

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. IPR2025-00197
Patent No. 11,109,218

DECLARATION OF DAVID H. WILLIAMS

Google Exhibit 1003 Google v Mullen IPR2025-00197

TABLE OF CONTENTS (CONDENSED)

I.	PERSONAL AND PROFESSIONAL BACKGROUND	1
II.	MATERIALS REVIEWED AND CONSIDERED	11
III.	MY UNDERSTANDING OF PATENT LAW	13
	A. Anticipation	15
	B. Obviousness.....	15
IV.	PERSON OF ORDINARY SKILL IN THE ART (“POSA”).....	18
V.	THE ’218 PATENT	20
	A. Specification Embodiments.....	21
	B. Prosecution History of the ’218 Patent.....	23
	C. The Challenged Claims	23
VI.	CLAIM INTERPRETATION	24
VII.	PRIOR-ART REFERENCES	24
	A. Background on Motivation to Combine and Reasonable Expectation of Success in Combining Prior Art	24
	B. Sheha (EX1005)	30
	C. Randall (EX1007).....	41
	D. Wollrab (EX1014)	45
	E. Mura-Smith (EX1067).....	45
	F. Obradovich (EX1043)	46
	G. Song (EX1069)	46
	H. McDonnell (EX1042).....	47
VIII.	THE CHALLENGED CLAIMS ARE UNPATENTABLE IN LIGHT OF THE PRIOR ART.....	47
	A. Ground 1: Claim 1-5 and 11-15 are Unpatentable Over Randall in view of Wollrab and Obradovich	48
	1. Discussion of Randall (EX1007-EX1008).....	48
	2. Discussion of Wollrab (EX1014).....	52
	3. Discussion of Obradovich (EX1043)	53
	4. Discussion of Randall-Wollrab-Obradovich Combination.....	54

5. Mapping of Randall-Wollrab-Obradovich Combination to Claim 1-5 and 11-15.....	56
B. Ground 2: Claims 6-10 are Unpatentable Over Randall in view of Wollrab, Obradovich, and Mura-Smith.....	106
1. Discussion of Mura-Smith (EX1067)	106
2. Discussion of Randall-Wollrab-Obradovich-(Mura-Smith) Combination	107
3. Mapping of Randall-Wollrab-Obradovich-(Mura-Smith) Combination to Claims 6-10	107
C. Ground 3: Claims 16-19 are Unpatentable over Randall in view of Song	119
1. Discussion of Song (EX1069).....	119
2. Discussion of Randall-Song Combination	120
3. Mapping of Randall-Song Combination to Claims 16-19	121
D. Ground 4: Claims 1 and 3-4 are Unpatentable Over Sheha in view of Wollrab.....	133
1. Discussion of Sheha (EX1005)	133
2. Discussion of Sheha-Wollrab Combination.....	137
3. Mapping of Sheha-Wollrab Combination to Claims 1 and 3-4	138
E. Ground 5: Claims 6-9 and 11-14 are Unpatentable over Sheha in view of Wollrab and Obradovich	156
1. Discussion of Sheha-Wollrab-Obradovich Combination	156
2. Mapping of Sheha-Wollrab-Obradovich Combination to Claims 6-9 and 11-4.....	156
F. Ground 6: Claims 2, 5, 10, and 15 are Unpatentable over Sheha in view of Wollrab, Obradovich, and McDonnell.....	180
1. McDonnell (EX1042).....	180
2. Discussion of the Sheha-Wollrab-Obradovich-McDonnell Combination	181
3. Mapping of Sheha-Wollrab-Obradovich-McDonnell Combination to Claims 2, 5, 10, and 15.....	182

G. Ground 7: Claims 16-19 are Unpatentable over Sheha in view of Song	186
1. Discussion of the Sheha-Song Combination.....	186
2. Mapping of the Sheha-Song Combination to Claims 16-19.....	187
IX. APPENDIX: CLAIM LISTING.....	194

TABLE OF CONTENTS (FULL)

I.	PERSONAL AND PROFESSIONAL BACKGROUND	1
II.	MATERIALS REVIEWED AND CONSIDERED	11
III.	MY UNDERSTANDING OF PATENT LAW	13
	A. Anticipation	15
	B. Obviousness.....	15
IV.	PERSON OF ORDINARY SKILL IN THE ART (“POSA”).....	18
V.	THE ’218 PATENT	20
	A. Specification Embodiments.....	21
	B. Prosecution History of the ’218 Patent.....	23
	C. The Challenged Claims	23
VI.	CLAIM INTERPRETATION	24
VII.	PRIOR-ART REFERENCES	24
	A. Background on Motivation to Combine and Reasonable Expectation of Success in Combining Prior Art	24
	B. Sheha (EX1005)	30
	C. Randall (EX1007).....	41
	D. Wollrab (EX1014).....	45
	E. Mura-Smith (EX1067).....	45
	F. Obradovich (EX1043)	46
	G. Song (EX1069).....	46
	H. McDonnell (EX1042).....	47
VIII.	THE CHALLENGED CLAIMS ARE UNPATENTABLE IN LIGHT OF THE PRIOR ART.....	47
	A. <u>Ground 1</u> : Claim 1-5 and 11-15 are Unpatentable Over Randall in view of Wollrab and Obradovich	48
	1. Discussion of Randall (EX1007-EX1008).....	48
	2. Discussion of Wollrab (EX1014).....	52
	3. Discussion of Obradovich (EX1043).....	53

4. Discussion of Randall-Wollrab-Obradovich Combination.....	54
5. Mapping of Randall-Wollrab-Obradovich Combination to Claim 1-5 and 11-15.....	56
a. Claim 1	56
i. Preamble [1PRE]: A system comprising:	56
ii. Element [1A]: a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred and after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device, ...	56
iii. Element [1B]: wherein said display screen includes a map provided with respect to the location of said first wireless telephonic device, ...	64
iv. Element [1C]: said display screen includes indicia on said map representative of a first location, ...	66
v. Element [1D]: said display screen includes indicia representative of a second location obtained from said third wireless telephonic device, ...	69
vi. Element [1E]: said display screen includes a distance from said first wireless telephonic device to said first location, and.....	71
vii. Element [1F]: said display includes an address associated with said first location.	77
b. Claim 2: The system of claim 1, wherein said permission includes several location access rights, wherein each one of said several location access rights are associated with different location resolutions.	83
c. Claim 3: The system of claim 1, wherein said permission is stored on a server remote to said second wireless telephonic device, said third wireless telephonic device, and said first wireless telephonic device.....	86

d.	Claim 4: The system of claim 1, wherein said third wireless device associates a second permission with said second location to permit said first wireless telephonic device to access said second location.	87
e.	Claim 5: The system of claim 1, wherein said permission of said second wireless telephonic device is associated with one of several access levels with said first location, said one of said several access levels permits said first wireless telephonic device to access said first location.	88
f.	Claim 11	89
i.	Preamble [11PRE]: A system comprising:.....	89
ii.	Element [11A]: a wireless device operable to provide a display screen after a request from said wireless telephonic device for access to a first location of a first wireless device, ...	90
iii.	Element [11B]: wherein said display screen includes a map from the perspective of said wireless device, ...	90
iv.	Element [11C]: said display screen includes indicia on said map representative of said first location, ...	91
v.	Element [11D]: said display screen includes indicia on said map representative of a second user according to a second location obtained from a second wireless device, and.....	91
vi.	Element [11E]: said display screen includes a distance from said wireless telephonic device to said first location, ...	91
vii.	Element [11F]: said display screen includes a compass,.....	92
viii.	Element [11G]: said display screen includes an address of said first location, and	99
ix.	Element [11H]: said display screen includes a travel time based on at least the first location and the location of said wireless telephonic device.	99
g.	Claim 12: The system of claim 11, wherein said first wireless device associates a permission with said first	

location to permit said wireless telephonic device to access said first location.	104
h. Claim 13: The system of claim 11, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location and said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.....	104
i. Claim 14: The system of claim 11, wherein said first wireless device associates a first permission with said first location to permit said wireless telephonic device to access said first location and said second wireless device associates a second permission with said second location to permit said wireless telephonic device to access said second location.....	105
j. Claim 15: The system of claim 11, wherein said first wireless device associates one of several access levels with said first location, said one of said several access levels permits said wireless telephonic device to access said first location.	105
B. <u>Ground 2</u> : Claims 6-10 are Unpatentable Over Randall in view of Wollrab, Obradovich, and Mura-Smith.....	106
1. Discussion of Mura-Smith (EX1067)	106
2. Discussion of Randall-Wollrab-Obradovich-(Mura-Smith) Combination	107
3. Mapping of Randall-Wollrab-Obradovich-(Mura-Smith) Combination to Claims 6-10	107
a. Claim 6	108
i. Preamble [6PRE]: A system comprising:	108
ii. Element [6A]: a wireless telephonic device operable to provide a display screen after a request from said wireless telephonic device for access to a first location of a first wireless device, ...	108
iii. Element [6B]: wherein said display screen includes a map provided from a perspective of said wireless telephonic device, ...	109

iv.	Element [6C]: said display screen includes indicia on said map representative of said first location, ...	110
v.	Element [6D]: said display screen includes indicia on said map representative of a second location obtained from a second wireless device, and	110
vi.	Element [6E]: said display screen includes a distance from said wireless telephonic device to said first location,.....	110
vii.	Element [6F]: said display screen includes a compass,.....	111
viii.	Element [6G]: said display screen includes a directional arrow representative of the direction of said first location with respect to the location of said wireless telephonic device, and	111
ix.	Element [6H]: a determination is operable to be made to provide on said wireless telephonic device for a travel time from said first location to said wireless telephonic device.	116
b.	Claim 7: The system of claim 6, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location.....	116
c.	Claim 8: The system of claim 6, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location and said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.	117
d.	Claim 9: The system of claim 6, wherein said first wireless device associates a first permission with said first location to permit said wireless telephonic device to access said first location and said second wireless device associates a second permission with said second location to permit said wireless telephonic device to access said second location.	118
e.	Claim 10: The system of claim 6, wherein said first wireless device associates one of several access levels	

