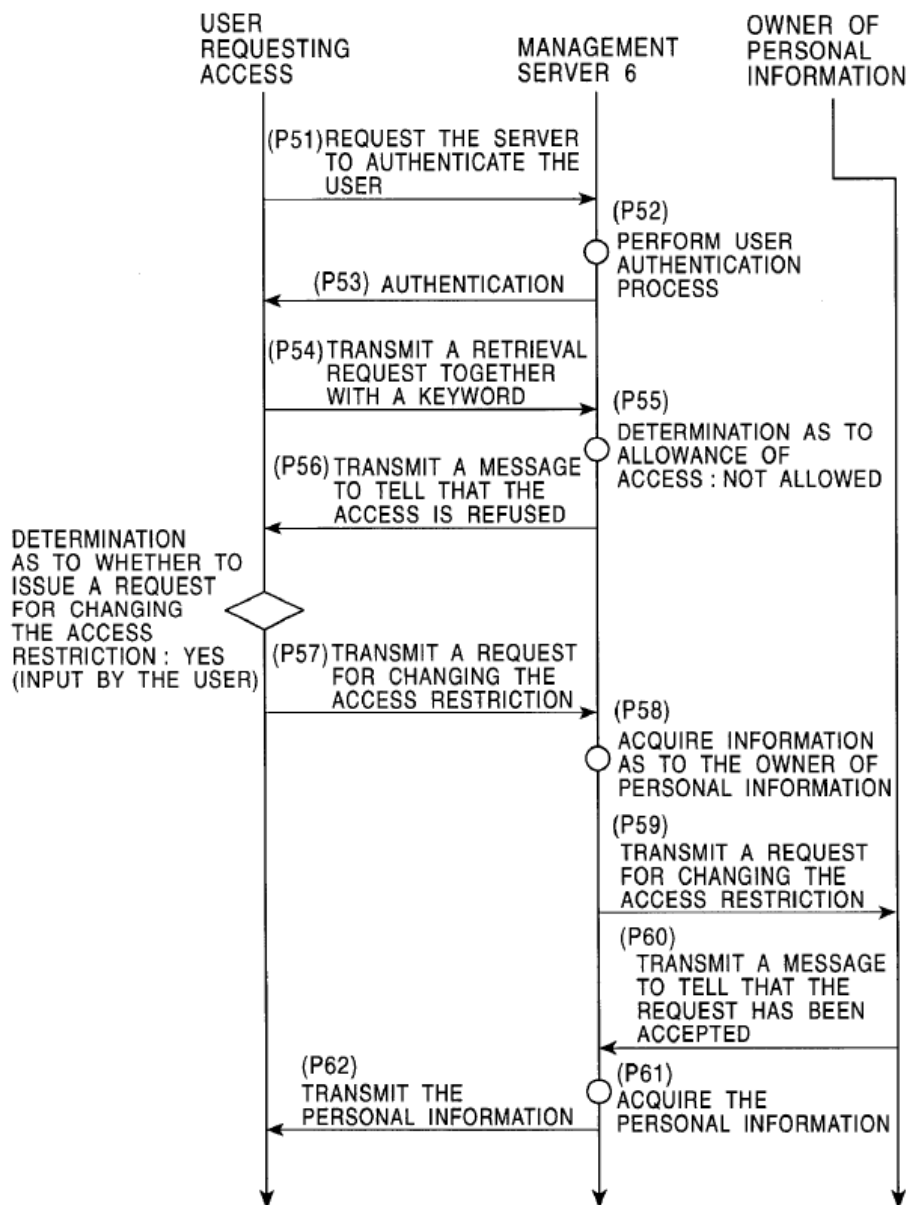
FIG. 20



Futagami, FIG. 20 (highlighted)

[0222] In the alternative Futagami process illustrated in Figure 21 (below), “the access restriction information is not changed, although the personal information...is transmitted to the access requester” that one time. Futagami, 20:26-30. “Thus, when the access requester again issues a request for retrieval of the personal information,” it is once again “restricted.” Futagami, 20:29-38. In my opinion, POSAs would have understood this to teach and suggest that *said first wireless device is requested to manually allow said location access rights for said second wireless device again, every time said second wireless device requests said location.*

FIG. 21



Futagami, FIG. 21

[0223] Thus, in my opinion, Randall-Darling-Futagami meets claim

34.

- t. **Claim 35: The method of claim 1, wherein one of said location access rights is the ability to not allow said second wireless device to access said location.**

[0224] As I discussed above (§VIII.A.5.a.iii, Element [1B]), *one of said location access rights* that Alice can apply to Bob *is the ability to not allow Bob's second wireless device to access her location*. Randall, [0047] (“Alice can therefore give Bob rights to read only certain fields in her database.”).

[0225] Thus, in my opinion, Randall-Darling-Futagami meets claim 35.

B. Ground 2: Claims 3 and 8 are Unpatentable over Randall-Darling-Futagami in view of Ryden

[0226] As I explain in this section below, in my opinion claims 3 and 8 of the '540 patent would have been obvious to a POSA in view of the Randall (EX1007-EX1008), Darling (EX1022), Futagami (EX1030), and Ryden (EX1009).

[0227] I provided discussions above of Randall (§VIII.A.1), Darling (§VIII.A.2), Futagami (§VIII.A.3), and the Randall-Darling-Futagami combination (§VIII.A.4).

1. Discussion of Ryden (EX1009)

[0228] Generally, Ryden teaches a location-based communication system in which “[e]mergency features enable the location based communication system to locate and notify the nearest and/or best equipped party for assistance in the event of an emergency, issue warnings to all phones in a specific area of any

size, calculate vehicle velocities and control traffic.” Ryden, Abstract. Ryden’s system is able to obtain locations of mobile devices and enable them to identify other nearby local devices and, if desired, to communicate with them. Ryden, 3:61-4:39. Each device in the system may have a conventional telephone number, but each may be contacted using a separate geographical number, referred to in Ryden as its “G#,” which is associated with the target device based on its location. Ryden, 4:40-5:24. For example, Ryden states that “[t]o initiate a call from a first telephone unit to a second telephone unit, the geographic earth location (called G# herein) of the second telephone unit (more precisely, the PLS antenna of the unit) may be identified in the call initiating process.” Ryden, 4:44-48. Each device “determine[s] its own earth location i.e. G#...using current GPS technology.” Ryden, 8:41-43.

[0229] A device being “monitored” in Ryden can respond with its “location G#” even when the device “is turned OFF.” Ryden, 16:53-62. Ryden describes many different use cases for its system to enable communications with vehicles, such as aircraft, ships, or cars, that can be located, but whose identity is unknown. Ryden, 13:50-14:40. In addition, Ryden describes determining navigational (movement-based) information about target wireless devices, such as their direction or speed of travel, which can be used to prevent collisions or to provide routing or driving directions. Ryden, 18:41-50, 19:34-47, 19:49-20:14.

2. Discussion of Randall-Darling-Futagami-Ryden Combination

[0230] A POSA would have been motivated to incorporate Ryden's speed and direction determination capabilities, as well as Ryden's location monitoring for a device that is turned OFF, into the Randall-Darling-Futagami combination's system (*supra* §VIII.A.4) to provide such functionality and standard navigation information using Randall's mapping functionality. Randall teaches that its wireless device can show its own "position on digital maps" and "also show the position of" another wireless device user. Randall, [0021]. Randall further teaches that this functionality can be used by a "group of friends [who] are trying to locate each other in town." Randall, [0143]. POSAs would have known that a person meeting another person who is using a mobile device and may be moving would want to know about the other person's movement, such as where they are heading and how fast. POSAs would have understood that such functionality would help mobile device users more efficiently meet. Further, because Ryden operates in a similar environment as Randall using similar location information, a POSA would have had a reasonable expectation success integrating Ryden's functionality into the Randall-Darling-Futagami combination's system.

3. Mapping of Randall-Darling-Futagami-Ryden-Ganesh-Wollrab to Claims 3, 8, and 31-32

- a. Claim 3: The method of claim 1, 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.**

[0231] In Randall’s system, said location access rights include the ability to obtain said location, as discussed *supra* §VIII.A.5.a (claim 1).

[0232] As discussed *supra* §VIII.B.1, Ryden teaches to program a wireless device’s location reporting feature “to bypass the unit’s ON-OFF switch” so the device “respond[s] with its...location G#” even “when the unit 10 is turned OFF,” such as to “allow[] a stolen telephone unit” to be located. Ryden, 16:53-62; Ryden-Prov, 31:4-8. In my opinion, POSAs would have been motivated to incorporate such a feature in Randall’s system to allow a contact (e.g., friend or family member) who has been given *said location access rights* to locate a lost or stolen *first wireless device* or its user, and would have reasonably expected success in view of Ryden’s teachings that use the technique in a system similar to Randall’s where wireless device GPS locations are being tracked.

[0233] My opinion in this regard is corroborated by Meadows (EX1018), which discloses that making “the device continue[] to transmit” “even when the wireless device operator turns off the wireless device” is “useful for

monitoring other individuals” and “useful for tracking devices such as misplaced cellular telephones.” Meadows, 7:20-33.

[0234] In Randall’s system, the *first wireless device* reports this location to the i-server, which provides it to the *second wireless device* (as I discussed above §VIII.A.5.a.ii (Element [1A]), §VIII.A.5.a.ix (Element [1H])). Therefore, in my opinion, a POSA would have been motivated to implement the combination to perform that location reporting even when the wireless device is off, such that *said first wireless device* can be *OFF* when *said location* is provided to *said second wireless device* from *said server*.

[0235] Thus, in my opinion, Randall-Darling-Futagami-Ryden-Wollrab meets claim 3.

- b. **Claim 8: The method of claim 1, further comprising requesting a second location of said first wireless device and using said location and said second location to determine how fast said first wireless device is traveling.**

[0236] Randall teaches that “as Alice changes her data, Bob’s view of it can readily remain up-to-date as...Bob can pull the new data into his device.” Randall, [0053], [0015] (“pull[ing]” information from server is “*request[ing]*” it). In this way, as “[t]he I-server is up-dated with the location of a person” (Alice), that “enabl[es] authorised people to track the location of the GPS wireless information device by polling the server.” Randall, p. 24 (“People tracking”: e.g.,

Bob can “track” Alice’s location as it is “up-dated” at the “I-server”). Thus, Randall teaches *requesting a second location of said first wireless device*.

[0237] Ryden teaches to determine the speed and direction of travel of a mobile device, which may be a cellular device. Ryden, 18:33-50; Ryden-Prov., 16:3-15, 33:25-34:14. Ryden teaches that travel speed and direction may be extrapolated from received position information. Ryden, 18:41-50; Ryden-Prov., 35:4-11. For example, Ryden discloses that speed and direction of travel may be directly *determined* from position changes as a function of time (e.g., *using said location and said second location of the first wireless device* at different times). Ryden, 19:34-47; Ryden-Prov., 35:4-11.

[0238] A POSA would have been motivated to enhance Randall’s map-based tracking capabilities to determine the *first wireless device’s* movement, including speed (*how fast said first wireless device is traveling*), to provide accurate tracking information and inform users who are trying to meet up, and would have had a reasonable expectation of success, as I discussed above (§VIII.B.4).

[0239] Thus, in my opinion, Randall-Darling-Futagami-Ryden meets claim 8.

C. Ground 3: Claims 4, 9-10, 17-18, 28, 30 are Unpatentable over Randall in view of Darling, Futagami, and De-Vries

[0240] As explained in this section below, in my opinion claims 4, 9-10, 17-18, 28, 30 of the '540 patent would have been obvious to a POSA in view of the combined teachings of Randall (EX1007-EX1008), Darling (EX1022), Futagami (EX1030), and De-Vries (EX1013).

[0241] I provided discussions above of Randall (§VIII.A.1), Darling (§VIII.A.2), Futagami (§VIII.A.3), and the Randall-Darling-Futagami combination (§VIII.A.4).

1. Discussion of De-Vries (EX1013)

[0242] De-Vries relates to “notifications to inform when certain people (e.g., friends, family, business contacts, etc.) are nearby” based on “devices carried by the people” such as “cell phone[s].” De-Vries, Abstract, 2:21-26. A device’s “user can set rules and/or parameters to control when notifications are generated”—“[f]or example, a user may set a proximity parameter designating that notifications are provided only when the other users on his or her buddy list are within a certain proximity.” De-Vries, 2:52-59. “This proximity parameter can have the form of a geographic distance threshold” or “same city/town/neighborhood,” etc. De-Vries, 9:1-18. “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.

2. Discussion of Randall-Darling-Futagami-De-Vries Combination

[0243] Randall, like De-Vries, provides notifications via wireless devices when certain contacts are nearby, including via an “Old buddy finder” service that, e.g., “alerts Bob when a contact happens to be within a defined proximity (e.g. Bob and Alice are both in the same foreign city and didn’t know it).” Randall, p. 24 (Table 4). To the extent that Randall does not specify that the user receiving these location 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, a POSA would have been motivated to implement Randall’s service in the Randall-Darling-Futagami combination’s system (*supra* §VIII.A.4) that way based on De-Vries’s teachings. For example, Dr-Vries’s techniques to 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. In my opinion, POSAs would have reasonably expected success based on De-Vries’s teachings of successfully

implementing such functionality in a system similar to Randall's where wireless device users are accessing each other's locations.

3. Mapping of Randall-Darling-Futagami-De-Vries to Claims 4, 9-10, 17-18, 28, and 30

a. Claim 4: The method of claim 1, wherein said location access rights comprise a plurality of access levels.

[0244] 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.

[0245] 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 *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.

[0246] Thus, in my opinion, POSAs would have had motivation and a reasonable expectation of success to implement the Randall-Darling-Futagami-De-Vries combination such that *said location access rights comprise a plurality of access levels* (e.g., an access level that provides the exact location and an access level that filters the location information to provide only a portion of it (e.g., an approximate location such as only the city), in view of both Randall’s and De-Vries’s teachings of successfully doing so.

[0247] Thus, in my opinion, Randall-Darling-Futagami-De-Vries meets claim 4.

- b. **Claim 9: The method of claim 1, 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.**

[0248] As discussed supra §VIII.C.3.a (claim 4), Randall alone or in combination with De-Vries teaches that the location access rights comprise a plurality of levels, comprising the exact location and an approximate location of Alice’s first wireless device.

[0249] Thus, in my opinion, Randall-Darling-Futagami-De-Vries meets claim 9.

- c. **Claim 10: The method of claim 1, 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.**

[0250] As I discussed above (§VIII.C.3.a, claim 4), Randall alone or in combination with De-Vries teaches that the *access rights comprise a plurality of levels*, including *an approximate location of Alice's first wireless device that comprises a city*.

[0251] Thus, in my opinion, Randall-Darling-Futagami-De-Vries meets claim 10.

- d. **Claim 17: The method of claim 1, further comprising filtering information about said location such that only a portion of the information is passed to said second wireless device.**

[0252] As I discussed above (§VIII.C.3.a, claim 4), Randall alone or in combination with De-Vries teaches *filtering information about said location such that only a portion* (e.g., just the city) *is passed to said second wireless device*.

[0253] Thus, in my opinion, Randall-Darling-Futagami-De-Vries meets claim 17.

- e. **Claim 18: The method of claim 1, further comprising alerting said second wireless device when said first wireless device is within a distance of second wireless device.**

[0254] 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* (e.g. Bob and Alice are both in the same foreign city and didn’t know it).” 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.*

[0255] 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, 5:20-62 (wireless device GPS locations are “stored in the people/place database” on the server to “provide *alerts*” to other users’ devices). 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. This proximity parameter can have the form of a geographic *distance* threshold, e.g., a radius in

miles or kilometers, within which the people...must be located to be considered in proximity to the user.”).

[0256] Thus, in my opinion, Randall-Darling-Futagami-De-Vries meets claim 18.

f. Claim 28: The method of claim 1, further comprising setting location alerts associated with said first wireless device on said second wireless device.