with said first location, said one of said several access levels permits said wireless telephonic device to access said first location.....	119
C. <u>Ground 3</u> : Claims 16-19 are Unpatentable over Randall in view of Song	119
1. Discussion of Song (EX1069).....	119
2. Discussion of Randall-Song Combination	120
3. Mapping of Randall-Song Combination to Claims 16-19	121
a. Claim 16.....	121
i. Preamble [16PRE]: A system comprising:.....	121
ii. Element [16A]: a first device operable to identify a user identification on said first device by receiving a login and password from said first device, ...	122
iii. Element [16B]: a first location is operable to be recorded of said user identification, based on a location of said first device after said user identification is identified on said first device,.....	128
iv. Element [16C]: a first map provided from the perspective of said first location and is operable of being displayed on said first device,.....	129
v. Element [16D]: said first location is operable to be provided to a third device not associated with said user identification, ...	129
vi. Element [16E]: said user identification is operable to be identified on a second device by receiving said login and password from a second device,.....	129
vii. Element [16F]: a second location is operable to be recorded of said user identification based on a second location of said second device after said user identification is identified on said second device,.....	131
viii. Element [16G]: a second map provided from the perspective of said second location and is operable of being displayed on said second device,.....	131
ix. Element [16H]: said first location and said second location are different, and	131

x.	Element [16I]: said second location is operable to be provided a said third device not associated with said user identification.	132
b.	Claim 17: The system of claim 16, wherein said first device includes a first positioning system, said second device includes a second positioning system, said third device includes a third positioning system, said first location is determined, at least in part, based on said first positioning system, and said second location is determined, at least in part, based on said second positioning system.....	132
c.	Claim 18: The system of claim 16, wherein said first location is provided to said third device based on an access permission of said first location to said third device provided by said identified user on said first device.	133
d.	Claim 19: The system of claim 16, wherein said first location is recorded on a server remote to said first device, second device, and third device.	133
D.	<u>Ground 4</u> : Claims 1 and 3-4 are Unpatentable Over Sheha in view of Wollrab.....	133
1.	Discussion of Sheha (EX1005)	133
2.	Discussion of Sheha-Wollrab Combination.....	137
3.	Mapping of Sheha-Wollrab Combination to Claims 1 and 3-4	138
a.	Claim 1	138
i.	Preamble [1PRE]: A system comprising:.....	138
ii.	Element [1A]: a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred and after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device, ...	138
iii.	Element [1B]: wherein said display screen includes a map provided with respect to the location of said first wireless telephonic device, ...	140

iv.	Element [1C]: said display screen includes indicia on said map representative of a first location, ...	145
v.	Element [1D]: said display screen includes indicia representative of a second location obtained from said third wireless telephonic device, ...	146
vi.	Element [1E]: said display screen includes a distance from said first wireless telephonic device to said first location, and.....	148
vii.	Element [1F]: said display includes an address associated with said first location.	149
b.	Claim 3: The system of claim 1, wherein said permission is stored on a server remote to said second wireless telephonic device, said third wireless telephonic device, and said first wireless telephonic device.....	150
c.	Claim 4: The system of claim 1, wherein said third wireless device associates a second permission with said second location to permit said first wireless telephonic device to access said second location.	155
E.	<u>Ground 5</u> : Claims 6-9 and 11-14 are Unpatentable over Sheha in view of Wollrab and Obradovich	156
1.	Discussion of Sheha-Wollrab-Obradovich Combination	156
2.	Mapping of Sheha-Wollrab-Obradovich Combination to Claims 6-9 and 11-4.....	156
a.	Claim 6	156
i.	Preamble [6PRE]: A system comprising:	156
ii.	Element [6A]: a wireless telephonic device operable to provide a display screen after a request from said wireless telephonic device for access to a first location of a first wireless device, ...	157
iii.	Element [6B]: wherein said display screen includes a map provided from a perspective of said wireless telephonic device, ...	157
iv.	Element [6C]: said display screen includes indicia on said map representative of said first location, ...	158

v.	Element [6D]: said display screen includes indicia on said map representative of a second location obtained from a second wireless device, and	158
vi.	Element [6E]: said display screen includes a distance from said wireless telephonic device to said first location,.....	159
vii.	Element [6F]: said display screen includes a compass,.....	160
viii.	Element [6G]: said display screen includes a directional arrow representative of the direction of said first location with respect to the location of said wireless telephonic device, and	163
ix.	Element [6H]: a determination is operable to be made to provide on said wireless telephonic device for a travel time from said first location to said wireless telephonic device.	168
b.	Claim 11	174
i.	Preamble [11PRE]: A system comprising:.....	174
ii.	Element [11A]: a wireless device operable to provide a display screen after a request from said wireless telephonic device for access to a first location of a first wireless device, ...	175
iii.	Element [11B]: wherein said display screen includes a map from the perspective of said wireless device, ...	175
iv.	Element [11C]: said display screen includes indicia on said map representative of said first location, ...	176
v.	Element [11D]: said display screen includes indicia on said map representative of a second user according to a second location obtained from a second wireless device, and	176
vi.	Element [11E]: said display screen includes a distance from said wireless telephonic device to said first location, ...	176
vii.	Element [11F]: said display screen includes a compass,.....	177

viii. Element [11G]: said display screen includes an address of said first location, and	177
ix. Element [11H]: said display screen includes a travel time based on at least the first location and the location of said wireless telephonic device.	177
c. Claim 7: The system of claim 6, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location.	178
d. Claim 8: The system of claim 6, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location and said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.	178
e. Claim 9: The system of claim 6, wherein said first wireless device associates a first permission with said first location to permit said wireless telephonic device to access said first location and said second wireless device associates a second permission with said second location to permit said wireless telephonic device to access said second location.	178
f. Claim 12: The system of claim 11, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location.	179
g. Claim 13: The system of claim 11, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location and said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.	179
h. Claim 14: The system of claim 11, wherein said first wireless device associates a first permission with said first location to permit said wireless telephonic device to access said first location and said second wireless device associates a second permission with said second location	

to permit said wireless telephonic device to access said second location.....	180
F. <u>Ground 6</u> : Claims 2, 5, 10, and 15 are Unpatentable over Sheha in view of Wollrab, Obradovich, and McDonnell.....	180
1. McDonnell (EX1042).....	180
2. Discussion of the Sheha-Wollrab-Obradovich-McDonnell Combination	181
3. Mapping of Sheha-Wollrab-Obradovich-McDonnell Combination to Claims 2, 5, 10, and 15.....	182
a. Claim 2: The system of claim 1, wherein said permission includes several location access rights, wherein each one of said several location access rights are associated with different location resolutions.	182
b. Claims 5, 10, and 15.....	184
G. <u>Ground 7</u> : Claims 16-19 are Unpatentable over Sheha in view of Song	186
1. Discussion of the Sheha-Song Combination.....	186
2. Mapping of the Sheha-Song Combination to Claims 16-19	187
a. Claim 16.....	187
i. Preamble [16PRE]: A system comprising:.....	187
ii. Element [16A]: a first device operable to identify a user identification on said first device by receiving a login and password from said first device, ...	187
iii. Element [16B]: a first location is operable to be recorded of said user identification, based on a location of said first device after said user identification is identified on said first device,.....	188
iv. Element [16C]: a first map provided from the perspective of said first location and is operable of being displayed on said first device,.....	189
v. Element [16D]: said first location is operable to be provided to a third device not associated with said user identification, ...	189

vi. Element [16E]: said user identification is operable to be identified on a second device by receiving said login and password from a second device, ...	189
vii. Element [16F]: a second location is operable to be recorded of said user identification based on a second location of said second device after said user identification is identified on said second device, ...	190
viii. Element [16G]: a second map provided from the perspective of said second location and is operable of being displayed on said second device, ...	190
ix. Element [16H]: said first location and said second location are different, ...	191
x. Element [16I]: and said second location is operable to be provided a said third device not associated with said user identification.	191
b. Claim 17: The system of claim 16, wherein said first device includes a first positioning system, said second device includes a second positioning system, said third device includes a third positioning system, said first location is determined, at least in part, based on said first positioning system, and said second location is determined, at least in part, based on said second positioning system.	191
c. Claim 18: The system of claim 16, wherein said first location is provided to said third device based on an access permission of said first location to said third device provided by said identified user on said first device.	192
d. Claim 19: The system of claim 16, wherein said first location is recorded on a server remote to said first device, second device, and third device.	192
IX. APPENDIX: CLAIM LISTING	194

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. 11,109,218 (“the ’218 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 ’218 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. 11,109,218 (“the ’218 patent”)
1002	Prosecution History of U.S. Patent No. 9,204,218
1005	U.S. Patent No. 7,333,820 (“Sheha”)
1006	U.S. Provisional Patent Application No. 60/305,975 (“Sheha-Prov.”)
1007	U.S. Patent Application Publication No. 2004/0024846 (“Randall”)

1008	International Patent Application Publication No. WO 02/17075 (“Randall-WIPO”)
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”)
1019	U.S. Patent No. 7,366,522 (“Thomas”)
1022	International Patent Application Publication No. WO 01/91486 (“Darling”)
1024	U.S. Patent No. 6,714,793 (“Carey”)
1025	U.S. Patent No. 6,415,224 (“Wako”)
1029	U.S. Patent No. 6,456,854 (“Chern”)
1030	U.S. Patent No. 6,754,665 (“Futagami”)
1039	Plaintiff’s Disclosure of Asserted Claims and Infringement Contentions in <i>Mullen Industries LLC v. Samsung Electronics Co., Ltd. et al.</i> , Case No. 2:24-cv-00049 (E.D. Tex.) (May 15, 2024)
1041	U.S. Patent Application Publication No. 2003/0074209 (“Tobin”)
1042	U.S. Patent No. 6,813,499 (“McDonnell”)
1043	U.S. Patent No. 6,133,853 (“Obradovich”)
1051	U.S. Patent No. 6,674,849 (“Froeberg”)
1054	U.S. Patent No. 6,867,733 (“Sandhu”)
1056	U.S. Patent No. 6,049,718 (“Stewart”)
1057	U.S. Patent No. 6,609,005 (“Chern-005”)
1067	U.S. Patent No. 6,127,945 (“Mura-Smith”)
1068	U.S. Patent No. 6,633,813 (“Deworetzki”)
1069	U.S. Patent No. 7,143,443 (“Song”)
1070	U.S. Patent No. 6,107,944 (“Behr”)
1071	U.S. Patent No. 7,203,752 (“Rice”)
1072	U.S. Patent No. 6,366,856 (“Johnson”)

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 '218 patent involves technology in the field of location-based services—including specifically “systems and methods for determining a device’s location” and “[m]ore particularly,...systems and methods for remotely determining a device’s location.” EX1001, 1:17-20. I have been asked to provide my opinions as to the state of the art in this field by March 2002. I use this timeframe because the face of the '218 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 '218 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 '218 PATENT

[0055] The '218 patent is titled “Systems and Methods for Locating Cellular Phones and Security Measures for the Same.” Its Abstract says it provides “[m]ore particularly, systems and methods for providing the location of a requested

user's cellular phone from a requesting user's device (e.g., a second cellular phone) based on access rights defined by the requested user.”

A. Specification Embodiments

[0056] Generally, the '218 patent discusses techniques for determining a device's location, such as via the Global Positioning System (“GPS”). EX1001, 1:16-27. Cellphones in the '218 patent can share their locations with a remote system, from which other users can obtain them. EX1001, 4:52-5:26. A user can also restrict access to their location by identifying authorized users or groups. EX1001, 3:23-27.

[0057] FIG. 2's example method (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, 8:11-14.

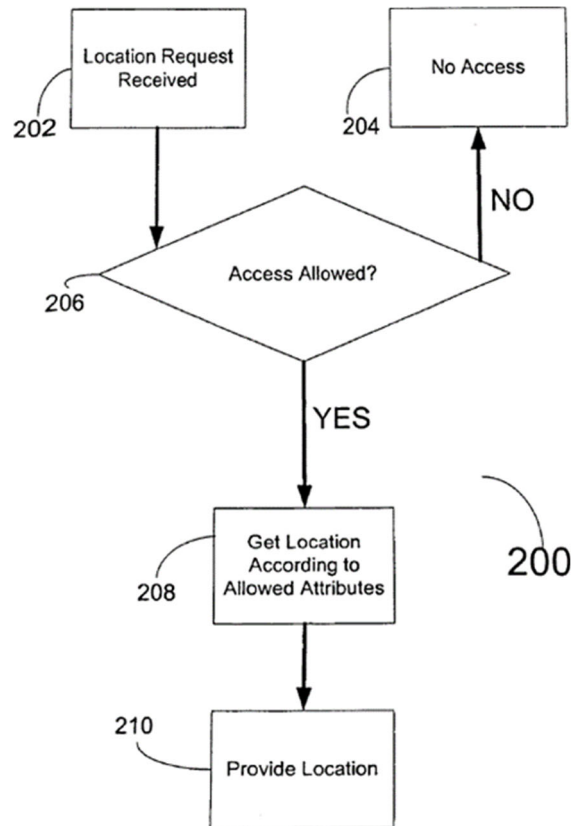


FIG. 2

EX1001, FIG. 2

[0058] Received location information may be displayed on a display screen, as shown in FIG. 6's example below. EX1001, 7:21-29. 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, 7:41-50.

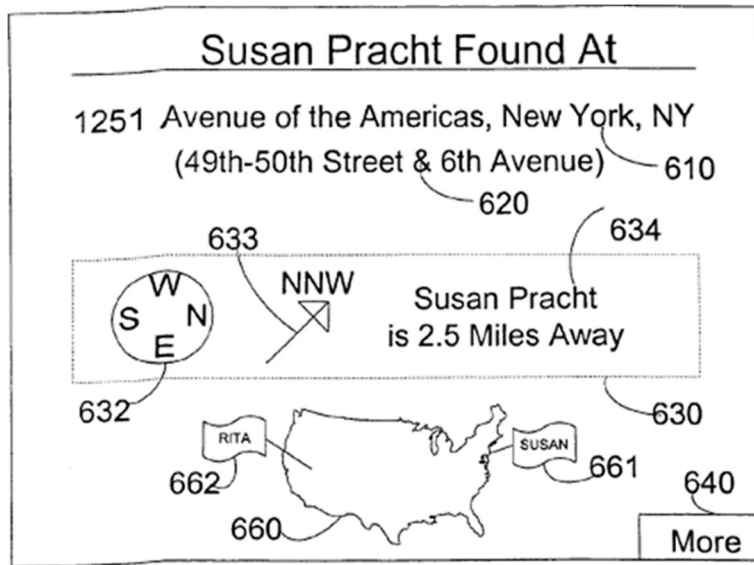


FIG. 6

EX1001, FIG. 6

B. Prosecution History of the '218 Patent

[0059] The '218 patent's prosecution spanned 14 years and twelve office actions. The claims were only allowed once amended to recite that the map is "provided with respect to the location of" or "from [a/the] perspective of" the wireless device or its location. EX1002, pp. 527-529. The Examiner did not provide reasons for allowance. EX1002, pp. 548, 617, 632.

C. The Challenged Claims

[0060] The '218 patent's four independent claims (1, 6, 11, and 16) each recite a device operable to provide a display screen including a map with respect to the device's location or from the device's perspective. In claims 1, 6, and 11, the map includes indicia representative of two other (devices') locations,

and other information including a distance to one of the locations. In claim 16, a “user identification” can be identified on both first and second devices by a login and password. The devices display maps and are at different locations. The locations can be provided to a “third device not associated with said user identification.”

VI. CLAIM INTERPRETATION

[0061] 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

[0062] 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

[0063] The '218 patent purports to have provided a variety of innovations, such as “locat[ing] the position of a different user's cellular phone (e.g., a requested user) based upon requestor-assigned access rights[,]” EX1001, 1:38-43, and more broadly, “provid[ing] systems and methods which better utilize the information about a device's location.” EX1001, 1:31-33.

[0064] 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.

[0065] 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.

[0066] 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

[0067] 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 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.

[0068] 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

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).

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.

https://clintonwhitehouse4.archives.gov/WH/New/html/20000501_2.html.⁴

[0069] 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

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

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

[0070] For example, a Google Patent search for “location services” and “sharing” prior to March 25, 2002 yields over 136,000 results.⁵ Over 129,000 of those results⁶ appear for between May 1, 2000 and March 25, 2002, indicating at least in part the widespread recognition of the benefits from the improved accuracy resulting from removal of Selective Availability, the utility/benefits of sharing location information, and more generally the growing awareness of the potential for location-based services around the turn of the century. Further, over 95,000 results remain when further filtered by adding “cost reduction” or “improved efficiencies.”⁷ Similarly, a search for “location services” and “sharing” and “new

⁵ <https://patents.google.com/?q=location+services&q=sharing&before=priority:20020325> (last checked 9/17/2024).

⁶ <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).

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).

revenue” yielded over 15,000 results.⁸ Replacing the search of “new revenue” with “improved user interface” yielded over 84,000 results,⁹ and “navigation” instead of “new revenue” yielded over 25,000 results.¹⁰ Thus, by the time of the patent priority date, the potential benefits of location services involving the sharing of information like location were well known, including services involving navigation and better user interface capabilities. In addition, a POSA would also recognize the multitude of technology capabilities and varied user interface challenges associated with location-related technology and data, and seek out ways to improve a user’s ability to utilize and interact with such (often large amounts of) location data via meaningful and efficient mechanisms.

[0071] 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

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

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

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

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)

[0072] 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.

[0073] 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.

[0074] 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).