[0257] As I discussed above (§VIII.C.3.e, claim 18), Randall, like De-Vries, provides *location alerts* on Bob’s *second wireless device* when Alice’s *first wireless device* is nearby, including via Randall’s “Old buddy finder” service. To the extent that Randall does not specify that Bob can set the rules/parameters for receiving these location alerts on his *second wireless device* with respect to the proximity of Alice’s device, in my opinion POSAs would have been motivated to implement Randall’s service that way based on De-Vries’s teachings, to provide the user with control over what alerts they receive and about whom. De-Vries, 2:52-59 (device “user can set rules and/or parameters to control when notifications are generated”—“[f]or example, a user may set a proximity parameter designating that notifications are provided only when the other users on his or her buddy list are within a certain proximity”), 3:5-14 (“[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.”). POSAs would have reasonably expected success based on De-Vries’s teachings of successfully implementing such functionality in a system similar to Randall’s where wireless device users are accessing each other’s locations.

[0258] Thus, in my opinion, Randall-Darling-Futagami-De-Vries meets claim 28.

g. Claim 30: The method of claim 1, further comprising alerting said second wireless device when said first wireless device enters a geographic area.

[0259] As I discussed above (§VIII.C.3.e, claim 18), Randall’s “Old buddy finder” *alerts Bob’s second wireless device when Alice’s first wireless device enters a geographic area* (e.g., city). Randall, p. 24. De-Vries also teaches *to alert said second wireless device when said first wireless device enters a geographic area*, as determined by “proximity parameters, such as same city/town/neighborhood.” De-Vries, 9:8-13.

[0260] Thus, in my opinion, Randall-Darling-Futagami-De-Vries meets claim 30.

D. Ground 4: Claims 6-7 and 25-27 are Unpatentable over Randall in view of Darling, Futagami, and Wako

[0261] As explained in this section below, in my opinion claims 6-7 and 25-27 of the ’540 patent would have been obvious to a POSA in view of the

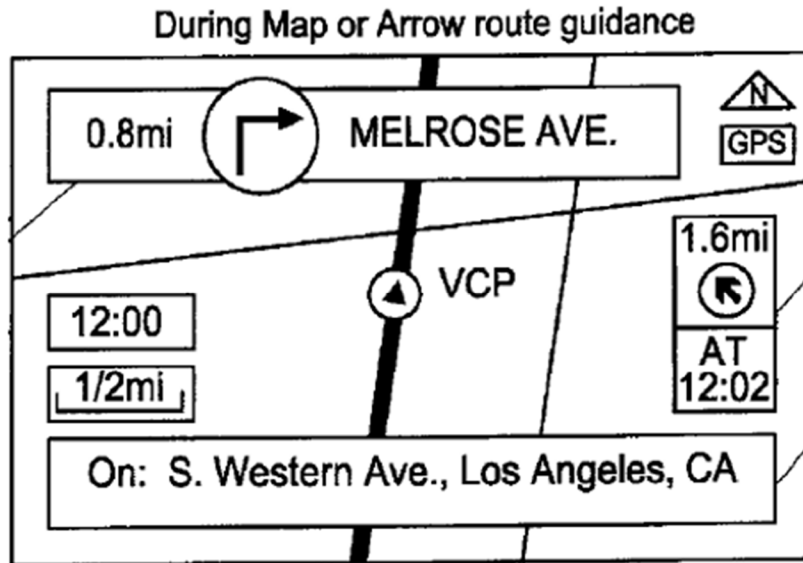
combined teachings of Randall (EX1007-EX1008), Darling (EX1022), Futagami (EX1030), and Wako (EX1025).

[0262] I provided discussions above of Randall (§VIII.A.1), Darling (§VIII.A.2), Futagami (§VIII.A.3), and the Randall-Darling-Futagami combination (§VIII.A.4).

1. Discussion of Wako (EX1025)

[0263] Wako discusses “[a] display method...for [a] navigation system for displaying information necessary for guiding a driver of a vehicle.” Wako, Abstract. The vehicle’s position can be determined by GPS. Wako, 1:22-27, 6:43. Wako discusses that it was “Background” knowledge to “superpos[e] a mark representing the current location of the vehicle on a...map image,” with “information regarding the remaining distance to the final destination and an estimated time to reach the final destination” and “[o]ther information such as a north pointer NP...illustrated on the display screen.” Wako, 1:11-22, 2:30-34, 2:1-8, FIG. 1B. The “route guidance display” is “accompanied by spoken instructions...such as ‘turn left at the next intersection.’” Wako, 2:12-34.

[0264] The following excerpt from Wako’s FIG. 7 shows an example route guidance screen:



Wako, FIG. 7

Wako, 8:64-9:22.

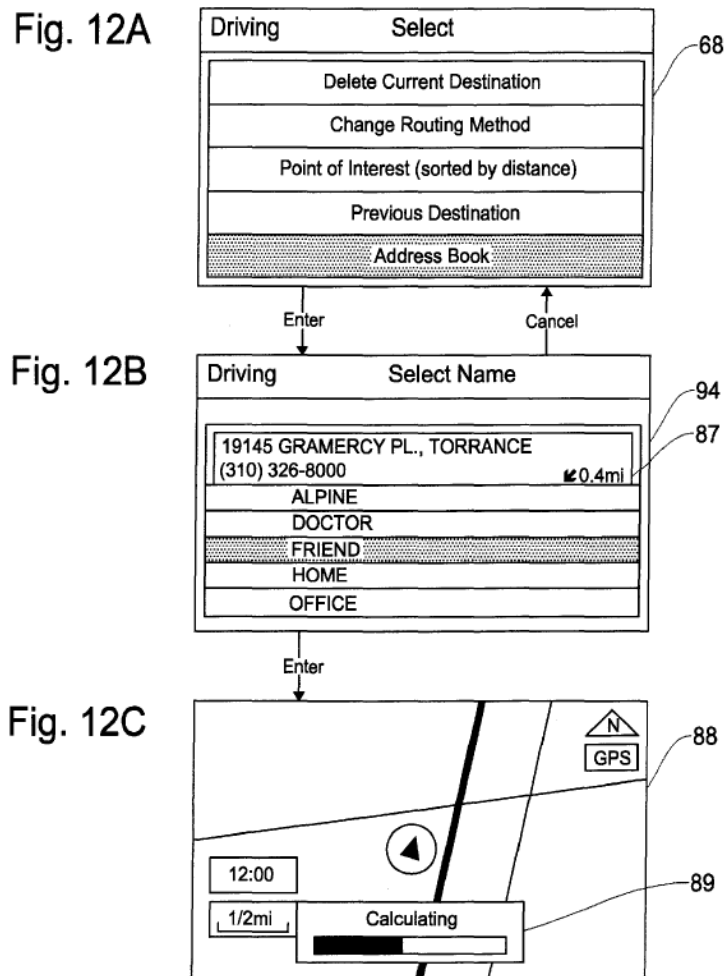
2. Discussion of Randall-Darling-Futagami-Wako Combination

[0265] 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.

[0266] POSAs would have recognized Wako’s navigation techniques as the type of “GPS tracking in cars” techniques that Randall’s “Route finder” is “similar to” (Randall, p. 29). POSAs would therefore have had motivation and reasonable expectation of success to use Wako’s display techniques when implementing Randall’s “Route finder” service in the Randall-Darling-Futagami

system (*supra* §VIII.A.4). For example, POSAs would have been motivated by Wako’s teachings to display any of the information Wako discloses (e.g., north pointer, directional arrows, travel time, etc.) on Randall’s wireless device to enhance Randall’s “Route finder” by providing useful information to the user.

[0267] Further, Randall provides a “Rendezvous” service “on your mobile phone to help you meet friends and family in crowded or unfamiliar places. Temporarily you can elect to have your location visible to others—so using your phones everyone in your group can tell precisely where the others are.” Randall, p. 29. Randall teaches that “[a]t the touch of a button, your phone can display a map of the area you are standing in” (Randall, p. 29) and it can also “show [your] position” and “the position of [another] user” (Randall, [0021]). POSAs would have understood and found it obvious from these disclosures that another user’s position can be “where you want to go” (i.e., a destination) in Randall’s “Route finder,” which can “give you step by step instructions on how to get there”. Randall, p. 29. Wako reinforces this by teaching that a selected destination can be the location of a “friend” in the user’s “address book.” Wako, FIGs. 12A-12C.



Wako, FIGs. 12A-12C

[0268] POSAs would therefore have had motivation and expectation of success to implement Wako's techniques in Randall's system to provide an informative and useful display for this functionality to navigate from the displaying device's location to the location of another user.

3. Mapping of Randall-Darling-Futagami-Wako to Claims 6-7 and 25-27

- a. Claim 6: The method of claim 1, wherein said location is used to provide directions from said second wireless device to said location on said second wireless device.**

[0269] As discussed *supra* §VIII.D.2, it would have been apparent to POSAs from Randall’s disclosures that another user’s location (e.g., Alice’s *said location*), which is displayed on a map, may be one of the disclosed places “where you want to go” that Randall’s “Route finder” can provide directions to (e.g., *providing directions on Bob’s second wireless device* to navigate from Bob’s device’s location to Alice’s location). Randall, [0021], p. 29. Additionally, as also discussed *supra* §VIII.D.2, Wako teaches that a selected destination for route guidance (*directions*) can be the location of a “friend” in the user’s “address book,” which in the combination can be Alice’s location. Wako, FIGs. 12A-12C, 12:35-13:14, 9:8-22 (“route guidance...inform[s] the driver which street and which direction to turn the vehicle”).

[0270] Thus, in my opinion, Randall alone or in combination with Wako discloses claim 6’s recitations.

- b. Claim 7: The method of claim 1, wherein said location is used to provide directions from said second wireless device to said location and a travel time on said second wireless device.**

[0271] Claim 7 repeats language from claim 6, which is met as I discussed above (§VIII.D.3.a, claim 6).

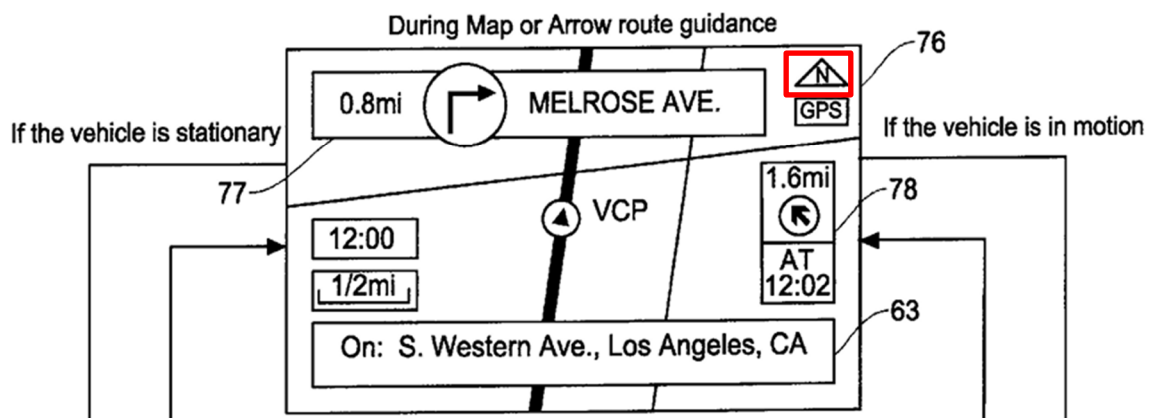
[0272] As to *travel time*, Wako teaches to display in the “route guidance screen” the “anticipated time to reach the final destination,” and explains that this was “Background” knowledge. Wako, 9:18-22, 2:30-34 (“Background” section). Accordingly, it would have been obvious to use Alice’s *location to provide a travel time on Bob’s second wireless device* for reaching Alice’s location. *See supra* §VIII.D.2.

[0273] Thus, in my opinion, Randall-Darling-Futagami-Wako meets claim 7.

c. Claim 25: The method of claim 1, further comprising providing a compass in said second wireless device.

[0274] Wako teaches to display in GPS route guidance screen a “north pointer N,” and explains that this was “Background” knowledge. Wako, 7:31-34, 2:6-8 (“Background” section), FIG. 7 (excerpt annotated below).

Fig. 7

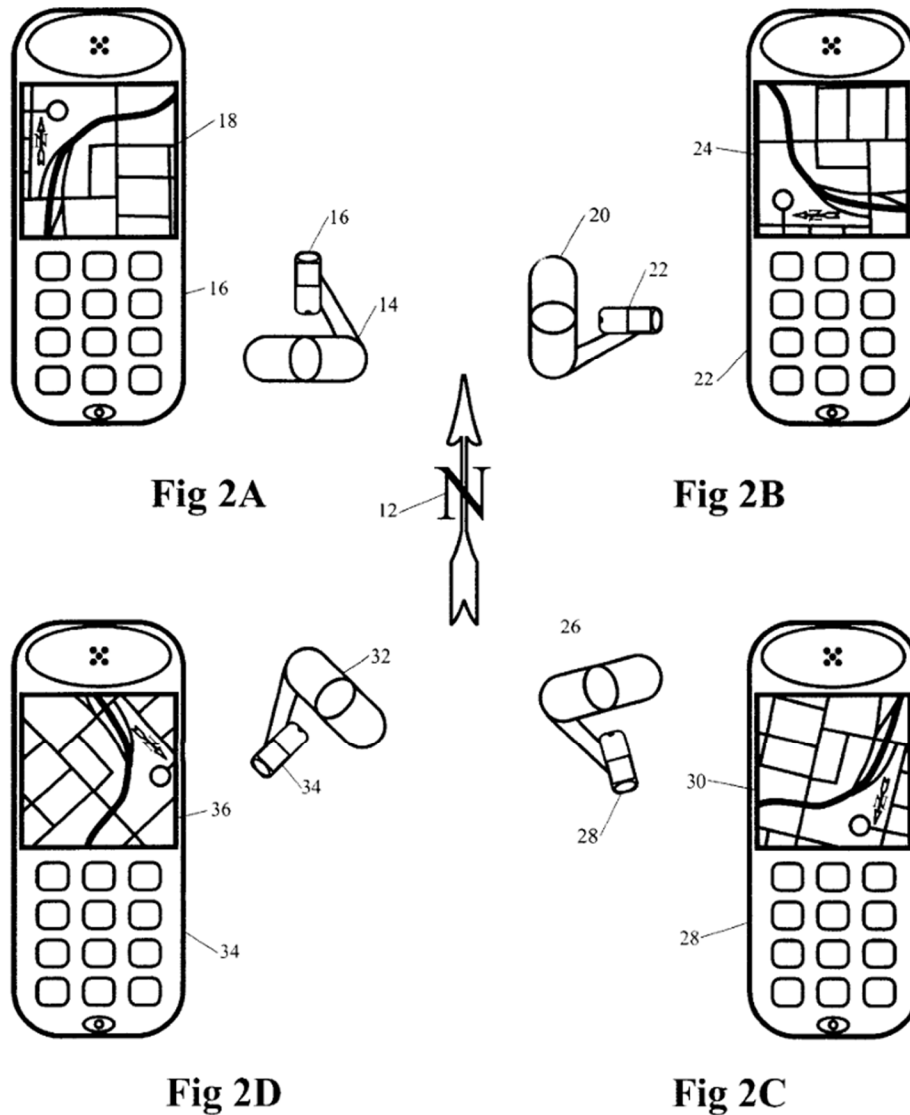


Wako, FIG. 7 (excerpted and annotated)

[0275] In my opinion, it would have been obvious to POSAs from their background knowledge to implement this by *providing a compass* in Randall's displaying wireless device.