[0075] 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.” 4:6-10.¹¹ <i>See also</i> 4:11-18; 4:21-25 (“the position information to a caller is displayed”); 11:3-27 (caller uses a “telephone network,” which is “<i>a telecommunication network</i>”); 12:30-32 (supported telecommunication networks include “CDMA, TDMA, or GSM”).
receiving caller information, said caller information being associated with a telecommunication event that is initiated by the caller, said caller information including at least one of a caller identification information and	“The act of dialing the telephone number to another remote landline telephone [<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

¹¹ Citations are to the native page numbering of the provisional application’s specification within EX1006, rather than to the PDF page numbers of EX1006. For example, 4:6-10 occurs at lines 6-10 of native page 4 of the specification, which is on page 8 of the PDF of EX1006.

the phone number information of the caller;	and/or remote telephone devices.” 6:13-17. “In one embodiment the display unit on the destination telephone 8 [<i>i.e.</i>, the device receiving the caller information] can display the caller’s name [<i>‘caller identification information’</i>], telephone number, address, and can provide a map illustration of varying resolutions configured by the user through the telephone network 2.” 11:28-31. “The ODAS 3 is preferably notified that a telephone call is being established by the telephone network 2 [<i>‘a telecommunication event that is initiated by the caller’</i>]. Included in this notification is the telephone number and user identification information for both the originating and destination telephone numbers.” 13:9-13. “After the system has verified that the destination telephone number user is signed-on, the ODAS 3 sends a notification to the device 6 that the user is signed-on.” 13:29-31. “In this embodiment, the notification appears on the user’s display device 6 just prior or during the ringing or notification that the telephone has an incoming telephone call. In one embodiment, the display 24 of the user’s device shows that he or she is signed-on and can have numerous miscellaneous window(s) 25 open at
--	---

	the time the Map Caller-ID notification is activated. The Map Caller-ID notification window 26 typically contains only the originating user identification and telephone number, but may also contain map information of varying resolution.” 14:6-13.
accessing caller privacy information, said caller privacy information identifying a caller user group consisting of a plurality of group members pre-defined by said caller, each group member of the caller user group being a user of the telecommunication network;	“In this case, users who are initiating or receiving the telephone calls [<i>‘users of the telecommunication network’</i>] have their local telephone numbers stored into a database that resides on a secure network.” 6:21-23. “In another embodiment, the destination remote mobile device receiving the telephone call obtains the position information from the calling local mobile device, based on permission settings of the calling local mobile device [<i>‘caller privacy information’</i>], for the performance of various operations, such as mapping and calculating driving directions.” 7:19-23. “In another embodiment, each device has privacy settings that allow the device to prevent or limit other calling devices from obtaining position information [<i>‘caller privacy information’</i>].” 8:14-16. “In another embodiment, users can define a group of specific users that have access to this information [<i>‘identifying a caller user group consisting of a plurality of group members pre-defined by said caller’</i>]. This is also accomplished by utilizing

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

	map, to either one or both of the local and/or remote telephone devices.” 6:13-17. “In order to determine the position information of a remote landline or wireless device in order to obtain driving directions to that device or other related information about that device, in one embodiment, a user can initiate a position request by entering a unique identification token, such as an e-mail address.” 8:1-5. “Therefore, in this embodiment, when a telephone 8 dials a destination standard telephone 5 [<i>said telecommunication event initiated by the caller</i>], the destination telephone number is sent over the dedicated landline connection 9b to the telephone network 2 [<i>unique identification information</i>]. The ODAS 3 is sent both the originating and destination telephone numbers via the telephone network connection 10. In another embodiment, accompanying information, such as user identification information associated with each telephone number is also sent to the ODAS 3.” 13:1-7. “The ODAS 3 receives both the originating and destination telephone numbers, users’ account information, and position information for both mobile devices 18b and 18c [<i>receiving receiver information, said receiver information</i>]
--	--

	<i>being associated with said telecommunication event initiated by the caller, said receiver information including a unique identification information of the receiver’]</i>” 17:29-31.
verifying whether the receiver is a member of the caller user group;	“A mobile or landline device can also request position information of another mobile or landline device by only specifying a telephone number, without having to initiate a telephone call. For a landline-to-landline position request, the specified telephone number is correlated to its position information using telephone information from a known database or sets of databases. In one embodiment, the online database that contains this information only includes users that do not have unlisted telephone numbers. In another embodiment, users can define a group of specific users that have access to this information. This is also accomplished by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information. When a mobile device's position information is requested, the system, based on privacy settings, responds with the appropriate position information to the requesting user's device. In another embodiment, using the authorization and authentication protocols a user can request the position of a mobile device, similarly to requesting the position of a landline device.” 18:23-19:6.

retrieving a caller position information, said caller position information indicating a location of the caller; and	“It is another object of the present invention to provide a method for...the purpose of determining position information associated with the telephone number [<i>‘retrieving a call position information ... indicating a location of the caller’</i>] by searching a networked database.” 4:6-10. “It is yet another object of the invention to provide an alternative form of Caller-ID (Map Caller-ID) to a local computing telephone device for display of the caller’s position information.... This position information transfer is done utilizing authentication and authorization procedures or telephone-to-position information correlation procedures for caller identification.” 4:19-28. <i>See also</i> 5:5-11 (“acquire local or remote position information through the methods described above”); 6:13-17 (“The act of dialing the telephone number to another remote landline telephone, such as a residential telephone, triggers the transfer of position information, such as in the form of a map, to either one or both of the local and/or remote telephone devices.”); 7:19-23 (“In another embodiment, the destination remote mobile device receiving the telephone call obtains the position information from the calling local mobile device [<i>‘retrieving a call position information ... indicating a location of the caller’</i>], based on permission settings of the calling local mobile device, for the
--	--

	performance of various operations, such as mapping and calculating driving directions.”); 11:21-24 (“Map Caller-ID includes additional position information fields of various formats, and can include map information at varying resolutions of both the originating and destination telephone number’s locations.”); 14:21-25 (“In one embodiment, this new information window 30 is a detailed Map Caller-ID information window of varying resolution displaying the originating position information, such as a map location 33 of the caller, and the user’s location position information, such as a map location 34 of the destination telephone number.”); 18:15-22 (“The mobile devices 18b and 18c continually send their updated position information to the ODAS 3, when the position information has changed significantly as compared to the positioning error probability and as determined by the positioning technology or network configuration. The ODAS 3 periodically updates each mobile device with the other’s position information, thus providing real-time driving directions and route information. In another embodiment, the position information transfer can be sent in a peer-to-peer configuration, thus circumventing the ODAS 3.”)
transmitting to the receiver the caller position information if the receiver is verified to be a member of the caller user group,	“The mobile devices 18b and 18c continually send their updated position information to the ODAS 3, when the position information has changed significantly as compared to the positioning error probability and as

	determined by the positioning technology or network configuration. The ODAS 3 periodically updates each mobile device with the other's position information [<i>“transmitting to the receiver the caller position information”</i>], thus providing real-time driving directions and route information. In another embodiment, the position information transfer can be sent in a peer-to-peer configuration, thus circumventing the ODAS 3.” 18:15-22. “A mobile or landline device can also request position information of another mobile or landline device by only specifying a telephone number, without having to initiate a telephone call. For a landline-to-landline position request, the specified telephone number is correlated to its position information using telephone information from a known database or sets of databases. In one embodiment, the online database that contains this information only includes users that do not have unlisted telephone numbers. In another embodiment, users can define a group of specific users that have access to this information [<i>‘receiver is verified to be a member of the caller user group’</i>]. This is also accomplished by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information [<i>‘receiver is verified to be a member of the caller user group’</i>]. When a mobile device's position information is
--	---

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

	the system, based on privacy settings, responds with the appropriate position information to the requesting user's device [<i>‘transmitting to the receiver the caller position information if the receiver is verified to be a member of the caller user group’</i>]. In another embodiment, using the authorization and authentication protocols a user can request the position of a mobile device, similarly to requesting the position of a landline device.” 18:30-19:6.
--	--

[0076] 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 ’218 patent based on the filing date of Sheha’s provisional application.

[0077] As discussed in Sections VIII.D-F below, in my opinion a POSA would have understood that Sheha, in combination with other references, renders obvious all claims of the ’218 patent. *See also infra* §VIII.D.1 (additional discussion of Sheha).

C. Randall (EX1007)

[0078] 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].

[0079] 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

[0080] As discussed in Sections VIII.A-C below, in my opinion a POSA would have understood that Randall, alone or in combination with other references, renders obvious all claims of the '218 patent. *See also infra* §VIII.A.1 (additional discussion of Randall).

D. Wollrab (EX1014)

[0081] 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 (EX1014) 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 '218 patent based on Wollrab’s filing date. *See also infra* §VIII.A.2 (additional discussion of Wollrab).

E. Mura-Smith (EX1067)

[0082] Mura-Smith is titled “Mobile personal navigator” and relates to “[a] personal navigation device and method for providing location information.” Mura-Smith, Abstract. According to the face of the document, Mura-Smith (EX1067) is a United States patent issued on October 3, 2000 as Patent No. 6,127,945 from an application filed on October 18, 1995 as Application No. 08/544,553. I have been informed by counsel that Mura-Smith qualifies as prior

art to the '218 patent based on Mura-Smith's filing and/or issue date. *See also infra* §VIII.B.1 (additional discussion of Mura-Smith).

F. Obradovich (EX1043)

[0083] Obradovich is titled "Personal communication and positioning system" and relates to "communicating and retrieving position and position related data." Obradovich, 1:16-17. According to the face of the document, Obradovich (EX1043) is a United States patent issued on October 17, 2000 as Patent No. 6,133,853 from an application filed on July 30, 1998 as Application No. 09/126,936. I have been informed by counsel that Obradovich qualifies as prior art to the '218 patent based on Obradovich's issuance date. *See also infra* §VIII.A.3 and §VIII.F.1 (additional discussions of Obradovich).

G. Song (EX1069)

[0084] Song is titled "Secure sharing of personal devices among different users" and relates to "[a] registry architecture for securely sharing personal devices among different users." Song, Abstract. According to the face of the document, Song (EX1069) is a United States patent issued on November 28, 2006 as Patent No. 7,143,443 from an application filed on October 1, 2001 as Application No. 09/968,161. I have been informed by counsel that Song qualifies as prior art to the '218 patent based on Song's filing date. *See also infra* §VIII.C.1 (additional discussion of Song).

H. McDonnell (EX1042)

[0085] McDonnell is titled “Providing location data about a mobile entity” and relates to “the provision and use of location data concerning mobile entities.” McDonnell, 1:6-7. According to the face of the document, McDonnell (EX1042) is a United States patent issued on November 2, 2004 as Patent No. 6,813,499 from an application filed on March 23, 2001 as Application No. 09/816,681. I have been informed by counsel that McDonnell qualifies as prior art to the '218 patent based on McDonnell's filing date. *See also infra* §VIII.F.2 (additional discussion of McDonnell).

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

[0086] I have been asked to provide my opinion concerning whether claims 1-19 of the '218 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 1-19 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), Wollrab (EX1014), Obradovich (EX1043)	1-5, 11-15	Obviousness
2	Randall, Wollrab, Obradovich, Mura-Smith (EX1067)	6-10	Obviousness
3	Randall, Song (EX1069)	16-19	Obviousness
4	Sheha (EX1005), Wollrab	1, 3-4	Obviousness

5	Sheha, Wollrab, Obradovich	6-9, 11-14	Obviousness
6	Sheha, Wollrab, Obradovich, McDonnell (EX1042)	2, 5, 10, 15	Obviousness
7	Sheha, Song	16-19	Obviousness

A. Ground 1: Claim 1-5 and 11-15 are Unpatentable Over Randall in view of Wollrab and Obradovich

[0087] As explained in this section below, in my opinion claims 1-5 and 11-15 of the '218 patent are unpatentable over the combination of Randall (EX1007-EX1008), Wollrab (EX1014), and Obradovich (EX1043).

1. Discussion of Randall (EX1007-EX1008)

[0088] Randall is an international (PCT) application filed August 22, 2001, and published in the international stage on February 28, 2002, as EX1008 (in English, designating the United States) and then in the U.S. national stage as EX1007. I understand that Randall is therefore prior art to the '218 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.

[0089] Randall relates to “enabling a wireless information device to access data services,” using “an extensible framework which handles data passing to and from several applications resident on the device, the framework being

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

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

[0090] 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].

[0091] 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.

[0092] 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.

[0093] 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].

[0094] 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].

[0095] 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].

2. Discussion of Wollrab (EX1014)

[0096] 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 (below; 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.

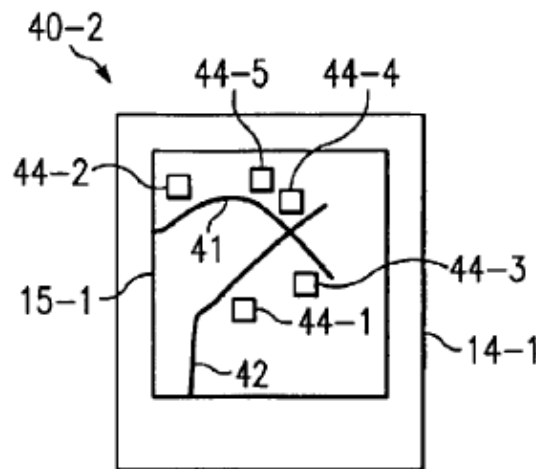


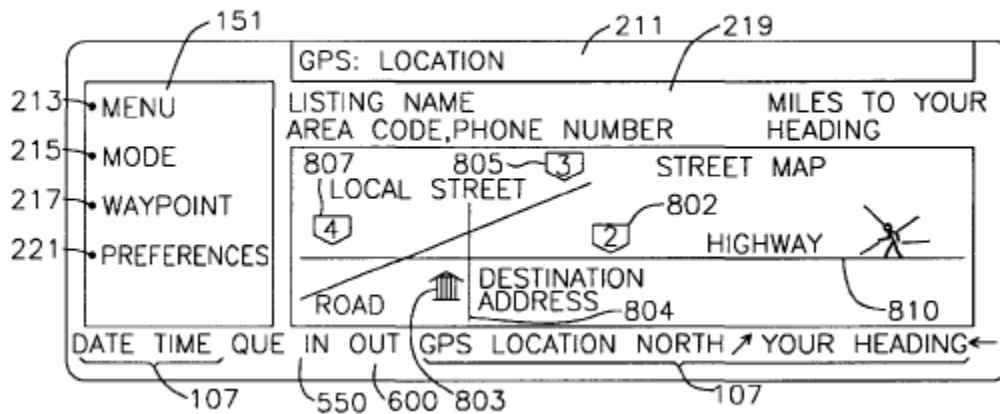
FIG. 4B

Wollrab, FIG. 4B

3. Discussion of Obradovich (EX1043)

[0097] Obradovich discloses a “system for communicating and retrieving position and position related data.” Obradovich, 1:16-17. Among other aspects (*e.g.*, as discussed more below §VIII.F.1), Obradovich teaches “display” techniques for “maps and location tagged data” on a “personal communication device (PCD).” Obradovich, Abstract. “The PCD is a cellular-phone-sized electronic device, combining the capabilities of a GPS receiver, transceiver, digital beeper, cell phone and projection system into one compact unit.” Obradovich, 2:60-63. Obradovich’s system “allows users to request detailed information relating to their present location” and location information for destinations and other individuals. Obradovich, 3:45-47, 4:1-5. “The PCD can...provide distances and directions to locations of interest...to the user via the screen of the PCD,” and can also “display...travel times for the...route.” Obradovich, 3:17-21, 22:47-54. PCD users “can meet or find each other” by “sending and receiving GPS encoded data.” Obradovich, 4:1-3. The PCD displays a “GPS map” that “indicates the PCD position” as well as navigation information including “destination address,” “heading and north,” “miles to your heading,” etc. Obradovich, 10:30-62, FIG. 8 (below). “[B]oth the user’s and [a] third party’s location can be shown on the same map.” Obradovich, 11:48-12:14.

FIG. 8



Obradovich, FIG. 8

Obradovich also teaches techniques to control information sent to remote parties, by allowing the user to assign a security level index to requesting individuals and to provide specific restrictions on what information about the user is shared with each security level, including information about the user's location. Obradovich, 26:20-27:10.

4. Discussion of Randall-Wollrab-Obradovich Combination

[0098] Randall teaches that its wireless device's "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]. In my opinion, POSAs would have recognized Wollrab's techniques as beneficial for implementing Randall's teaching of showing the positions of the tracking and tracked users on a map, in an intuitive manner that would be easily comprehensible to the tracking user, and in a way that

allows the tracking user to “simultaneously” view where various friends and/or family members are located, as Wollrab describes. Wollrab, 4:40-58, 5:50-61. POSAs would have been motivated to incorporate Wollrab’s techniques to further Randall’s objectives, e.g., of allowing “[t]he user’s friends or parents etc...to track the users location” and allowing a “group of friends...to locate each other in town” by making their locations “visible” to each other “so using your phones everyone in your group can tell precisely where the others are,” thus “help[ing] you meet friends and family.” Randall, [0021], [0143]-[0144], p. 29 (“Rendezvous”). In my opinion, POSAs would have reasonably expected success in incorporating Wollrab’s techniques in Randall’s system because Wollrab’s functionality operates in the same context as Randall’s, of wireless devices tracking and mapping each other’s locations.

[0099] Randall additionally teaches another objective of providing “Route finder” functionality “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.” Randall, p. 29. In my opinion, POSAs would have recognized Obradovich’s map display techniques to be beneficial in achieving this objective, and would have been motivated to incorporate any of Obradovich’s displayed navigational information to aid the device user in navigating to a destination such as another

user's location. In my opinion, POSAs would have reasonably expected success in incorporating Obradovich's displayed navigational information into Randall's system because Obradovich's graphical display is provided on a portable wireless GPS-enabled device similar to Randall's devices, which include a "GPS wireless information device." Obradovich, 2:60-63, FIG. 8.

5. Mapping of Randall-Wollrab-Obradovich Combination to Claim 1-5 and 11-15

a. Claim 1

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

[0100] Randall teaches a "***system***" that allows "wireless applications to access and share information." Randall, [0028], [0052]-[0053], [0071]. As I discussed above in §VIII.A.1, the system provides access control for a wireless device user to track the location of another wireless device user.

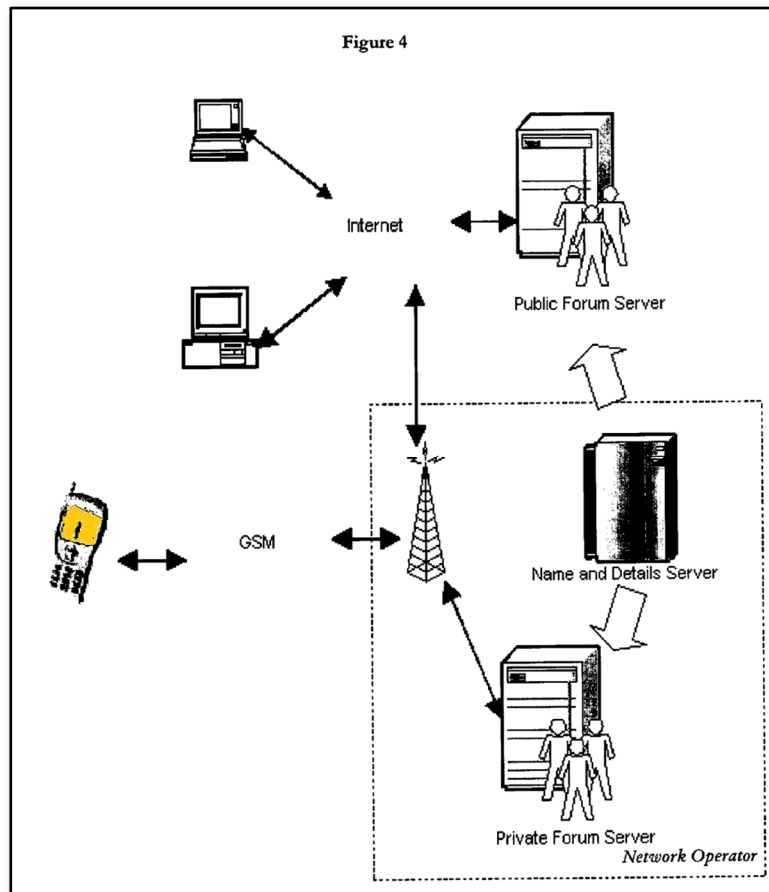
ii. Element [1A]: a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred and after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device,

[0101] Randall's system includes "***wireless* information *device***[s]," which can be "radio ***telephones***, smart ***phones***," etc. Randall, [0002]-[0004]. 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”). Bob’s device is an exemplary *first wireless telephonic device* and Alice’s device is an exemplary *second wireless telephonic device*. Alternatively, Alice’s device is an exemplary *first wireless telephonic device* and Bob’s device is an exemplary *second wireless telephonic device*. That is because POSAs would have understood that Randall presents Alice and Bob as arbitrary examples illustrating functionality that is equally available to any wireless information device in Randall’s system. For example, Randall posits “[c]onsider Alice, who is publishing some information, and Bob who is accessing it.” Randall, [0053]. POSAs would have understood Randall to be posing a hypothetical example in which Alice and Bob are arbitrary users of the ADS system and the only distinction between them is the order in which these arbitrary users are performing operations using the ADS system. POSAs would have understood that, in this example, Bob is interested in accessing Alice’s data, but the example could easily be reversed in which Alice is interested in Bob’s data. Indeed, Randall teaches such a scenario by providing that “Bob also has stored on the server his own personal information” ([0067]), which POSAs would have understood as Bob storing his own personal information on the server for a potential use case of another user, e.g., Alice, accessing his information in the same way that Randall provides that Bob can access Alice’s information. That understanding is also

consistent with Randall’s claims (e.g., claim 1), which refer to a user operating a generic “wireless information device.”