[0276] My testimony as to the POSA's background knowledge in this regard is corroborated by EX1072 ("Johnson"), which discloses an "apparatus for orienting a map display in a mobile or portable device," wherein "[a]n electronic compass is integrated" and "an electronic compass bearing is used to calculate an offset value" so the "map" can be "reoriented...to the direction of travel." Johnson, Abstract. Johnson corroborates that POSAs knew that "in a hand-held portable device" displaying a "map," the "user has a tightly interactive relationship with the map and the physical environment," and "[i]t is preferable in such situations that the map be reoriented to display on top, what is directly in front of the users rather than always having "north on top." Johnson, 1:41-53. Johnson's Figures 2A-2D (copied below) provides "a series of illustrations" where "the direction north is...indicated by north arrow 12," and the "mobile device 16 shows the map oriented consistent with the direction the user is facing." Johnson, 4:37-48; *see also* Johnson, 3:56-5:20. Johnson further discloses that "orientation measurement[s]" can be obtained using "an electronic compass to measure the instantaneous orientation of the mobile device with respect to the magnetic north pole," which were "know[n] in the art and generally output a signal indicative of

the compass heading of the device into which they are incorporated,” which “advantage[ously]” allows “a single reading [that] can determine the orientation of the device.” Johnson, 6:6-13.



Johnson, FIGs. 2A-2D

[0277] Thus, in my opinion, Randall-Darling-Futagami-Wako meets claim 25.

- d. **Claim 26: The method of claim 1, wherein a directional arrow is utilized to display the location of said first wireless device relative to said location of said second wireless device on said second wireless device.**

[0278] Wako teaches to display “*a direction by an arrow*, and a distance to location of the name highlighted in the name list” when the user (e.g., Bob) selects the location of a “friend” (e.g., Alice) as the navigation destination. Wako, 12:60-63, FIG. 12B (annotated below).

Fig. 12A

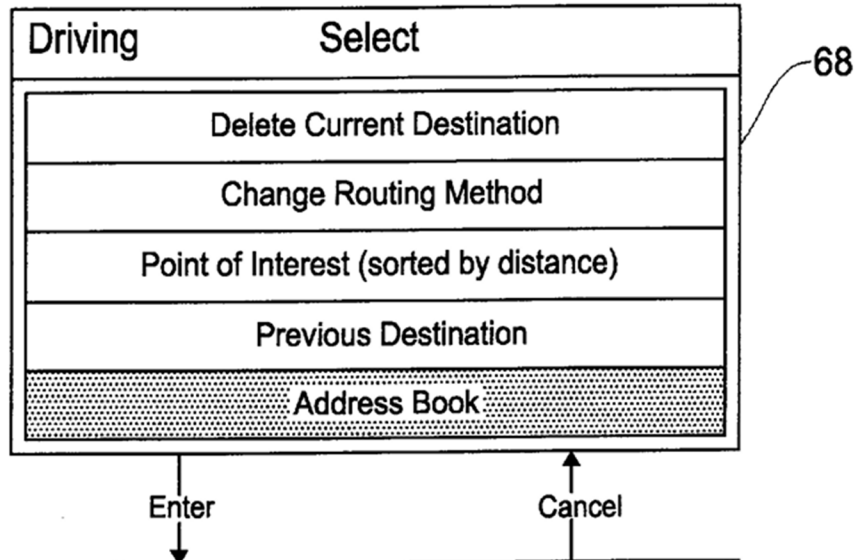


Fig. 12B

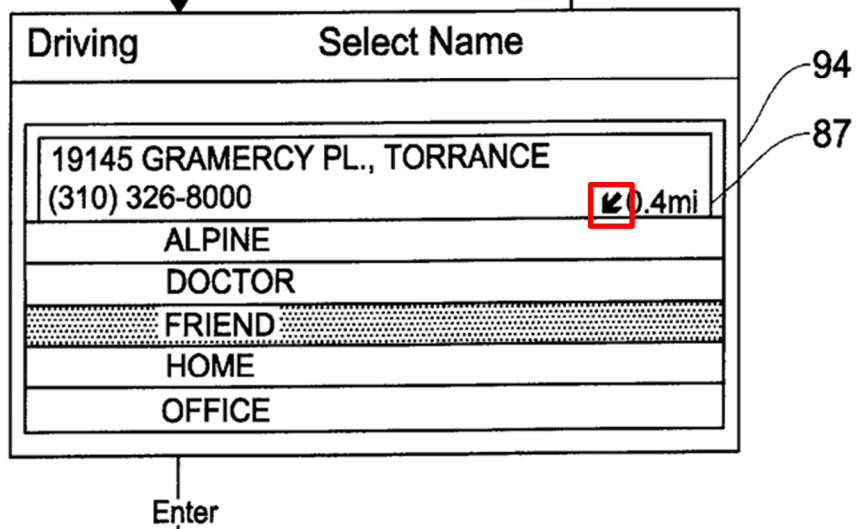
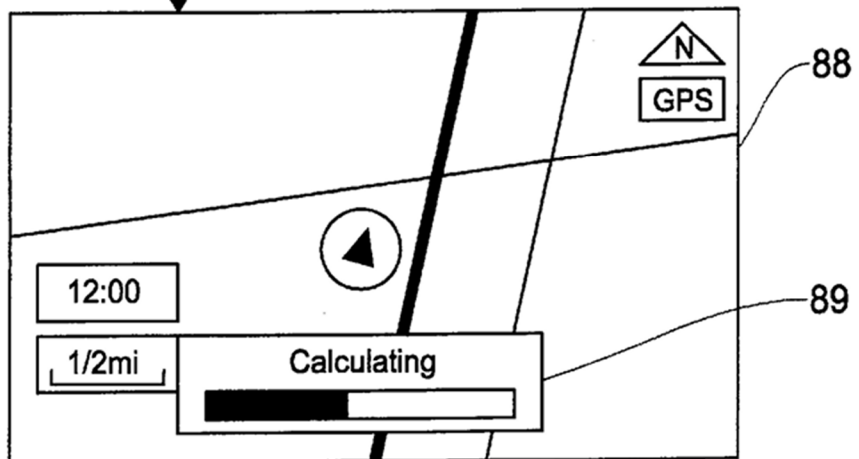


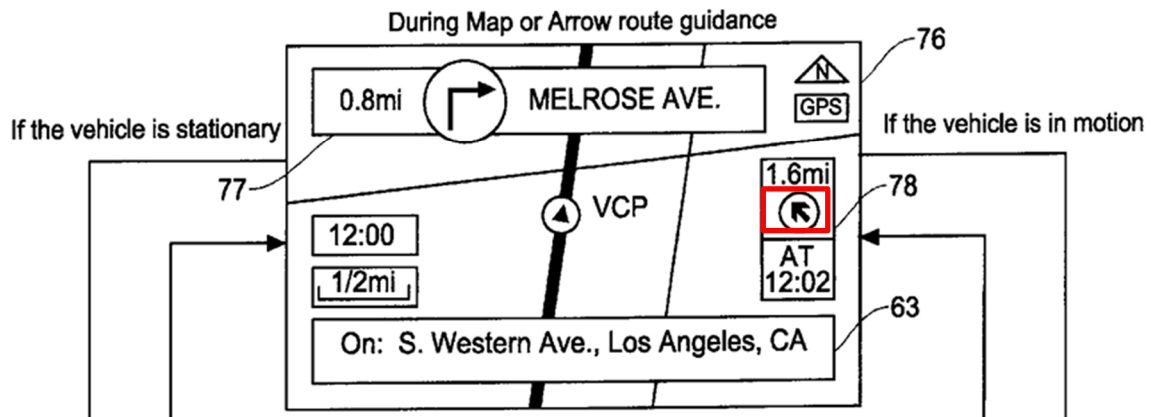
Fig. 12C



Wako, FIGs. 12A-12C

The *directional arrow* is also displayed in the “route guidance screen.” Wako, 9:18-21, FIG. 7 (excerpt annotated below).

Fig. 7



Wako, FIG. 7 (excerpted and annotated)

[0279] Accordingly, it would have been obvious to apply this teaching to utilize a directional arrow to display the location of Alice’s first wireless device relative to said location of Bob’s second wireless device on Bob’s second wireless device. *See supra* §VIII.D.2.

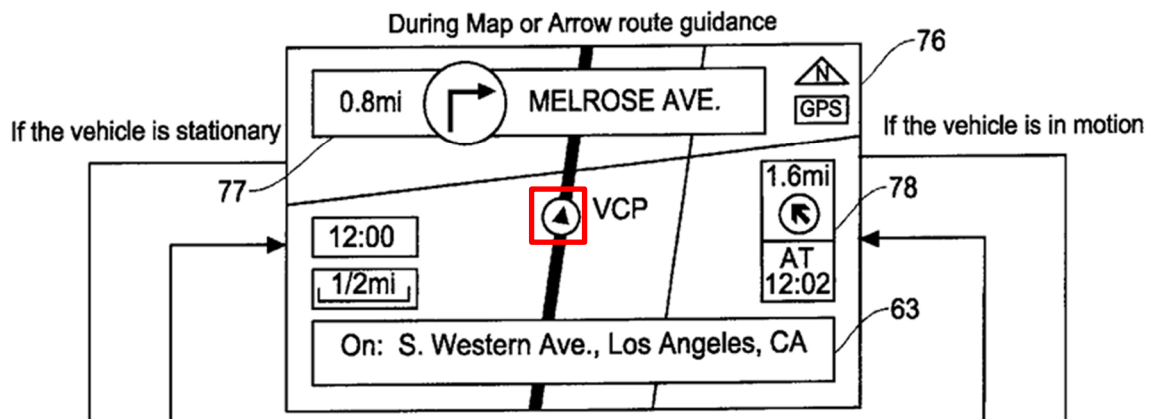
[0280] Thus, in my opinion, Randall-Darling-Futagami-Wako meets claim 26.

- e. **Claim 27: The method of claim 1, further comprising providing a compass in said second wireless device, wherein said compass is utilized to display the direction that said second wireless device is traveling in.**

[0281] Providing a compass in said second wireless device is met as discussed supra §VIII.D.3.c (claim 25).

[0282] As to *displaying the direction*, Wako teaches to display in the “route guidance screen” a “vehicle current position mark VCP,” which is shown in Wako’s figures as a triangle pointing in *the direction* that the device *is traveling in*. Wako, 9:8-11, FIGs. 1A-1B (“Prior Art”), FIGs. 5-12.

Fig. 7



Wako, FIG. 7 (excerpted and annotated)

[0283] As shown in Wako’s figures, a comparison of the orientations of the VCP triangle and the north pointer “N” indicates *the direction that* the device *is traveling in*. Thus, POSAs would have understood Wako to teach that *utilizing said compass* (that I also discussed above for claim 25, §VIII.D.3.c) *is*

utilized to display the direction that the device is traveling in, and it would have been obvious to incorporate this functionality in Bob’s *second wireless device* to aid Bob’s navigation. *See supra* §VIII.D.2.

[0284] Thus, in my opinion, Randall-Darling-Futagami-Wako meets claim 27.

E. Ground 5: Claims 31 and 32 are Unpatentable over Randall in view of Darling, Futagami, and Wollrab

[0285] As I explain in this section below, in my opinion claims 31 and 32 of the ’540 patent would have been obvious to a POSA in view of the Randall (EX1007-EX1008), Darling (EX1022), Futagami (EX1030), and Wollrab (EX1014).

[0286] I provided discussions above of Randall (§VIII.A.1), Darling (§VIII.A.2), Futagami (§VIII.A.3), and the Randall-Darling-Futagami combination (§VIII.A.4).

1. Discussion of Wollrab (EX1014)

[0287] Wollrab relates to “members of an identified family, work, or other group” tracking each other’s wireless device GPS locations “as coordinates on a graphic map.” Wollrab, 5:50-61, 6:28-31. The tracked device locations are “shown simultaneously relative to one another” as “symbols” on the map on each wireless device. Wollrab, 4:40-58, FIG. 4B (symbols 44-1 through 44-5). Wollrab

further describes storing and displaying on the graphic map “a historical tracking record of movement for” a tracked device. Wollrab, 3:21-27, 4:54-58.

2. Discussion of the Randall-Darling-Wollrab Combination

[0288] In my opinion, POSAs would have been motivated to enhance the Randall-Darling-Futagami system (*supra* §VIII.A.4) to incorporate Wollrab’s teachings to store historical location tracking records to help trace where a device has been and locate a device whose tracking has been lost. Wollrab, 3:21-27, 4:40-58. While an exact position may be desirable, POSAs would have known from these Wollrab teachings and from background knowledge that a most-recent position based on a historical record can still provide useful location information, such as in emergency situations, for a parent locating a child whose tracking has been lost (e.g., because their device has turned off, etc.).

[0289] My opinion on the POSA’s background knowledge in this regard is corroborated by EX1012 (“Ganesh”), which describes providing a mobile device’s location to an authorized requesting party. Ganesh, Abstract, 1:14-18. Ganesh explains that automatic location techniques had been developed for emergency uses under the Federal Communications Commission’s E-911 requirements, and describes applying these techniques for non-emergency uses, while preventing unauthorized access to location information. Ganesh, 1:56-2:12, 2:45-60. In Ganesh’s system, a mobile device’s approximate location can be

obtained using call history records to identify cell sites and sectors in communication with the device during a prior call. Ganesh, 1:43-55, 4:29-35, 7:3-20. For example, Ganesh discloses that the “potential location area” is based on the “coverage area” of a “cell site[]” from a device’s “call records” history. Ganesh, 7:13-17. A POSA would understand that a “cell site[]” is an approximate location, as its coverage is over a wide area. *See* Ganesh, 3:52-4:2 (noting that, as illustrated in Figure 1, cell sites “may be spaced from as little as one half mile apart in a metropolitan area and as great as twenty miles apart in a rural area to achieve acceptable results,” which are divided into a handful of “sector coverage areas”). Alternatively, a more accurate location can be obtained using the automatic location techniques for E-911, such as built-in GPS receivers. Ganesh, 7:32-65.

[0290] In my opinion, POSAs would have reasonably expected success incorporating functionality to store historical location tracking records to help trace where a device has been and locate a device whose tracking has been lost into Randall-Darling-Futagami’s system given that Randall’s i-server already receives, stores, and provides updates of a target wireless device’s location as I discussed above (§VIII.A.1, §VIII.A.5.a).

3. Mapping of Randall-Darling-Futagami-Wollrab to Claims 31-32

- a. **Claim 31: The method of claim 1, wherein said server stores a history of locations for said first wireless device.**

[0291] The Randall-Darling-Futagami-Wollrab combination that I discussed above (§VIII.E.2) implements Wollrab’s teaching that “multiple sequential sets of remote sensing location coordinates are *stored*...to create a *historical tracking record* of movement” that “can be retrieved later to determine where a [wireless] device has been physically located over time for such purposes as tracking member movements or locating a lost member.” Wollrab, 3:20-27, 4:54-58 (“In map image 40-3 symbols interconnected with location 44-5 depict sequential historical locations of...device 14-5 relative to location 44-1 of...device 14-1....”), FIG. 4C.

[0292] Wollrab’s wireless devices share their locations with each other via a remote system (“[s]atellite device 12”), which “receives, processes and *stores* information sent from individual” devices, including their “physical location” data. Wollrab, 4:1-23. In Randall’s system, this functionality is performed by the i-Server (as I discussed above §VIII.A.5.a.ii (Element [1A]), §VIII.A.5.a.ix (Element [1H])). Therefore, a POSA would have been motivated to implement the combination to store the *history of locations* at the i-server, additionally or alternatively to storing it locally at a tracking device, e.g., to offload storage

requirements, provide data backup, and/or allow a user to access data from multiple local devices. Storing a *history of locations* server-side was also a well-known design option.

[0293] My testimony in this regard is corroborated by Thomas (EX1019), which describes “[t]echniques for location tracking, location utilization, and dissemination and management of location information.” Thomas, Abstract. Thomas describes “server-side registration processing [that] allows a viewer (requesting viewer) to request to view the location of a particular mobile communication device,” and the location can be saved in a “location history.” Thomas, 7:34-49. Thomas describes that “[t]he history of movement can be presented to the viewer in textual or graphical formats.” Thomas, 7:47-49. Additionally, Thomas describes that the “server-side location processing” can be “performed by a location monitoring *server*” and that the *server* “receives [] location information” and stores the location in a “location database.” Thomas, 5:58-6:13. Therefore, Thomas corroborates that storing a *history of locations* server-side was also a well-known design option.

[0294] My testimony is also corroborated Ganesh, which teaches to store a history database with location information remotely on the server-side. Ganesh, 7:3-65, FIG. 1, 4:8-28. For example, in Ganesh’s system, a mobile device’s approximate location can be obtained using call history records to identify

cell sites and sectors in communication with the device during a prior call.

Ganesh, 4:29-35, 7:3-20.

[0295] A POSA would have reasonably expected success because Randall's i-server already receives, stores, and provides updates of a device's location, as I discussed above (§VIII.A.5.a.ii (Element [1A]), §VIII.A.5.a.ix (Element [1H])).

[0296] Thus, in my opinion, Randall-Darling-Futagami-Wollrab meets claim 31.

- b. **Claim 32: The method of claim 1, wherein said server stores a history of locations for said first wireless device and said history is utilized to provide an approximate location of said first wireless device when said first wireless device is turned OFF.**

[0297] Wollrab teaches to utilize the stored history of locations "to determine where [the *first wireless device*] has been physically located over time for such purposes as tracking member movements or locating a lost member."

Wollrab, 3:21-27, 4:54-58, FIG. 4C:

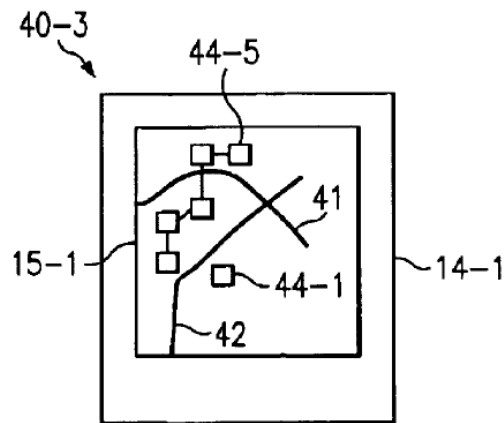


FIG. 4C

Wollrab, FIG. 4C

[0298] From this teaching and background knowledge, POSAs would have understood that the most recent historical location 44-5 and/or an extrapolation of the device's trajectory based on the history *is utilized to provide an approximate location of said first wireless device*, and that in the scenario Wollrab describes where the device's tracking was "lost" following that trajectory, that may often be because the *first wireless device is turned OFF*. Moreover, POSAs would have understood that the fact that historic location data is being used makes it likely that the device is off (or at least suggests and motivates a mechanism for obtaining a location of a turned-off device), because POSAs would have understood that if the device were turned on the system would be more likely to be able to obtain the device's current location without needing the history.

[0299] My opinion regarding POSAs' background knowledge in this regard is corroborated by Ganesh, which discloses providing historical location information from a call log when the target wireless device is turned off. Ganesh, 7:62-65, 6:55-7:20. Ganesh at 7:3-20, for example, corroborates that POSAs knew that using a history to predict the device's location is useful when the device "is not currently registered." And Ganesh at 6:55-56 says the device will be registered when it is "powered on" and in a "coverage area." Thus, POSAs knew that a device that is "not currently registered" (7:3-20) is either not powered on (i.e., it is turned off) and/or not in a coverage area. Ganesh at 7:3-20 explains that the location history is useful to predict that the device's location is "one of coverage areas 26" (i.e., the device is in a coverage area and the system is using the history to decide which coverage area the device is in), which indicates that Ganesh is describing the situation where the device is not registered because it is turned off.

[0300] Thus, in my opinion, Randall-Darling-Futagami-Wollrab meets claim 32.

F. Ground 6: Claims 1-3, 5-6, 11-16, 22-26, 29, and 33-35 are Unpatentable over Sheha in view of Darling and Futagami

[0301] As I explain in this section below, in my opinion claims 1-3, 5-6, 11-16, 22-26, 29, and 33-35 of the '540 patent would have been obvious to a

POSA in view of the combined teachings of Sheha (EX1005), Darling (EX1022), and Futagami (EX1030).

[0302] I provided discussions above of Darling (§VIII.A.2) and Futagami (§VIII.A.3).

1. Discussion of Sheha (EX1005)

[0303] Generally, Sheha teaches systems and methods to provide real-time location information (e.g., GPS co-ordinates, routing, maps) of a target user's device (e.g., landline, cell phone, PDA, etc.) to an authorized requesting user via conventional telecommunications systems (e.g., telephone network, mobile communications network, computer network, GPS, etc.). Sheha, Abstract, 1:35-45, 2:60-64, 10:66-11:9. Location information can be exchanged in response to a telephone call being made, but location information can also be shared without a call. Sheha, 11:55-58.

[0304] Sheha describes telephone devices – both landline and mobile devices, such as cellphones or PDAs – that share location information with other authorized landline and mobile devices to enable functionality such as mapping, routing, and direction finding. Sheha, 2:60-4:18, 10:66-11:9, 11:55-65. Sheha discloses that the mobile devices may determine their positions, such as by using an integrated GPS receiver or network-assisted position information, and may

provide their positions to an online database and application server (“ODAS”) which stores the positions remotely. Sheha, 10:5-16, 10:66-11:51, 7:19-23.

[0305] Sheha further discloses that a first user (that I refer to as a “target user”) may authorize other users and groups of users to receive the location of the first user’s device. Sheha, 11:51-12:7. For example, the mobile devices may specify groups of authorized users to the ODAS identifying who may (i.e. is authorized to) obtain their respective location information. Sheha, 11:55-12:1.

[0306] Sheha describes that the remote server (ODAS) periodically updates the requesting user with the target user’s device location information based on the target user’s associated privacy settings and what Sheha describes as authorization and authentication protocols. Sheha, 11:49-12:7. Sheha describes that the location information may include a map illustrating the location of one or both of the target and requesting users’ mobile devices, route information, driving directions, and heading information that may be displayed to the requesting user. Sheha, 9:23-39.

[0307] For example, using Sheha’s system, a mobile device may request the location of a target mobile device through a phone call (what I term Sheha’s “mobile-to-mobile call embodiment”) or “without having to initiate a telephone call” (what I term Sheha’s “no-call embodiment”) by “only specifying a telephone number.” Sheha, 11:10-54, 11:55-58; *see also id.*, 12:1-7. If authorized,

the requesting device receives the position from the ODAS, including displaying a map illustrating the location of one or both mobile devices and navigational information. Sheha, 9:23-39. Sheha's Figure 3 (annotated below) illustrates an exemplary mobile-to-mobile system, showing connections between two mobile devices 18b-18c, such as cell phones or PDAs, and the ODAS, via a wireless network 22. Sheha, 10:66-11:35, FIG. 3.

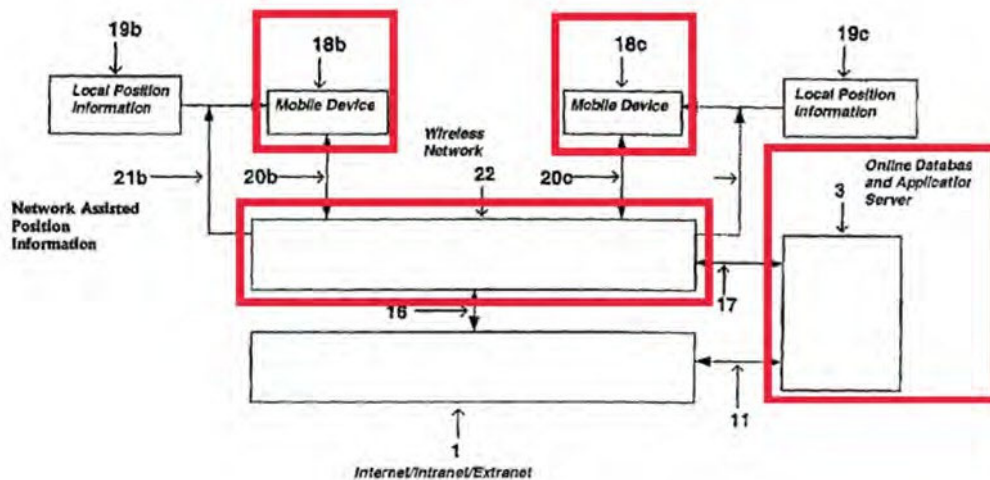


FIG. 3
Sheha, FIG. 3 (annotated)

[0308] FIG. 5 (below) illustrates a map displaying directions between the user's current location 34 and the target user's location 33, which can be displayed on mobile devices. Sheha, 4:52-58, 9:23-39.

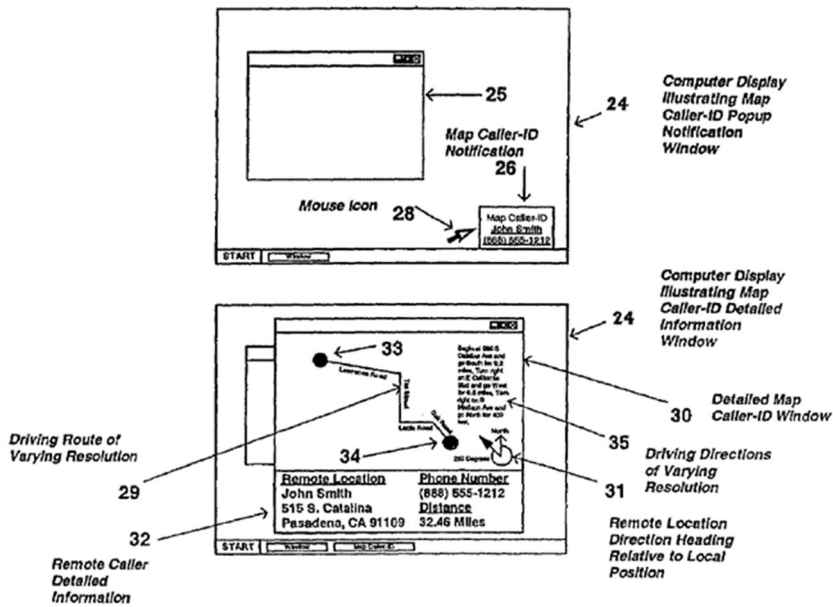


FIG. 5

Sheha, FIG. 5

2. Discussion of Sheha-Darling-Futagami Combination

[0309] As I discussed above (§VIII.F.1, §§VIII.A.2-3) and below, Sheha, Darling, and Futagami describe highly overlapping techniques and use cases.

[0310] All three describe a system 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.

[0311] 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. Sheha, 11:55-12:7; Darling, 3:3-5, 22:37-23:13, 33:16-34:3; Futagami 13:33-67, 14:1-44, FIGs. 15-16.

[0312] 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 other user if the receiving user has such access rights. Sheha, 12:1-7; Darling, 3:1-8; Futagami, 14:44-15:53, 18:26-19:27.

[0313] Therefore, a POSA implementing Sheha’s system would have been motivated to incorporate teachings and techniques from Darling and Futagami, and would have reasonably expected success given the similarities among the described systems. For example, POSAs would have been motivated to include supplementing Sheha’s access control techniques for 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. 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 (teaching to apply same techniques for “Requests for Access to this profile” to providing “access to My Location Details” as to providing “access to My Personal Details”).

[0314] As a specific example, for the above reasons, 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 to the requested information (i.e., do not have access rights), including providing the requesting user the option to have the server request access from the target user (or not). Futagami, 15:40-16:32, 18:62-20:67, FIGs. 19-20. POSAs would have understood Futagami’s technique to be desirable in Sheha’s system, for example, 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.

3. Mapping of Sheha-Darling-Futagami to Claims 1-3, 5-6, 11-16, 22-26, 29, and 33-35

[0315] As explained in the section below, in my opinion a POSA would have understood that the Sheha-Darling-Futagami combination meets all limitations of claims 1-3, 5-6, 11-16, 22-26, 29, and 33-35 of the ’540 patent, and therefore renders those claims obvious.

a. Claim 1

[0316] As explained in this section below, in my opinion a POSA would have understood that the Sheha-Darling-Futagami combination meets all limitations of claim 1 of the '540 patent, and therefore renders claim 1 obvious.

i. Preamble [1PRE]: A method of mobile-to-mobile locating, said method comprising:

[0317] Claim 1's preamble recites "A method... comprising." I understand that the preamble is not necessarily limiting. In this case, whether or not it is limiting does not affect my opinion as Sheha discloses the preamble. Sheha describes a "method for providing real-time position information of one party to another party by utilizing...a mobile telecommunications network."

Sheha, Abstract, 10:66-11:9

ii. Element [1A]: requesting a location of a first wireless device by a second wireless device from a server located remotely from said first and second wireless devices;

[0318] Sheha discloses a mobile-to-mobile configuration illustrated in FIG. 3 (below), where mobile devices 18b-18c wirelessly communicate (20b-20c) with "online database and application *server* (ODAS) 3" via "*wireless* network"

22. Sheha, 7:21-23, 10:67-11:35. Mobile devices can be "cellular telephone[s] or wireless voice-enabled PDA[s]." Sheha, 10:66-11:3. As FIG. 3 shows, ODAS 3 is *located remotely* from the mobile devices.

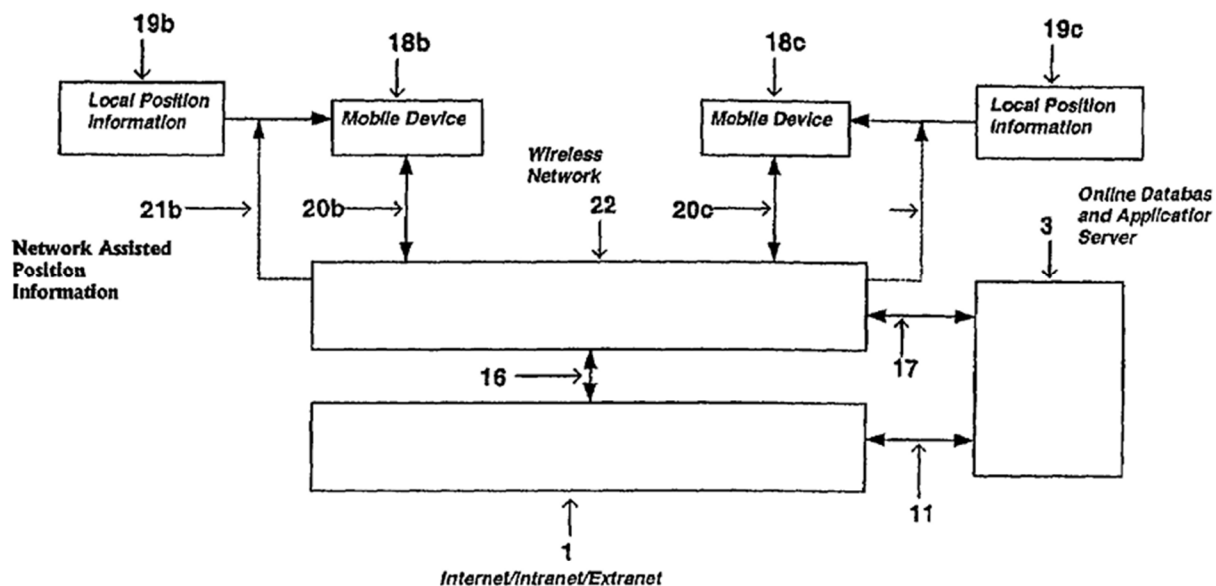


FIG. 3

Sheha, FIG. 3

[0319] Each mobile device determines and supplies its own position to the ODAS, from which another device can request it. Sheha, 10:5-16, 11:3-8, 11:15-20, 11:44-51. “A mobile...device can...*request position information of another mobile...device* by...specifying a telephone number,” with or without placing a telephone call to that number. Sheha, 11:55-12:7, 10:66-11:54. 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.