[0102] Each of Randall’s wireless devices is *operable to provide a display screen*. Randall, FIG. 4 (highlighted below), [0008] (“applications resident on the wireless information device...*display* data”).



Randall, FIG. 4 (highlighted)

[0103] “[R]esident on the wireless information device” is a “location application (which gives a user’s location and includes digital maps).” Randall, [0009], [0021]. Once Alice has “subscribe[d] to a service which allowed others to

track...her location,” her “friends” (e.g., 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]. In this way, Bob’s *first wireless telephonic device* is operable to provide a display screen showing a map of Bob’s and Alice’s locations.

[0104] 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”). Alice’s *second wireless telephonic device*’s “GPS location” is stored in Alice’s “i-Data” (“Identity”) database on the i-server. 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)

[0105] Bob's *first wireless telephonic device* can request to access Alice's data on the i-server (which includes her GPS location) "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 ("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., “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]. This is how “authorised people...track the location of the GPS wireless information device by polling the server.” Randall, p. 24 (“People tracking”). Thus, Bob’s device provides the *display screen* that “track[s]” Alice’s “location” on a “map” (Randall, [0021]) *after a request to locate Alice’s second wireless telephonic device from Bob’s first wireless telephonic device has occurred*.

[0106] Before “the server passes to Bob’s device the information it requests,” the “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 shown in Table 1 (above), one of the fields in Alice’s database is her device’s “GPS location,” and she has designated that field as only being accessible to users whom she has designated as part of the “i-Group” called “partner.” Randall, [0503]-[0512].

“[S]ensitive information is only available to people in certain i-Groups; allowing Alice to control what data they see.” Randall, [0509], [0136] (“Location information” is “[v]isible to specific people (or groups)”). Randall teaches that “whenever Alice wishes to, she can change the level of access of a current contact—perhaps promoting Bob from ‘business’ to ‘friend.’” Randall, [0509]. This is a “method[] of making contacts into members of a particular i-Group,” which Alice can use via her *second telephonic wireless device* to give *permission* for Bob’s *first wireless telephonic device* to access her device’s location. Randall, [0509], [0495]. “Access rights can be associated with individual entities, and can also be associated with groups of entities.” Randall, [0070], [0052], [0146] (“users will be prepared to allow specific people access to more of their data than others”). Thus, in one example, if Alice assigns Bob to the “partner” i-Group having access to Alice’s GPS location and Alice has only one partner, then Alice is assigning location access rights only to Bob (and his device). Randall, Table 1 (excerpted and highlighted below).

TABLE 1

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

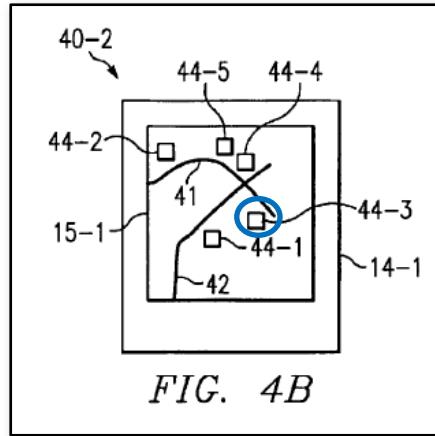
[0107] Because “the server recognis[es] Bob’s device and determin[es] the database access rights which Alice has given him” before it “passes to Bob’s device the information it requests” (Randall, [0067]), Bob’s device provides the *display screen* that “track[s]” Alice’s “location” on a “map” (Randall, [0021]) *after a confirmation that Bob’s first wireless telephonic device has been given a permission by Alice’s second telephonic wireless device to locate said second telephonic wireless device.*

[0108] Thus, Randall-Wollrab-Obradovich meets Element [1A].

iii. Element [1B]: wherein said display screen includes a map provided with respect to the location of said first wireless telephonic device,

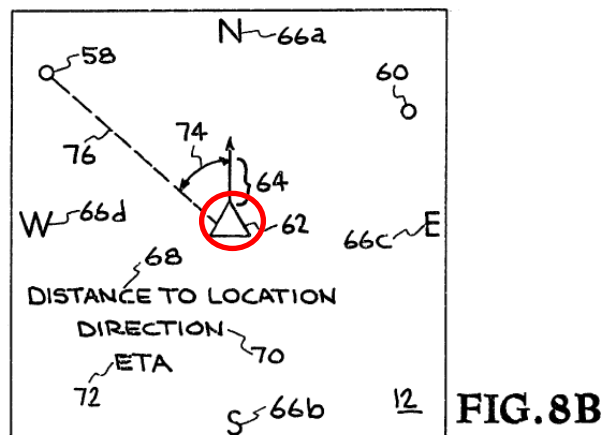
[0109] In Randall's system, Bob's *display screen* "could show *their* [Bob's] *position* on digital *maps* and also...the position of the user [Alice]." Randall, [0021], p.29 ("Your map and then some: At the touch of a button, your phone can display a *map* of the area *you* are standing in."). Bob's *display screen* thus *includes a map provided with respect to the location of said first wireless telephonic device* (i.e., Bob's location).

[0110] Additionally, Wollrab's teachings and other prior-art knowledge reinforce providing the *map with respect to the location of said first wireless telephonic device* on which the map is displayed. Wollrab, 4:40-58 ("screen of display device 15-1 of PDA device 14-1" includes "map image 40-2" showing "location[] 44-1" of "PDA device[] 14-1...relative to" other device locations), FIG. 4B (annotated below left); Obradovich, 10:22-49 ("Location page comprises the current map, the location on the map of the device" as "indicated by a walking person"), FIGs. 8, 11.



Wollrab, FIG. 4B (annotated)

[0111] Mura-Smith (EX1067) corroborates that providing the *map with respect to the location of said first wireless telephonic device* on which the map is displayed was prior-art knowledge. Mura-Smith, 7:40-56 (“the geographic position of portable unit 10 is represented as a cursor or ‘carrot’ 62...centrally located on display screen 12” showing its “‘relative position’...with respect to the selected locations”), FIG. 8B (annotated below right).



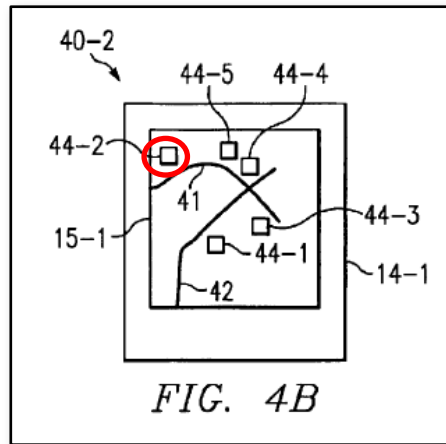
Mura-Smith, FIG. 8B (annotated)

[0112] Thus, Randall-Wollrab-Obradovich meets Element [1B].

iv. Element [1C]: said display screen includes indicia on said map representative of a first location,

[0113] As I discussed above (§VIII.A.5.a.iii, Element [1B]), in Randall's system, Bob's *display screen* "could show their [Bob's] position on digital *maps* and also...*the position of the user* [Alice]." Randall, [0021]. Thus, Bob's *display screen includes indicia on said map representative of Alice's first location*.

[0114] Additionally, Wollrab's teachings and other prior-art knowledge reinforce displaying *indicia on said map representative of a first location* (e.g., Alice's *second wireless telephone device's location*). Wollrab teaches that "[i]n map image 40-2 the *locations* 44-1 through 44-5 of...PDA devices 14-1 through 14-5 respectively are shown simultaneously relative to one another" using "*symbols*", where 44-1 is the *first wireless telephonic device's location*, and the symbol at any of 44-2 through 44-5 may be *indicia representative of a first location*. Wollrab, 4:40-58, FIG. 4B (annotated below).