[0320] Thus, in my opinion, Sheha-Darling-Futagami meets Element [1A].

iii. Element [1B]: determining that said second wireless device does not have location access rights for said first wireless device;

[0321] 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. By teaching that 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*. See also Sheha, 5:37-41 (“each device has privacy settings that allow the device to *prevent or limit* other calling devices from obtaining position information”).

[0322] The target mobile device’s privacy/permissions settings information can include “a group database and authorization and authentication protocols” by which the target device’s user “can define a group of specific users that have access to” the target device’s location information. Sheha, 11:55-12:7, 4:59-5:20; *see also id.*, 13:65-14:2, 14:54-61, 19:9-13. The ODAS uses this

privacy information to determine whether the target device has 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.

[0323] I understand from counsel that in a previous IPR involving the '540 patent Mullen argued that Sheha's system querying a target device's "privacy settings" (Sheha, 4:59-5:46) does not teach determining that a different, third-party device ("*second wireless device*") lacks access rights. In my opinion, Mullen was incorrect. POSAs understand that Element [1B] does not require the *location access rights* to be exclusive to the *second wireless device*. Element [1B]'s language encompasses *determining that said second wireless device does not have location access rights for said first wireless device* for any reason—including, for example, if the *first wireless device* is not giving *location access rights* to anybody.

[0324] Element [1B]'s language also encompasses determining whether *location access rights* were provided to, e.g., a group of devices including the *second wireless device*. *See* EX1001, 13:9-12, 3:23-25 ('540 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, as Darling teaches. Darling, 41:20-42:2 ("A user defined group can be a single person."). Alternatively, allowing a target device's user to provide

permissions specific to individuals in addition to groups would have been an obvious variation because doing so was well-known as a beneficial option with reasonable expectation of success in a system like Sheha's, as Darling teaches and other prior art corroborates. Darling, 3:3-5 ("Each user may specify that location information is available only to *specified users or groups*"). My testimony regarding POSAs' background knowledge in this regard is corroborated by several references, as discussed in the paragraphs below.

[0325] For example, Randall (EX1007) describes "a user can also specify the remote database access rights given to different people or groups" (Randall, [0052]) and "can be associated with individual entities, and can also be associated with groups of entities." Randall, [0070]; *see also* Randall, [0136] ("Visible to specific people (or groups)"), [0144]-[0146] ("The user must be able to switch location information on for a person or group of people... Creating Buddy Lists[:] Some users will be prepared to allow specific people access to more of their data than others. These specific people or groups of people with greater visibility are referred to as Buddies."). Randall therefore corroborates that it was within a POSA's background knowledge to specify access rights for individuals in addition to groups and that a POSA would have had a reasonable expectation of success doing so in a system like Sheha's where mobile device users are accessing each other's locations.

[0326] Friedman describes location-based instant messaging in which a user can specify a subset of users in a buddy list that can access the user's positional data. Friedman, 12:60-13:21. POSAs would have understood that a subset of users can include a single user. Friedman corroborates that understanding by describing an example for assigning access rights for a single user: "User A may specify that 'User B' should only receive a measurement of the distance between User A and User B." Friedman, 13:5-7. Friedman therefore also corroborates that it was within a POSA's background knowledge to specify access rights for individuals in addition to groups and that a POSA would have had a reasonable expectation of success doing so in a system like Sheha's.

[0327] 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 variously (and interchangeably) referred to as "privacy settings," "permission settings," "privacy configuration," "position transfer permissions," etc. Sheha, 4:35-42, 4:59-5:46 (discussing "privacy settings" interchangeably with "permission settings" as applicable to mobile or landline, call or no-call embodiments), 10:17-26, 10:44-11:9, 11:55-12:7 (describing the mobile no-call embodiment using "privacy settings" and the same "authorization and authentication protocols" as the landline no-call embodiment that "utiliz[es] a

group database...to identify users that are permitted to access” position information). This is further corroborated by Sheha’s claims which recite “determining whether the first user is a member of the authorized user *group*” as part of “accessing *privacy* information” for the location of a “mobile telephone.” Sheha, 18:65-19:46 (*see* 19:9-15, 19:44-45).

[0328] 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. When both are employed, POSAs would have understood that a requesting user is only given access to a target device’s location if the requesting user has *location access rights* in the target device’s group database and to the extent the target device’s local privacy settings allow location sharing. Sheha, 4:59-5:20, 11:55-12:7. Sheha thus discloses that mobile-to-mobile embodiments can use the same “privacy settings” and “authorization and authentication protocols...similarly to” landline embodiments. Sheha, 12:4-7, 4:59-5:20, 8:42-53 (“ODAS 3 us[es] authentication and authorization protocols” to “verify the level of authority each user is granted”).

[0329] Alternatively, even if Sheha did not explicitly disclose using the group database permissions in mobile-to-mobile embodiments, doing so would have been an obvious variation because allowing a mobile user to specify a group

of other mobile users who have permission to access the user's location (or to provide access permission on an individual-user basis) was well-known as a beneficial option with reasonable expectation of success in a system like Sheha's, as Darling teaches and other prior art corroborates. Darling describes "enabl[ing] a user to determine the location of another user...by means of mobile devices."

Darling, 2:10-15. Darling describes that "the server stores permission information indicating whether the location information for the first user is available to the second user and the method preferably includes checking the permission information prior to the transmitting step." Darling, 3:1-15. "Each user may specify that location information...only to specified users or groups or categories of users or that the information is publicly available." Darling, 2:47-3:5; *see also* Darling, 32:39-33:32 ("17. Defining Access Right to Profile....18. 'People who have access to My Location Details', List of individuals who have access to the Location Details in a scrolling list.").

[0330] In another example, Sandhu (EX1016) describes "[a] method and system whereby two mobile units can locate each other." Sandhu, Abstract. A user who registers with Sandhu's system "can access the location of all other users who are registered with the system." Sandhu, 5:35-50. A user can also "limit the data exchange to a sub-group of users, such as friends, coworkers, and family" by "defining a distribution group in the user profile." Sandhu, 5:35-50. Sandhu

therefore corroborates that it was within a POSA's background knowledge to use group database permissions in mobile-to-mobile embodiments and that a POSA would have had a reasonable expectation of success doing so in a system like Sheha's.

[0331] In yet another example, Randall (EX1007) describes a user of a mobile device that can track the location of other mobile devices. Randall, Table 4, p. 24 ("People tracking" application, "New buddy finder" application, "Old buddy finder" application). Randall's system allows a user to assign access rights to individuals or groups. Randall, [0070] ("Access rights can be associated with individual entities, and can also be associated with groups of entities."). Randall describes using a database for storage of such access rights. Randall, [0052] ("In ADS, a user can also specify the remote database access rights given to different people or groups: an arbitrary group of entities may be stored as an attribute which gives access permissions to data in the database."); *see also* Randall, [0136], [0144]-[0148]. Further, Randall describes that users sharing their location can occur outside of a phone call. Randall, Table 4, p. 24 ("People tracking" application in which a user tracks the location of a user by polling a server). Randall therefore also corroborates that it was within a POSA's background knowledge to use a group database in a mobile embodiment and to exchange location information between mobile devices without initiating a phone call and

that a POSA would have had a reasonable expectation of success doing so in a system like Sheha's.

[0332] Darling and Futagami further render obvious implementing Sheha's system to perform Element [1B]'s *determining*, in the manner I discussed above (§VIII.A.5.a.iii, Ground 1, Element [1B]). Darling, 3:1-9, 35:24-28; Futagami, 15:40-53, FIG. 17 (arrow "N" from S62), FIG. 19 (P45), FIG. 20 (P55).

[0333] Thus, in my opinion, Sheha-Darling-Futagami meets Element [1B].

iv. Element [1C]: asking said second wireless device if said location access rights are to be requested from said first wireless device after determining that said second wireless device does not have said location access rights for said first wireless device;

[0334] As I discussed above (§VIII.A.5.a.iv), Futagami teaches to ask said second wireless device if the access rights to sensitive personal information are to be requested from said first wireless device after determining that said second wireless device does not have the access rights for said first wireless device. In the Sheha-Darling-Futagami combination I discussed above (§VIII.F.2), the personal information being requested is the *first wireless device's* location, and the access rights are *location access rights*, meeting Element [1C]. As I discussed above (§VIII.F.2), POSAs would have been motivated to implement this asking, to provide Sheha's requesting user with a way to obtain location access rights from

the target user, in a way that allows the requesting user to control whether to disturb the target user with an access request. POSAs would have reasonably expected success based on Futagami’s teachings of successful implementation of such functionality in a system like Sheha’s with a server sharing private information among wireless device users, as I discussed above (§VIII.F.2).

[0335] Thus, in my opinion, Sheha-Darling-Futagami meets Element [1C].

v. Element [1D]: requesting that said location access rights be assigned for said second wireless device by said first wireless device;

[0336] As I discussed above (§VIII.A.5.a.v), Futagami teaches *requesting that the access rights to the personal information be assigned for said second wireless device by said first wireless device*. In the combination with Sheha and Darling, as I discussed above (§VIII.F.2, §VIII.F.3.a.iv (Element [1C])), the access rights are *location access rights*, meeting [1D]. Darling further reinforces this, for the reasons I discussed above (§VIII.A.5.a.v). Darling, 3:1-19. Sheha, too, teaches that the server can “quer[y] the remote party of the position request for permission on whether the position request can be granted.” Sheha, 5:21-46.

[0337] Thus, in my opinion, Sheha-Darling-Futagami meets Element [1D].

vi. Element [1E]: assigning said location access rights on said server to said second wireless device by said first wireless device;

[0338] As I discussed above (§VIII.A.5.a.vi), Futagami teaches to prompt the *first wireless device* user to *assign the access rights on said server to said second wireless device* in response to a request as in Element [1D] (*supra* §VIII.F.3.a.v). Futagami, 16:25-32, 17:8-13, 19:60-65, FIG. 20. Darling reinforces this teaching, as I discussed above (§VIII.A.5.a.vi). Darling, 3:18-19. In the combination with Sheha and Darling, as I discussed above (§VIII.F.2, §VIII.F.3.a.iv (Element [1C]), §VIII.F.3.a.v (Element [1D])), the access rights are *location access rights*, meeting Element [1E]. As I discussed above (§VIII.F.3.a.iii, Element [1B]), 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 making the *second wireless device* user a member of a group defined as having access to the *first wireless device*’s location. Sheha, 5:29-34, 11:55-12:7.

[0339] Thus, in my opinion, Sheha-Darling-Futagami meets Element [1E].

vii. Element [1F]: storing said location access rights on said server;

[0340] Sheha teaches embodiments where the ODAS (*server*) 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 (“networked server system utilizing authentication and authorization procedures”), 4:8-18 (“online database and/or networked authentication and authorization connection server”), 7:22-23 (“online **database** and application server (ODAS)”), 8:42-53 (“ODAS 3 us[es] authentication and authorization protocols” to “verify the level of authority each user is granted”), 9:61-10:4. Alternatively, storing the group database and its utilization at the server would have been an obvious variation because doing so was well-known as a beneficial option with reasonable expectation of success in a system like Sheha’s, as Darling teaches and other prior art corroborates. Darling, 3:1-5 (“Preferably the **server stores permission information** indicating whether the location information for the first user is available to the second user”). My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed in the paragraphs below.

[0341] Sandhu (EX1054) describes a user setting up a user profile in a service provider (Sandhu, 5:9-34, 5:66-6:21), to limit location data access to a subgroup of users by “defining a distribution group in the user profile.” Sandhu, 5:35-51, *see also* 5:52-65. Sandhu describes that the “[s]ervice provider 8 may be a computer or a server linked to data network 4.” Sandhu, 6:22-50, 6:44-62 (“user profile database” may be stored in various formats). Sandhu therefore also

corroborates that it was within a POSA's background knowledge to implement a group database and utilize it at a server and that a POSA would have had a reasonable expectation of success doing so in the Sheha-Darling-Futagami combination.

[0342] Randall (EX1007) describes interactions between mobile devices and a database at a server. Randall, [0029]-[0030] (“An application resident on the device queries and receives data from the remote, extensible database.”). Randall also describes that a database hosted by a server can be used for determining whether a requesting user has access rights. Randall, [0046] (“internet servers hosting extensible databases”), [0047] (“[t]he database can define which entities can read different fields; Alice can therefore give Bob rights to read only certain fields in her database.”), [0052] (“[t]he ADS system includes additional access control mechanisms, such as checking the identity of the calling device at the server”). Randall discloses that the “ADS System [] includes an entire contacts database, referred to as a ‘Universe,’” which “is the list of all the entities known to an entity and to whom access to more private data is to be given.” Randall, [0511]; *see also* Randall, [0512]. For example, if Alice has an i-Group “business 1,” “someone in the business 1 group might see the Table 3 information in their contacts application,” which shows information about Alice that is available to contacts in “business 1.” Randall, [0513]. “The user interface”

of a wireless device will include some way to indicate “the freshness of the data (whether it has recently been updated from the i-Server).” Randall, [0514]. A POSA would understand that other users would have their own group database designated in their own “Universe” that is utilized from Randall’s i-Server.

Randall therefore corroborates that it was within a POSA’s background knowledge to implement a group database and utilize it at a server and that a POSA would have had a reasonable expectation of success doing so in the Sheha-Darling-Futagami combination.

[0343] Friedman (EX1015) describes a server monitoring a location of a user. Friedman, 12:60-13:21. Friedman also describes that a user can store their access right preferences on the server. Friedman, 13:10-21 (“User A’s preferences with respect to location tracking may be stored in User A’s configuration profile 1012 on the portal server 110...”). Friedman therefore also corroborates that it was within a POSA’s background knowledge to implement a group database and utilize it at a server and that a POSA would have had a reasonable expectation of success doing so in the Sheha-Darling-Futagami combination.

[0344] Also, with respect to any privacy settings set locally at the target device, POSAs would have understood that an obvious implementation would have been for the remote system to store those settings at the server after verifying them by querying the device (Sheha, 4:64-66), so the remote system

(server) can then apply them to determine whether to release the device’s location to a requesting user.

[0345] Further, as I discussed above (§VIII.A.5.a.vii, Ground 1, Element [1F]) Futagami teaches to *store the access rights on said server* when the *first wireless device* user provides them in response to a request as in Elements [1D]-[1E] (*supra* §§VIII.F.3.a.v-VIII.F.3.a.vi). Futagami, 16:49-58, 19:66-20:7, 20:60-67, FIGs. 17, 20.

[0346] Thus, in my opinion, Sheha-Darling-Futagami meets Element [1F].

viii. Element [1G]: determining said access rights assigned by said first wireless device to said second wireless device on said server; and

[0347] As I discussed above (§VIII.F.3.a.vii, Element [1F]), Sheha discloses the server storing and utilizing *said access rights assigned by said first wireless device to said second wireless device*. Further, Sheha discloses that the server receives updated location information from mobile devices. Sheha, 11:44-51. Because the target device may revoke access rights at any time, the server *determines* the requesting device’s access rights each time it provides updated location information. Sheha, 5:9-20, 5:34-46, 10:66-11:9

[0348] Additionally, Futagami teaches that the server “*determine[s]*” that “the restriction removal approval message has been received” from the *first*

wireless device, such that *said access rights are assigned*. Futagami, 16:49-58; *see also supra* §VIII.A.5.a.viii (Ground 1, Element [1G]). Because the requesting device previously did not have *access rights* (*supra* §VIII.F.3.a.iii, Element [1B]), POSAs would have understood that Sheha-Darling-Futagami will *determine* that it now has been *assigned access rights* before giving it the requested information.

[0349] Thus, in my opinion, Sheha-Darling-Futagami meets Element [1G].

ix. Element [1H]: providing said location from said server to said second wireless device dependent upon said access rights.