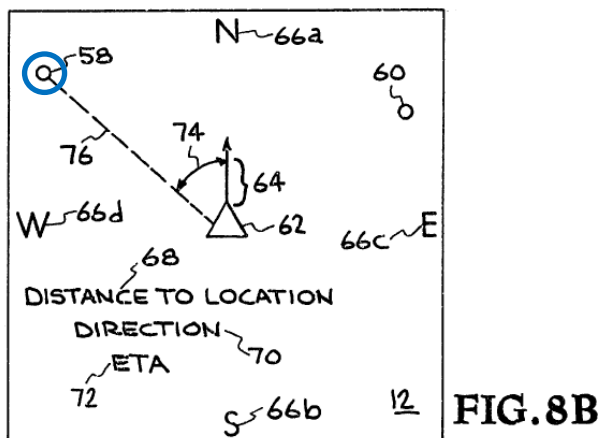


Wollrab, FIG. 4B (annotated)

[0115] Obradovich teaches that a third party's location can be displayed on the same map as the displaying device's user's location. Obradovich, 11:48-12:14 ("third party location can be displayed on maps" as "an icon 951" and "both the user's and third party's location can be shown on the same map"). Although Obradovich provides one example in which a "split screen display[]" shown in FIG. 11 "displays the user's location on a map on the left side of display 272 and...the third party's map and location on the right side of display 273" (Obradovich, 12:6-10), Obradovich provides another example in which the user's location and the third party's location are on the same map. Obradovich 12:10-14 ("If the third party's location is sufficiently close to the user's location, or if the user's displayed map covers a sufficiently large area, both the user's and third party's location can be shown on the same map without resort to a split screen display."). Obradovich does not provide a figure showing this same-map example, as POSAs would have understood the description without need for it to be

illustrated with a figure. However, POSAs would have understood that if Obradovich had included such a figure, it could look similar to the map in FIG. 8 of Obradovich but with an extra “walking person” icon showing the third party’s location such that the user and third party’s locations would be on the same map.

[0116] Mura-Smith (EX1067) corroborates that displaying *indicia on said map representative of a first location* was prior-art knowledge. Mura-Smith, Mura-Smith, 7:40-56 (“[S]elected **location** 58 is a desired destination.”; “By displaying a **representation** of selected locations 58 and 60 and cursor 62 on display screen 12, the ‘relative position’ of portable unit 10 with respect to the selected locations is readily determined.”), FIG. 8B (annotated below).



Mura-Smith, FIG. 8B (annotated)

[0117] Thus, Randall-Wollrab-Obradovich meets Element [1C].

v. Element [1D]: said display screen includes indicia representative of a second location obtained from said third wireless telephonic device,

[0118] Randall discusses examples where a user like Bob is interested in the location of not only one of his friends/contacts, but in more than one of his friends/contacts' locations. For instance, Randall teaches to provide "Rendezvous" functionality "to help you meet friends and family" by "hav[ing] your location visible to others—so using your phones *everyone in your group* can tell precisely where the *others* are." Randall, p. 29; *see also* [0143] (teaching to use "Location information" to allow a "*group* of friends...to locate each other in town"), p. 30 ("The Beacon Button...lets you send...information to friends who may be waiting for you somewhere. ...[Y]ou can tell the phone to send your location to them in an instant, letting them see how far away you are."). Randall thus teaches and suggests to POSAs to display to a user the locations of more than one other user in a group (e.g., of friends or family).

[0119] Wollrab similarly teaches techniques to aid "families or other groups to plan meetings" using their "wireless telephone[s]" to display "[l]ocation information" for "members of" the "family, work, or other group" on a "graphic map." Wollrab, 1:11-17, 5:50-61. In my opinion, POSAs would have recognized Wollrab's techniques as beneficial for implementing Randall's above-discussed functionality, and would have reasonably expected success as I discussed above

(§VIII.A.4 discussing Randall-Wollrab-Obradovich combination). Wollrab teaches to “display a map image” on each group member’s device “depicting the relative locations of all members/PDA devices within” the group as “locations 44-1 through 44-5...shown simultaneously relative to one another” as “symbols.” Wollrab, 4:43-58, FIG. 4B (annotated below—location 44-1 of exemplary *first wireless telephonic device* annotated in blue, location 44-2 of exemplary *second wireless telephonic device* annotated in red, location 44-3 of exemplary *third wireless telephonic device* annotated in green).

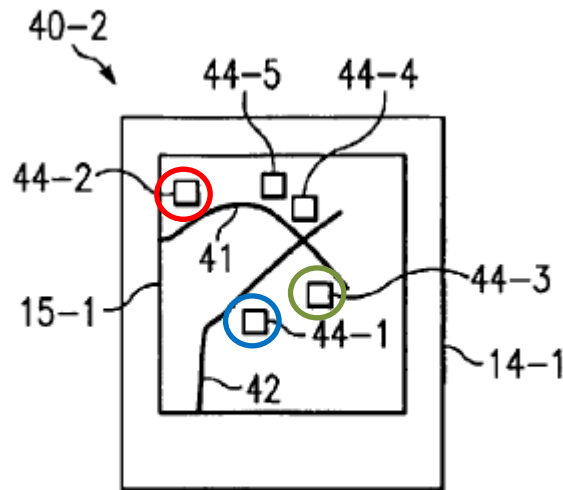


FIG. 4B

Wollrab, FIG. 4B (annotated)

[0120] Thus, in the Randall-Wollrab-Obradovich combination, Bob’s display screen can simultaneously include both *indicia on said map representative of Alice’s first location* (as I discussed above (§VIII.A.5.a.iv, Element [1C])) and

*indicia representative of a second location obtained from a third wireless telephonic device*¹² of another of Bob’s friends/contacts. Thus, Randall-Wollrab-Obradovich meets Element [1D].

vi. Element [1E]: said display screen includes a distance from said first wireless telephonic device to said first location, and

[0121] Randall teaches to provide “Route finder” functionality “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. Randall also teaches to provide “Rendezvous” functionality “on your mobile phone to help you meet friends and family in crowded or unfamiliar places,” where “using your phones everyone in your group can tell precisely where the others are.” Randall, p. 29. POSAs would have understood and found it obvious from these disclosures that another user’s position can be “where you want to go” in Randall’s “Route finder” functionality.

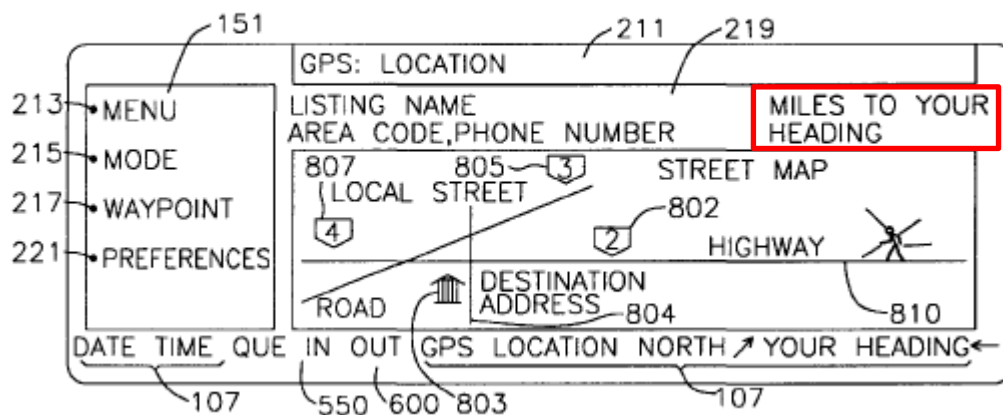
[0122] Obradovich teaches map display techniques by which users “can meet or find each other” that incorporate “typical GPS system functions.”

¹² I understand that in a previous IPR involving the ’218 patent the Board interpreted “*said third wireless telephonic device*” in Element [1D] as *a third wireless telephonic device*.

Obradovich, 4:1-5, 11:6-7; *see supra* §VIII.A.3 POSAs would have been motivated to use any of Obradovich’s display techniques in implementing Randall’s above-discussed functionality for accomplishing the same purposes, and would have reasonably expected success as I discussed above (§VIII.A.4).

[0123] Obradovich teaches to display *a distance* from the displaying device to the user’s destination (e.g., “miles to your heading”) in the map *display screen*, as shown in Obradovich’s Figure 8 (annotated below). POSAs would have found it obvious that “miles to your heading” in Figure 8 is a *distance* (“miles”) to the destination to which the user is “heading.”

FIG. 8



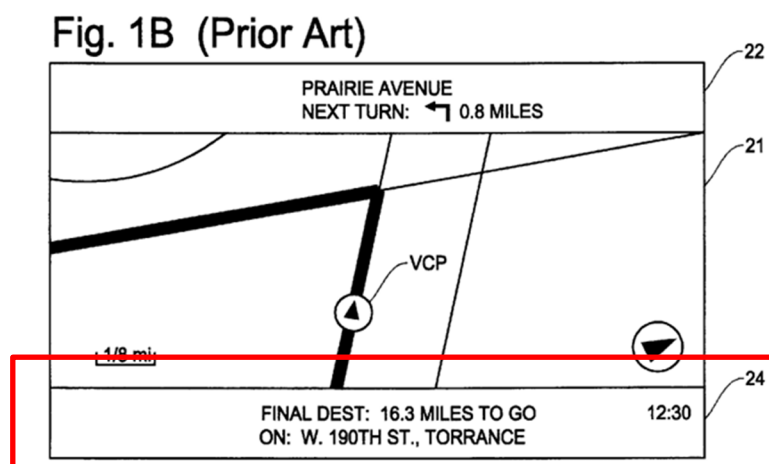
Obradovich, FIG. 8 (annotated)

[0124] Thus, in the Randall-Wollrab-Obradovich combination, Bob’s *display screen includes a distance from Bob’s first wireless telephonic device to Alice’s first location* (which may be Bob’s destination heading).

[0125] Additionally, Randall’s exemplary instruction provided on the *display screen* of “[c]arry on 100 metres” (Randall, p. 29, “Route finder”) is also a *distance from Bob’s first wireless telephonic device to Alice’s first location*.