[0350] Sheha discloses that its server provides the *location* of the target device to the requesting device so long as it has been granted *location access rights*. Sheha, 5:2-7, 5:32-34, 10:66-11:9, 11:44-51. Further, Futagami teaches providing the requested information once the *first wireless device* has provided *said access rights*, as I discussed above (§VIII.A.5.a.ix, Ground 1, Element [1H]). Futagami, 16:49-61, 17:8-11, 19:66-20:7, FIGs. 17, 20; *see supra* §VIII.A.5.a.ix (where I discuss that claim 1 does not limit the order of performing elements [1F]-[1H], and that Futagami teaches either order, and any order would have been an obvious design choice to POSAs). Because the requesting device previously did not have *access rights* (*supra* §VIII.F.3.a.iii, Element [1B]), POSAs would have understood that Sheha-Darling-Futagami only gives the requesting device the

requested information dependent upon on a *determination* (*supra* §VIII.F.3.a.viii, Element [1G]) that it now has *access rights*.

[0351] Thus, in my opinion, Sheha-Darling-Futagami meets Element [1H].

b. Claim 2: The method of claim 1, wherein said first and second wireless devices are cellular phones.

[0352] Sheha discloses that the requesting and target devices can be *cellular phones*. Sheha, 10:66-11:3.

[0353] Thus, in my opinion, Sheha-Darling-Futagami meets claim 2.

c. Claim 3: The method of claim 1, 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.

[0354] As I discussed above (§VIII.F.3.a, claim 1), the *location access rights* in Sheha’s system *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*. Darling confirms this understanding. Darling, 2:1-12 (disclosing a server that stores and transmits location information “even when that other user[’s]...mobile telephone or other device is switched off”).

[0355] Thus, in my opinion, Sheha-Darling-Futagami meets claim 3.

- d. **Claim 5:** The method of claim 1, wherein said location is used to provide a location marker on a map on said second wireless device.

[0356] In Sheha's Figure 5 (annotated below), Sheha discloses displaying a "Map Caller-ID" screen on the requesting wireless device, with *location markers* 33 and 34 representing current locations of both requesting and target devices. Sheha, 4:52-58, 9:23-28, 11:37-42.

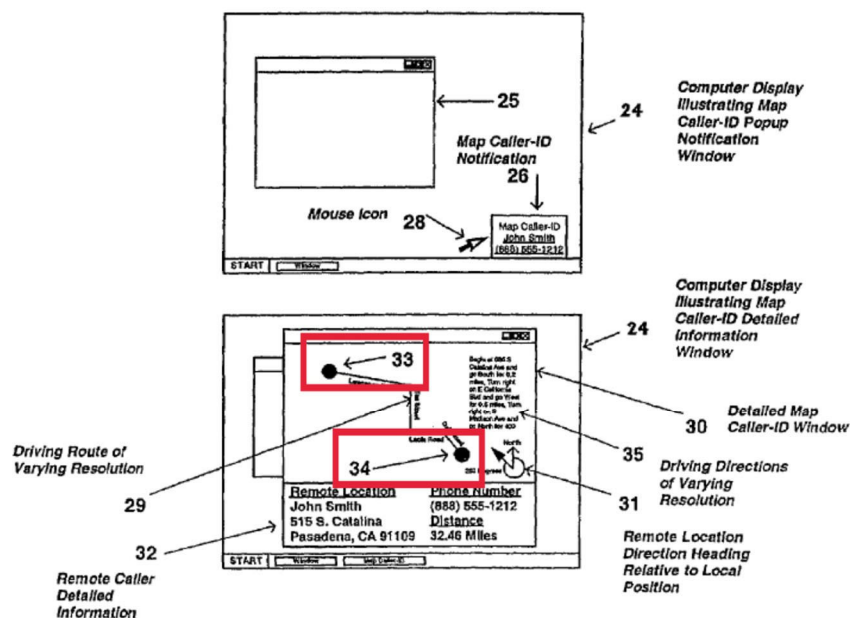


FIG. 5

Sheha, FIG. 5 (annotated)

[0357] Sheha discloses that such “a *map*...can be displayed on the mobile telephone.” Sheha, 4:43-58. While Figure 5 and 4:43-58 are presented in the context of examples involving a landline, they equally apply in the mobile-to-mobile context, which Sheha explains is “similar to a landline-to-mobile

application.” Sheha, 4:59-5:11, 4:13-18; *see also id.*, 4:52-58, 11:36-12:7. Sheha also discloses that both the target and the requesting device can display maps showing both devices’ locations. Sheha, 4:52-58, 11:10-51, *see also id.*, 11:42-44 (“both the originating and destination mobile device receive the Map Caller-ID”).

[0358] Alternatively, implementing Sheha to display the map, with the target device’s location, on either or both of the requesting and target wireless devices would have been obvious in view of POSAs’ background knowledge of the convenient option and reasonable expectation of success in doing so. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed in the paragraphs below.

[0359] Randall (EX1007) describes an application for mobile devices (e.g., “radio telephones, smart phones,” Randall, [0002]) in which a user’s friends or parents can track the user by “add[ing] a ‘map’ application to their own devices, which could show their position on digital maps and also, by using the location attribute of the user’s data object, it could also show the position of the user.” Randall, [0021], p. 29.

[0360] Sandhu (EX1054) concerns mobile units (e.g., PDAs, wireless phones, mobile units, Sandhu, Abstract) and describes “provid[ing] user 14-i [using mobile unit 10-i] with a map showing the location of user 14-2 relative to the location of user 14-i.” Sandhu, 6:22-50.

[0361] Wollrab (EX1014) describes “translat[ing] remote sensing location coordinates into a graphic map image, e.g. a .jpg or .gif file, depicting the relative locations of all members/PDA devices within a family.” Wollrab, 3:28-31. For example, mobile devices like “PDA device 14-1 through 14-5 can display a map image via display device 15-5 through 15-5 depicting the relative locations of all members/PDA devices within a family.” Wollrab, 4:43-58. The maps and location markers for different users displayed on a PDA device are illustrated, for example, in Wollrab’s FIG. 4B. *See also* Wollrab, FIGs. 1-4C.

[0362] Grube (EX1017) describes displaying, on mobile devices (Grube, 4:38-57, 5:13-17), maps of tracked vehicles, and the maps displaying icons to represent the current locations of the tracked vehicles. Grube, 6:59-7:6, *see also* Grube, 6:14-27. Grube’s FIG. 2, for example, “shows an example map display that may be provided to a user of a communication unit” that shows the “the current location of” vehicles “by respective vehicle icons.” Grube, 6:59-65.

[0363] Meadows (EX1018) describes “monitoring the geographical location of a subscriber’s mobile cellular telephone, and for providing the location information to an authorized user through the world wide web.” Meadows, 2:2-7. The authorized user can access the location information through various media including a “wireless handheld device 20b.” Meadows, 3:59-67. Meadows

describes the location information can be displayed on a map. Meadows, 5:48-57, FIG. 4B.

[0364] Thus, the above references corroborate my opinion that displaying a map on either or both of the requesting and target wireless devices with a marker representative of the location of the target wireless device was within a POSAs' background knowledge and that a POSA's reasonable expectation of success in doing so in Sheha-Darling-Futagami.

[0365] Thus, in my opinion, Sheha-Darling-Futagami meets claim 5.

- e. **Claim 6: The method of claim 1, wherein said location is used to provide directions from said second wireless device to said location on said second wireless device.**

[0366] Sheha discloses that if authorized, a target mobile device's location can be used on a requesting device "to obtain driving *directions* to that device," provided by the server. Sheha, 5:21-34, 11:44-51, FIG. 5 (directions 35 along route 29 annotated below).

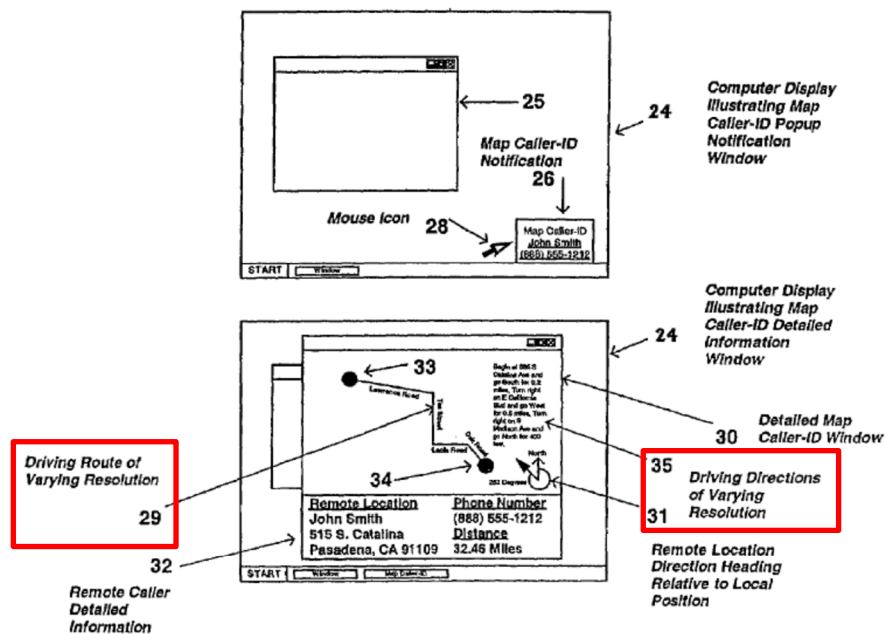


FIG. 5
Sheha, FIG. 5 (annotated)

[0367] Thus, in my opinion, Sheha-Darling-Futagami meets claim 6.

- f. **Claim 11: The method of claim 1, further comprising requesting said location of said first wireless device by a non-wireless device.**

[0368] Sheha discloses that a *non-wireless* “landline” device can request the location of a mobile phone device. Sheha, 9:50-10:4, FIG. 2.

[0369] Thus, in my opinion, Sheha-Darling-Futagami meets claim 11.

- g. Claim 12: The method of claim 1, further comprising obtaining a second location from a non-wireless device.**

[0370] Sheha discloses that the server and mobile phone can *obtain a second location* (i.e., a location from a *non-wireless* landline device). Sheha, 7:51-55, 9:40-47, 10:52-60.

[0371] Thus, in my opinion, Sheha-Darling-Futagami meets claim 12.

- h. Claim 13: The method of claim 1, further comprising receiving a login and password from said second wireless device to identify said second wireless device.**

[0372] Sheha discloses the use of unique identification tokens for server “authentication and authorization procedures.” Sheha, 3:4-10, 5:26-29.

Sheha further 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, in which the ODAS determines “that a particular user is signed-on to the system on a *particular device*” and whether the “user is genuine.” Sheha, 8:38-53.

[0373] Darling and Futagami both reinforce this teaching to meet claim 13, as I discussed above (§VIII.A.5.g, Ground 1, claim 13). Darling, 11:12-20, 19:11-14; Futagami, 8:62-67.

[0374] Thus, in my opinion, Sheha-Darling-Futagami meets claim 13.

- i. **Claim 14: The method of claim 1, wherein said location of said first wireless device is requested by receiving input, in the form of a telephone number of said first wireless device, on said second wireless device.**

[0375] Sheha discloses requesting the location of the target wireless device by *receiving input in the form of a telephone number* of the target device on the requesting device. Sheha, Abstract, 10:66-11:23, 11:55-58 (“A mobile...device can...*request* position information of another mobile...device by...specifying *a telephone number*”). Darling reinforces this, by teaching to allow a user to “Find People” by inputting the target user’s “Mobile Number” as a “search field.” Darling, 34:22-35:33.

[0376] Thus, in my opinion, Sheha-Darling-Futagami meets claim 14.

- j. **Claim 15: The method of claim 1, further comprising using said first wireless device to modify said location access rights for said second wireless device.**

[0377] As I discussed above (§VIII.F.3.a, claim 1), Sheha discloses that a target device’s user can define a list of authorized users and the target device’s user can change their privacy settings at any time using the target device, thereby *modifying location access rights*. Sheha, 5:9-20; 11:61-12:7. 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.

[0378] Thus, in my opinion, Sheha-Darling-Futagami meets claim 15.

- k. **Claim 16: The method of claim 1, further comprising the ability to use said first wireless device to delete said location access rights for said second wireless device.**

[0379] As I discussed above (§VIII.F.3.j, claim 15), Sheha discloses that a target device can modify a list of authorized users using the target device. That Sheha functionality includes terminating another user's access rights "at anytime," thereby deleting that user's location access rights. Sheha, 5:12-14. 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.

[0380] Thus, in my opinion, Sheha-Darling-Futagami meets claim 16.

- l. **Claim 22: The method of claim 1, further comprising requesting a second location from said first wireless device from a non-wireless device, wherein said non-wireless device does not comprise a positioning system.**

[0381] As I discussed above (§VIII.F.3.f, claim 11), Sheha discloses requesting a location (and subsequent location updates) of a target mobile device *from a non-wireless* landline device. Sheha, 10:47-52. Sheha discloses that the landline device *does not comprise a positioning system*, as its location is obtained by reverse telephone number lookup instead of GPS. Sheha, 7:51-54, 9:43-47.

[0382] Thus, in my opinion, Sheha-Darling-Futagami meets claim 22.

- m. Claim 23: The method of claim 1, wherein said location is provided by a positioning system.**

[0383] Sheha discloses that the mobile device's location is provided by a positioning system (e.g., GPS). Sheha, 10:5-16.

[0384] Thus, in my opinion, Sheha-Darling-Futagami meets claim 23.

- n. Claim 24: The method of claim 1, further comprising: providing a first dating matching profile by said first wireless device; providing a second dating matching profile by said second wireless device; obtaining a second location, wherein said second location is the location of said second wireless device; and utilizing said location, said second location, said first dating matching profile, and said second dating matching profile to provide an alert.**

[0385] As I discussed above (§VIII.A.5.p, Ground 1, claim 24), Darling teaches to allow each *wireless device* to provide a *dating matching profile* ("Pick-Up Profile," a.k.a. "Get Lucky Profile"). Darling, 57:12-60:1. Darling also teaches to obtain the devices' locations, "check[] for matches at the current location," and "send[]...a message" notifying a user of any matches, thus *utilizing the locations and the dating matching profiles to provide an alert*. Darling, 58:40-59:24.

[0386] Thus, in my opinion, Sheha-Darling-Futagami meets claim 24.

- o. Claim 25: The method of claim 1, further comprising providing a compass in said second wireless device.**

[0387] Sheha's map displays a "North" arrow 31 in the Map Caller-ID illustrated in Sheha's Figure 5 (annotated below). Sheha, 9:30-34.

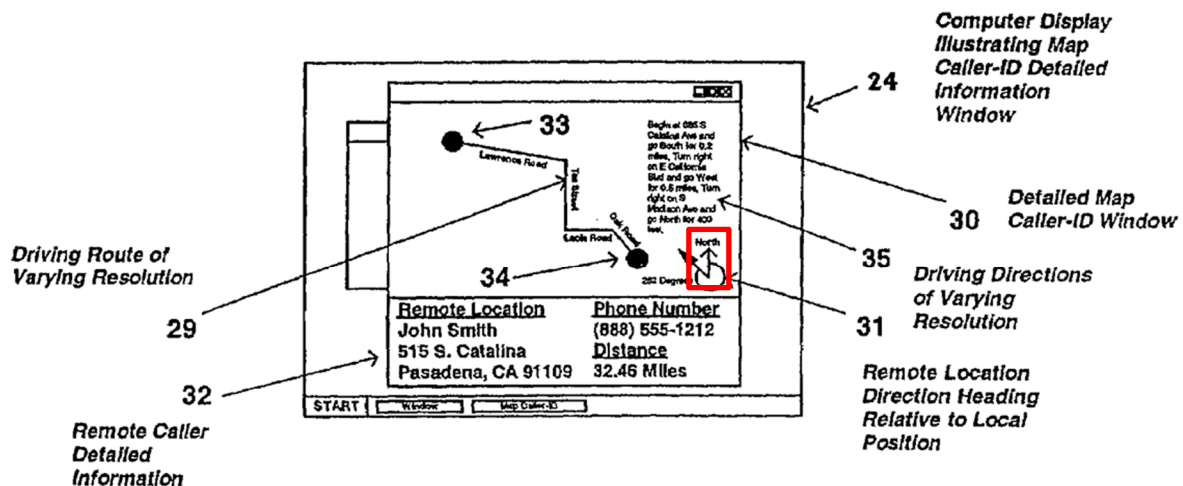


FIG. 5

Sheha, FIG. 5 (annotated)

[0388] In my opinion, POSAs would have found it obvious from their background knowledge to implement this by *providing a compass* in Sheha's displaying wireless device. My opinion in this regard is corroborated by EX1072 ("Johnson"), as I discussed above (§VIII.D.c, Ground 4, Claim 25 (citing corroborating EX1072, Abstract, FIGs. 2A-2D, 1:41-65, 3:56-5:20, 6:6-31)).

[0389] Thus, in my opinion, Sheha-Darling-Futagami meets claim 25.

- p. Claim 26: The method of claim 1, wherein a directional arrow is utilized to display the location of said first wireless device relative to said location of said second wireless device on said second wireless device.**

[0390] As shown in Sheha's Figure 5 (annotated below), Sheha discloses *a directional arrow displaying the location of the target wireless device relative to the location of the requesting device*. Sheha, 9:30-34, FIG. 5 (annotated below).

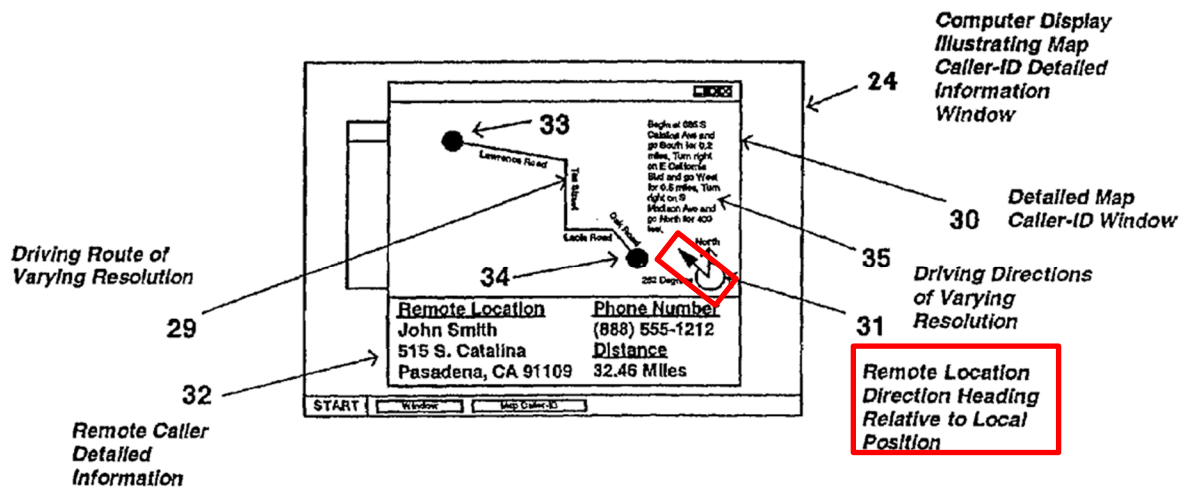


FIG. 5

Sheha, FIG. 5 (annotated)

[0391] Thus, in my opinion, Sheha-Darling-Futagami meets claim 26.

- q. **Claim 29: The method of claim 1, wherein said location access rights are only assigned for a period of time.**

[0392] Sheha discloses assigning *location access rights* for limited periods of time. Sheha, 3:10-13.

[0393] Thus, in my opinion, Sheha-Darling-Futagami meets claim 29.

- r. **Claim 33: The method of claim 1, further comprising displaying on said second wireless device the opportunity to request said location access rights from said first wireless device.**

[0394] Claim 33 is met by Futagami's teachings that I discussed above (§VIII.A.5.r, Ground 1, claim 33). As I discussed above (§VIII.A.5.r, Ground 1, claim 33; §VIII.F.3.a.iv, Ground 5, Element [1C]), Futagami teaches that after determining that *said second wireless device* does not have permission to access *said first wireless device* user's personal information, the server transmits a "refusal message" that is *displayed on the second wireless device* and provides the user *the opportunity to request the access rights from said first wireless device*, meeting claim 33. Futagami, 15:40-62.

[0395] Thus, in my opinion, Sheha-Darling-Futagami meets claim 33.

- s. **Claim 34: The method of claim 1, wherein said first wireless device is requested to manually allow said location access rights for said second wireless device every time said second wireless device requests said location.**

[0396] Sheha discloses manually allowing location access rights for the requesting wireless device every time the requesting device makes a location request by giving the user of the target device an “opt-in capability for position information transfer,” thereby allowing access “only for an instance.” Sheha, 5:41-44, 10:17-26. Additionally, Claim 34 is met by Futagami’s teachings that I discussed above (§VIII.A.5.s, Ground 1, claim 34). As I discussed above (§VIII.A.5.s, Ground 1, claim 34), Futagami teaches to *request said first wireless device to manually allow said location access rights for said second wireless device again, every time said second wireless device requests said location.* Futagami, 20:29-38, FIG. 21.

[0397] Thus, in my opinion, Sheha-Darling-Futagami meets claim 34.

- t. **Claim 35: The method of claim 1, wherein one of said location access rights is the ability to not allow said second wireless device to access said location.**

[0398] Sheha discloses that mobile devices may choose to not allow a requesting wireless device access to location information. Sheha, 5:37-46; 10:20-26.

[0399] Thus, in my opinion, Sheha-Darling-Futagami meets claim 35.

G. Ground 7: Claims 3, 7-8, and 27 are Unpatentable over Sheha in view of Darling, Futagami, and Ryden

[0400] As I explain in this section below, in my opinion claims 3, 7-8, and 27 of the '540 patent would have been obvious to a POSA in view of the combined teachings of Sheha (EX1005), Darling (EX1022), Futagami (EX1030), and Ryden.

[0401] I provided discussions above discussions of Sheha (§VIII.F.1), Darling (§VIII.A.2), Futagami (§VIII.A.3), Ryden (§VIII.B.1), and the Sheha-Darling-Futagami combination (§VIII.F.2).

1. Discussion of Sheha-Darling-Futagami-Ryden Combination

[0402] In my opinion, a POSA would have been motivated to incorporate functionalities taught by Ryden into the Sheha-Darling-Futagami combination's system (*supra* §VIII.F.2), including navigational aids such as a compass and/or speed/direction information, which were well-known navigation display techniques, as well as obtaining a wireless device's location even when it is turned OFF to allow, for example, locating a child even when their device was turned OFF. Because Sheha provides location determination capability and navigational capabilities (*see supra* §VIII.F.1), in my opinion POSAs would have had a reasonable expectation of success incorporating Ryden's functionality into Sheha's system. *See* Sheha, 11:37-51, 12:8-31.

2. Mapping of Sheha-Darling-Futagami-Ryden to Claims 3, 7-8, 27, and 31-32

- a. Claim 3: The method of claim 1, 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.**

[0403] In Sheha’s system, *said location access rights include the ability to obtain said location*, as I discussed above (§VIII.F.3.a, claim 1).

[0404] As I discussed above (§VIII.B.1), Ryden teaches to program a wireless device’s location reporting feature “to bypass the unit’s ON-OFF switch” so the device “respond[s] with its...location G#” even “when the unit 10 is turned OFF,” so as to “allow[] a stolen telephone unit” to be located. Ryden, 16:53-62; Ryden-Prov, 31:4-8. Additionally, Ganesh discusses providing location information from a call log when the target device is turned off. Ganesh, 7:62-65, 6:55-7:20. In my opinion, a POSA would have been motivated to incorporate either of these features in Sheha’s system to allow a contact (e.g., friend or family member) to locate a lost or stolen *first wireless device* or its user, and would have reasonably expected success in view of Ryden’s and/or Ganesh’s teachings that use the technique in a system similar to Sheha’s where wireless device GPS locations are being tracked.

[0405] My opinion is this regard is corroborated by Meadows (EX1018), which discloses that making “the device continue[] to transmit” “even

when the wireless device operator turns off the wireless device” is “useful for monitoring other individuals” and “useful for tracking devices such as misplaced cellular telephones”. Meadows, 7:20-33. *See also supra* §VIII.B.5.a (Ground 2, claim 3).

[0406] Thus, in my opinion, Sheha-Darling-Futagami-Ryden meets claim 3.

b. Claim 7: The method of claim 1, wherein said location is used to provide directions from said second wireless device to said location and a travel time on said second wireless device.

[0407] As I discussed above (§VIII.F.3.e, claim 6), Sheha discloses *providing directions from said second wireless device to said location*. Sheha discloses using location information to “provide typical navigational functionality,” which a POSA would have understood to include well-known navigational features such as *a travel time*. Sheha, 12:8-31.

[0408] Further, Ryden expressly teaches that when two parties wishing to meet are moving, using location information to provide *a travel time* is beneficial to help determine a “best meeting point.” Ryden, 19:49-61, 18:47-48, FIG. 17; Ryden-Prov., 35:12-16.

[0409] Thus, in my opinion, Sheha-Darling-Futagami-Ryden meets claim 7.

- c. **Claim 8: The method of claim 1, further comprising requesting a second location of said first wireless device and using said location and said second location to determine how fast said first wireless device is traveling.**

[0410] Sheha discloses that each device continuously determines and sends its updated position through the ODAS to the other mobile device. Sheha, 11:37-51. Thus, when the target mobile device updates its location, it determines and provides a second location at the ODAS's request. Sheha, 10:1-4.

[0411] Sheha discloses that location information can be used to “provide typical navigational functionality,” which a POSA would have understood to include a speed measurement. Sheha, 12:8-31. Further, Ryden expressly teaches using sequential locations to *determine how fast the wireless device is traveling*. Ryden, 18:33-50; 19:34-47 (“The velocity of car 160 [with an onboard wireless telephone] is easily established by a computer calculation of car movement as a time function”); Ryden-Prov., 16:3-15, 34:3-14, 35:4-11.

[0412] Thus, in my opinion, Sheha-Darling-Futagami-Ryden meets claim 8.

- d. **Claim 27: The method of claim 1, further comprising providing a compass in said second wireless device, wherein said compass is utilized to display the direction that said second wireless device is traveling in.**

[0413] As I discussed above (§VIII.F.3.o, claim 25), Sheha *provides a compass*. It would have been obvious based on Ryden and other background knowledge to utilize the compass to ascertain and display the direction the displaying device is traveling in. Using a compass to ascertain and display one's own heading had long been known in the art. *See, e.g.*, Ryden, 15:29-56 (disclosing providing a direction “from a caller telephone unit 10C to a desired callee telephone units 10D” based on information obtained from a “magnetic compass”); Ryden-Prov., 28:5-29:3; *see also supra* §VIII.D.3.e (discussing and citing EX1025 (“Wako”), 9:8-11, FIGs. 1A-1B, FIGs. 5-12).

[0414] Thus, in my opinion, Sheha-Darling-Futagami-Ryden meets claim 27.

H. Ground 8: Claims 4, 9-10, 17-18, 28, and 30 are Unpatentable over Sheha in view of Darling, Futagami, and De-Vries

[0415] As I explain in this section below, in my opinion claims 4, 9-10, 17-18, 28, and 30 of the '540 patent would have been obvious to a POSA in view of the combined teachings of Sheha (EX1005), Darling (EX1022), Futagami (EX1030), and De-Vries (EX1013). As I discuss further below (§§VIII.H.2.a-g),

De-Vries's teachings in the Sheha-Darling-Futagami-De-Vries combination meet claims 4, 9-10, 17-18, 28, and 30 for the same reasons the same teachings meet the same claims in the Randall-Darling-Futagami-De-Vries combination, as I discussed above (§§VIII.C.3.a-g).

[0416] I provided discussions above of Sheha (§VIII.F.1), Darling (§VIII.A.2), Futagami (§VIII.A.3), De-Vries (§VIII.C.1), and the Sheha-Darling-Futagami combination (§VIII.F.3).

1. Discussion of Sheha-Darling-Futagami-De-Vries Combination

[0417] In my opinion, POSAs would have been motivated by De-Vries's teachings (as I discussed above (§VIII.C.1)) to provide notifications via Sheha's wireless devices in the Sheha-Darling-Futagami combination (*supra* §VIII.F.2) when other users of interest are nearby, and to allow the users receiving these location alerts to set rules/parameters for receiving notifications, and the users whose locations are the subject of alerts to choose among various ways of defining what level of specificity/granularity of their location is disclosed to particular other device users.

[0418] In my opinion, POSAs would have found these techniques desirable to enable compatible mobile-device users to identify and navigate to each other. In my opinion, POSAs would have had a reasonable expectation of success based on De-Vries's teachings of successfully implementing such functionality in a

system similar to Sheha's, where wireless device users are accessing each other's locations (*see supra* §VIII.F.1).

[0419] As I explain in the sections below, De-Vries's teachings in this Sheha-Darling-Futagami-De-Vries combination meet claims 4, 9-10, 17-18, 28, and 30 for the same reasons the same teachings meet the same claims in Randall-Darling-Futagami-De-Vries that I discussed above (§VIII.C.3).

2. Mapping of Sheha-Darling-Futagami-De-Vries to Claims 4, 9-10, 17-18, 28, and 30

a. Claim 4: The method of claim 1, wherein said location access rights comprise a plurality of access levels.

[0420] De-Vries teaches to allow the *first wireless device* user to control the granularity at which the “user discloses their location to others,” 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. Thus, in my opinion, POSAs would have had motivation and reasonable expectation of success to implement the Sheha-Darling-Futagami-De-Vries combination such that *said location access rights comprise a plurality of access levels* (e.g., an exact-location level and an approximate-by-city level). *See supra* §VIII.H.1.

[0421] Thus, in my opinion, Sheha-Darling-Futagami-De-Vries meets claim 4.

- b. **Claim 9: The method of claim 1, 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.**

[0422] As I discussed above (§VIII.H.2.a, claim 4), De-Vries teaches that the location access rights comprise a plurality of levels, comprising the exact location and an approximate location of said first wireless device.

[0423] Thus, in my opinion, Sheha-Darling-Futagami-De-Vries meets claim 9.

- c. **Claim 10: The method of claim 1, 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.**

[0424] As I discussed above (§VIII.H.2.a, claim 4), De-Vries teaches that the access rights comprise a plurality of levels, including an approximate location of said first wireless device that comprises a city.

[0425] Thus, in my opinion, Sheha-Darling-Futagami-De-Vries meets claim 10.

- d. **Claim 17: The method of claim 1, further comprising filtering information about said location such that only a portion of the information is passed to said second wireless device.**

[0426] As I discussed above (§VIII.H.2.a, claim 4), De-Vries teaches filtering information about said location such that only a portion (e.g., just the city) is passed to said second wireless device.

[0427] Thus, in my opinion, Sheha-Darling-Futagami-De-Vries meets claim 17.

- e. **Claim 18: The method of claim 1, further comprising alerting said second wireless device when said first wireless device is within a distance of second wireless device.**

[0428] De-Vries teaches to *alert* wireless device users when other wireless device users of interest are nearby. 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, 5:20-62 (wireless device GPS locations are “stored in the people/place database” on the server to “provide *alerts*” to other users’ devices).

[0429] In particular, De-Vries 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. This proximity parameter can have the form of a geographic *distance* threshold, e.g., a radius in miles or kilometers, within which the people...must be located to be considered in proximity to the user.”).

[0430] Thus, in my opinion, Sheha-Darling-Futagami-De-Vries meets claim 18.

f. Claim 28: The method of claim 1, further comprising setting location alerts associated with said first wireless device on said second wireless device.

[0431] De-Vries teaches to allow the receiving device user to *set* the rules/parameters for receiving *location alerts associated with* a particular other *wireless device*, to provide the user with control over what alerts they receive and about whom. De-Vries, 2:52-59 (device “user can set rules and/or parameters to control when notifications are generated”—“[f]or example, a user may set a proximity parameter designating that notifications are provided only when the other users on his or her buddy list are within a certain proximity”), 3:5-14 (“[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.”).

[0432] Thus, in my opinion, Sheha-Darling-Futagami-De-Vries meets claim 28.

g. Claim 30: The method of claim 1, further comprising alerting said second wireless device when said first wireless device enters a geographic area.

[0433] De-Vries also teaches to *alert said second wireless device when said first wireless device enters a geographic area*, as determined by “proximity parameters, such as same city/town/neighborhood.” De-Vries, 9:8-13.

[0434] Thus, in my opinion, Sheha-Darling-Futagami-De-Vries meets claim 30.

I. Ground 9: Claims 19-21 are Unpatentable over Sheha in view of Darling, Futagami, and Smith

[0435] As I explain in this section below, in my opinion claims 19-21 of the '540 patent would have been obvious to a POSA in view of the combined teachings of Sheha (EX1005), Darling (EX1022), Futagami (EX1030), and Smith (EX1023).

[0436] I provided discussions above of Sheha (§VIII.F1), Darling (§VIII.A.2), Futagami (§VIII.A.3), and the Sheha-Darling-Futagami combination (§VIII.F3).

1. Smith (EX1023)

[0437] Smith describes a cellphone user interface that displays a contact list on a cellphone for viewing and selecting a contact of interest, including

viewing contact location information. Smith, 5:15-18, 6:53-7:3, 7:41-49, 10:29-11:4, FIGs. 15B (below), FIG. 16. A contact list view provides an icon associated with a contact's location, such as, for example, the location of a caller. Smith, 10:61-11:4.

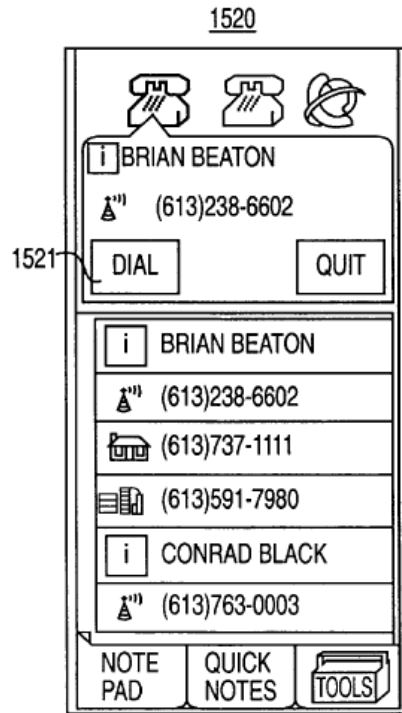


FIG. 15B

Smith, FIG. 15B

2. Discussion of Sheha-Darling-Futagami-Smith Combination

[0438] As Smith demonstrates (*supra* §VIII.I.1), contact-list functionality for selecting and viewing information about contacts was typical in wireless devices like Sheha's. In my opinion, POSAs would have understood that Sheha's mobile devices (*supra* §VIII.F.1), which include wireless telephones, would have included common features such as contact-list functionality for

selecting and viewing information about selected contacts, which were typical in wireless telephones, as demonstrated by and discussed in Smith. Therefore, in my opinion, a POSA would have been motivated and reasonably expected success in incorporating such functionality into the Sheha-Darling-Futagami combination (§VIII.F.2), given that such functionality was typical in wireless devices like Sheha's.

3. Mapping of Sheha-Darling-Futagami-Smith Combination to Claims 19-21

- a. Claim 19: The method of claim 1, further comprising selecting said first wireless device from an identifier list.**

[0439] Sheha discloses manually dialing telephone numbers. Sheha, 11:12-15. The use of identifier lists such as digital phonebooks and contact lists was well known the art, such as the list taught by Smith. Smith, 9:43-47, FIG. 15A (below).

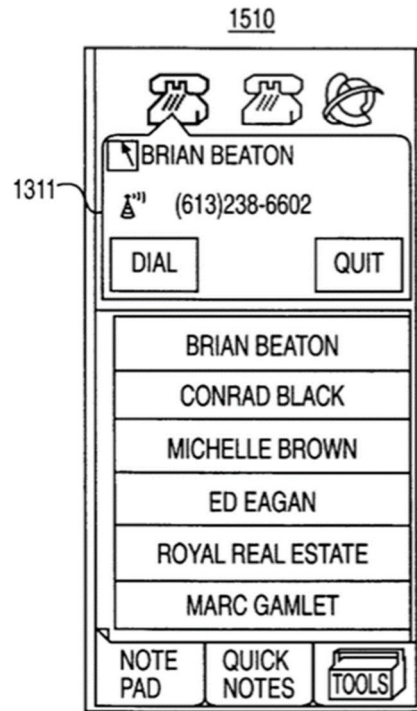


FIG. 15A

Smith, FIG. 15A

[0440] When the Smith identifier list is used in the Sheha-Darling-Futagami-Smith combination as I discussed above (§VIII.I.2), the user of the requesting device conveniently can *select* the target device from this *identifier list* as an alternative to manually dialing telephone numbers (Sheha, 11:12-15).

[0441] Thus, in my opinion, Sheha-Darling-Futagami-Smith meets claim 19.

- b. **Claim 20:** The method of claim 1, further comprising selecting said first wireless device from an identifier list wherein said identifier list comprises a list of telephone numbers.

[0442] Smith teaches that the *identifier list*, from which *said first wireless device* is selected, comprises a list of telephone numbers for each contact; as a user scrolls through the compressed view, the telephone number of each name is displayed. Smith, 9:19-24, 9:50-57, FIGs. 15A-15B (below).

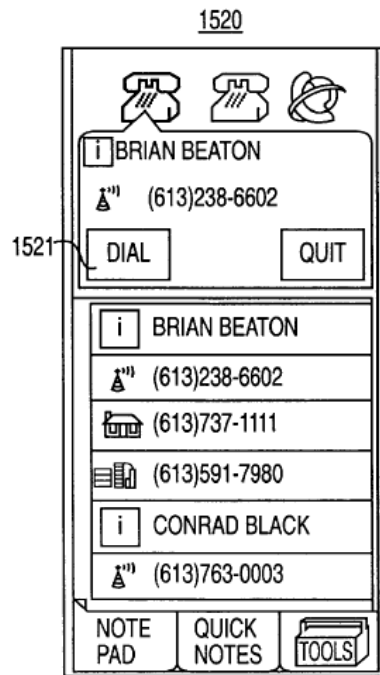


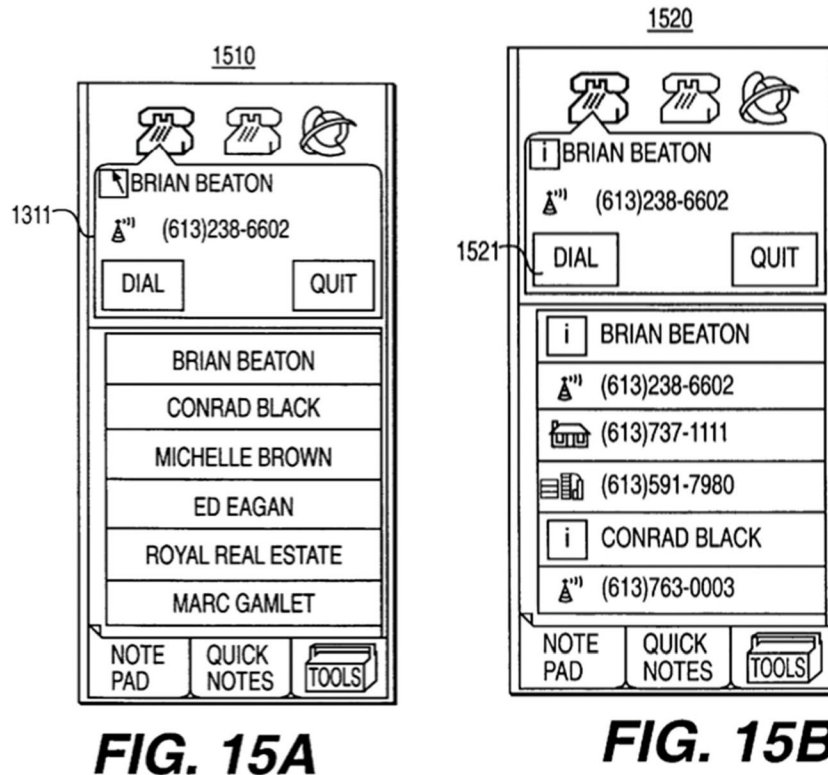
FIG. 15B

Smith, FIG. 15B

[0443] Thus, in my opinion, Sheha-Darling-Futagami-Smith meets claim 20.

- c. **Claim 21:** The method of claim 1, further comprising selecting said first wireless device from an identifier list wherein said identifier list comprises a list of user profiles.

[0444] Smith discloses that each entry in the *identifier list*, from which *said first wireless device is selected*, represents a user profile including various information for that user. Smith, 6:65-7:3, 8:18-19, 9:43-55, FIGs. 15A-15B (below).



Smith, FIGs. 15A-15B

[0445] Thus, in my opinion, Sheha-Darling-Futagami-Smith meets claim 21.

J. Ground 10: Claims 31 and 32 are Unpatentable over Sheha in view of Darling, Futagami, and Wollrab

[0446] As I explain in this section below, in my opinion claims 31 and 32 of the '540 patent would have been obvious to a POSA in view of the Sheha (EX1005), Darling (EX1022), Futagami (EX1030), and Wollrab (EX1014).

[0447] I provided discussions above of Sheha (§VIII.F.1), Darling (§VIII.A.2), Futagami (§VIII.A.3), and the Sheha-Darling-Futagami combination (§VIII.F.2).

1. Discussion of Sheha-Darling-Futagami-Wollrab Combination

[0448] In my opinion, POSAs would have been motivated to incorporate into the Sheha-Darling-Futagami combination (*supra* §VIII.F.2) the functionalities taught by Wollrab for storing a mobile device's call and location history, to allow a mobile device to be located when it is turned off, for example, to locate the user's child when the user's device is turned off. POSAs would have reasonably expected success in incorporating these functionalities from Wollrab into the Sheha-Darling-Futagami combination because Sheha and Wollrab are both directed to wireless device location finding and sharing, and Wollrab's functionality would have required only straightforward modifications to integrate into the Sheha-Darling-Futagami combination's system.

2. Mapping of Sheha-Darling-Futagami-Wollrab to Claims 31-32

[0449] Wollrab's teachings in the Sheha-Darling-Futagami-Wollrab combination (*supra* §VIII.J.1) meet the recitations of claims 31-32 for the same reasons the same Wollrab teachings in the Randall-Darling-Futagami-Wollrab combination (*supra* §VIII.E.2) meet the recitations of claims 31-32 (*supra* §§VIII.E.3.a-b).

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

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

Dated: 11-22-2024



IX. APPENDIX: CLAIM LISTING

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

Claim 1
[1PRE] A method of mobile-to-mobile locating, said method comprising:
[1A] requesting a location of a first wireless device by a second wireless device from a server located remotely from said first and second wireless devices;
[1B] determining that said second wireless device does not have location access rights for said first wireless device;
[1C] asking said second wireless device if said location access rights are to be requested from said first wireless device after determining that said second wireless device does not have said location access rights for said first wireless device;
[1D] requesting that said location access rights be assigned for said second wireless device by said first wireless device;
[1E] assigning said location access rights on said server to said second wireless device by said first wireless device;
[1F] storing said location access rights on said server;
[1G] determining said access rights assigned by said first wireless device to said second wireless device on said server; and
[1H] providing said location from said server to said second wireless device dependent upon said access rights.
Claim 2
The method of claim 1, wherein said first and second wireless devices are cellular phones.
Claim 3
The method of claim 1, 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 4
The method of claim 1, wherein said location access rights comprise a plurality of access levels.
Claim 5
The method of claim 1, wherein said location is used to provide a location marker on a map on said second wireless device.

Claim 6
The method of claim 1, wherein said location is used to provide directions from said second wireless device to said location on said second wireless device.
Claim 7
The method of claim 1, wherein said location is used to provide directions from said second wireless device to said location and a travel time on said second wireless device.
Claim 8
The method of claim 1, further comprising requesting a second location of said first wireless device and using said location and said second location to determine how fast said first wireless device is traveling.
Claim 9
The method of claim 1, 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 10
The method of claim 1, 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 11
The method of claim 1, further comprising requesting said location of said first wireless device by a non-wireless device.
Claim 12
The method of claim 1, further comprising obtaining a second location from a non-wireless device.
Claim 13
The method of claim 1, further comprising receiving a login and password from said second wireless device to identify said second wireless device.
Claim 14
The method of claim 1, wherein said location of said first wireless device is requested by receiving input, in the form of a telephone number of said first wireless device, on said second wireless device.
Claim 15
The method of claim 1, further comprising using said first wireless device to modify said location access rights for said second wireless device.

Claim 16
The method of claim 1, further comprising the ability to use said first wireless device to delete said location access rights for said second wireless device.
Claim 17
The method of claim 1, further comprising filtering information about said location such that only a portion of the information is passed to said second wireless device.
Claim 18
The method of claim 1, further comprising alerting said second wireless device when said first wireless device is within a distance of second wireless device.
Claim 19
The method of claim 1, further comprising selecting said first wireless device from an identifier list.
Claim 20
The method of claim 1, further comprising selecting said first wireless device from an identifier list wherein said identifier list comprises a list of telephone numbers.
Claim 21
The method of claim 1, further comprising selecting said first wireless device from an identifier list wherein said identifier list comprises a list of user profiles.
Claim 22
The method of claim 1, further comprising requesting a second location from said first wireless device from a non-wireless device, wherein said non-wireless device does not comprise a positioning system.
Claim 23
The method of claim 1, wherein said location is provided by a positioning system.
Claim 24
[24PRE] The method of claim 1, further comprising:
[24A] providing a first dating matching profile by said first wireless device;
[24B] providing a second dating matching profile by said second wireless device;
[24C] obtaining a second location, wherein said second location is the location of said second wireless device; and
[24D] utilizing said location, said second location, said first dating matching profile, and said second dating matching profile to provide an alert.
Claim 25
The method of claim 1, further comprising providing a compass in said second wireless device.

Claim 26
The method of claim 1, wherein a directional arrow is utilized to display the location of said first wireless device relative to said location of said second wireless device on said second wireless device.
Claim 27
The method of claim 1, further comprising providing a compass in said second wireless device, wherein said compass is utilized to display the direction that said second wireless device is traveling in.
Claim 28
The method of claim 1, further comprising setting location alerts associated with said first wireless device on said second wireless device.
Claim 29
The method of claim 1, wherein said location access rights are only assigned for a period of time.
Claim 30
The method of claim 1, further comprising alerting said second wireless device when said first wireless device enters a geographic area.
Claim 31
The method of claim 1, wherein said server stores a history of locations for said first wireless device.
Claim 32
The method of claim 1, wherein said server stores a history of locations for said first wireless device and said history is utilized to provide an approximate location of said first wireless device when said first wireless device is turned OFF.
Claim 33
The method of claim 1, further comprising displaying on said second wireless device the opportunity to request said location access rights from said first wireless device.
Claim 34
The method of claim 1, wherein said first wireless device is requested to manually allow said location access rights for said second wireless device every time said second wireless device requests said location.
Claim 35
The method of claim 1, wherein one of said location access rights is the ability to not allow said second wireless device to access said location.