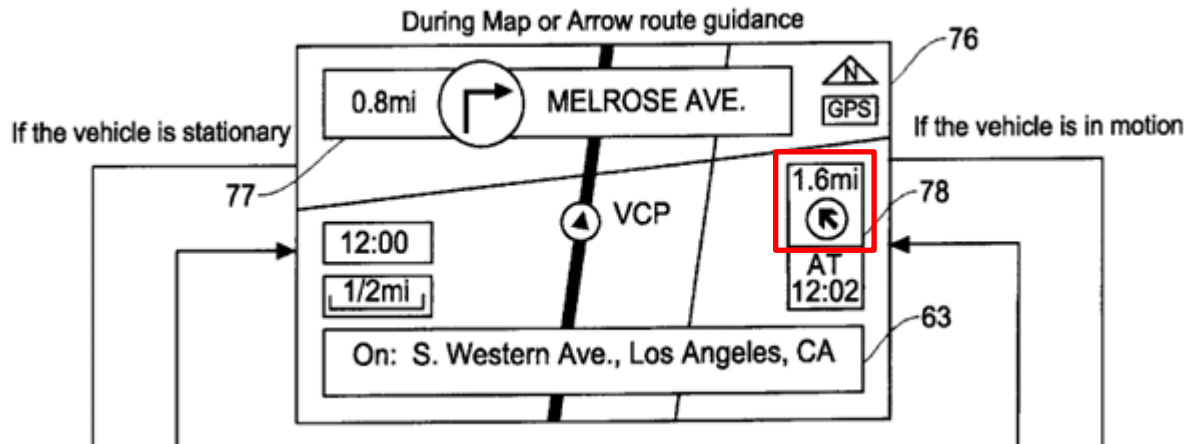
[0126] It was also well-known and conventional background knowledge to POSAs for “system[s] similar to GPS tracking in cars” (Randall, p. 29, “Route finder”) to *include* in the map *display screen* “information regarding the remaining *distance* to the final destination.” Wako, 2:13-34. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed below.

[0127] Wako (EX1025), in its background section, discloses as prior art “an information box 24 at the bottom of the *display screen* includes information regarding the remaining distance to the final destination,” as shown in Wako’s Figure 1B (annotated below). Wako, 2:13-34, FIG. 1B (annotated below).



Wako, FIG. 1B (annotated)

[0128] Wako similarly describes a “route guidance screen 76 further includ[ing] an information box 78 which shows a distance to the final destination and an anticipated time to reach the final destination,” as shown in Wako’s Figure 7 (excerpted below). Wako, 9:8-22, FIG. 7 (excerpted and annotated below).



Wako, FIG. 7 (excerpted and annotated)

[0129] Tobin (EX1041) describes a “graphical user interface for use with user device 105.” Tobin, [0028], FIG. 1C (annotated below). Tobin describes “the distance and time information particular to each service vendor is shown in a small data box adjacent to the service vendor logo. For example, data box 123 displays the real-time time and distance information for service vendor 137, which is a Texaco™ station. The time information displays the estimated remaining travel time, calculated by dividing the approximate distance separating the Texaco™ station from user device 105 by the speed of user device 105. The distance information displays the approximate distance in miles or kilometers separating user device 105 from the service vendor 137. Similar data boxes are

provided for other service vendors 127 and 129.” Tobin, [0028], FIG. 1C (annotated below).

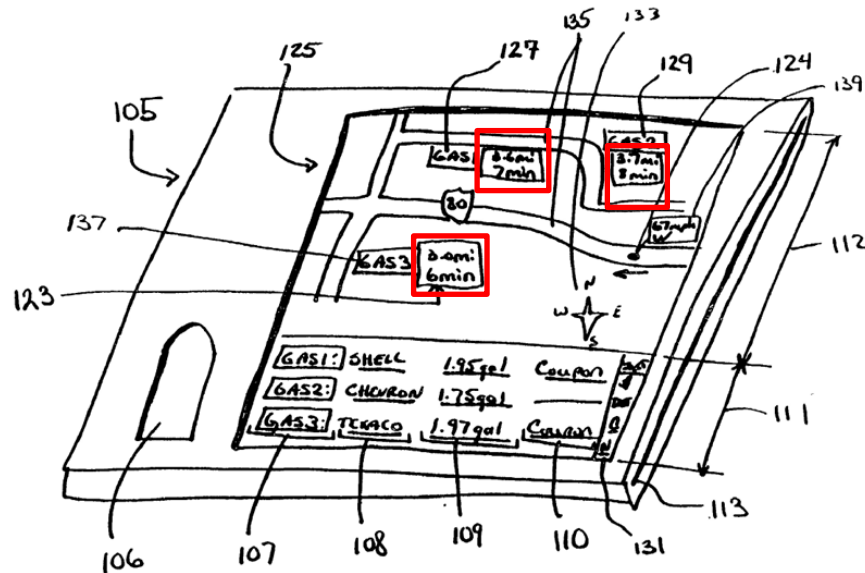


FIG. 1C

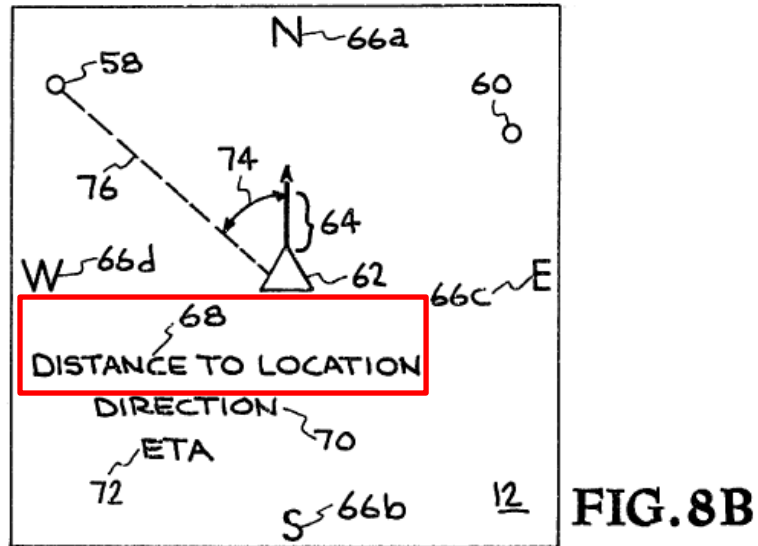
Tobin, FIG. 1C (annotated)

[0130] POSAs would have been motivated and reasonably expected success to implement Bob’s *display screen* to display Alice’s *first location*, another selected *second location*, and navigational information including *a distance* to Alice’s location as it was known to display such items together on a portable unit to “clearly show[] a user ‘where the user is with respect to where the user wants to go.’” Mura-Smith, 9:12-14. My testimony in this regard is corroborated by Mura-Smith (EX1067) as discussed below.

[0131] Mura-Smith (EX1067) evidences map-display techniques that were known to be beneficial to “clearly show[] a user ‘where the user is with

respect to where the user wants to go” (Mura-Smith, 9:12-14), and supports my opinion that POSAs had reason to include similar functionality in Randall’s system with a reasonable expectation of success. Mura-Smith evidences that it was known to *include a display “screen 12”* that “displays navigational information in text form,” which also shows “the geographic position of [the] portable unit” and two “[s]elected locations 58 and 60,” where “selected location 58 is a desired destination.” Mura-Smith, 8:45-47, 7:40-56. The “navigational information displayed in text format includes, for example, ‘*Distance to Destination*’ 68.” Mura-Smith, 8:45-52, FIG. 8B (annotated below).¹³ Thus, Mura-Smith corroborates my opinion that POSAs would have had motivation and reasonable expectation of success to display two other locations and a distance to one of them on the same map.

¹³ Mura-Smith notes there are benefits when a “display does not include extraneous information such as unnecessary streets and the like.” Mura-Smith, 3:58-59. This refers to avoiding “display of complex detailed map information” that would be “complicated or time-consuming” for “transmission,” because it is “graphically...detailed map” data—e.g., “a graphically displayed conventional map” with many streets in the graphic. Mura-Smith, 2:25-28, 1:33-40. POSAs would have understood that navigational information is not such extraneous graphical map information, and that other types of “navigational information in text form” (e.g., addresses, etc.) can also be added to the display screen, for example because Mura-Smith explicitly approves adding to the example of FIG. 8B by teaching “to display[] other navigation information...and the like.” Mura-Smith, 8:45-61. Further, Mura-Smith notes that its portable unit “is also well suited to loading detailed map information...if desired” (Mura-Smith, 10:21-23), teaching that displaying extra map detail was in any case a conventional, well-known design option.



Mura-Smith, FIG. 8B

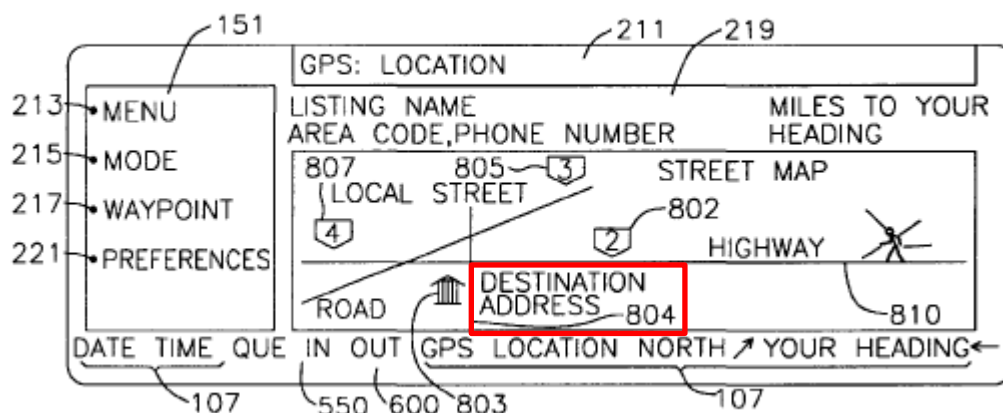
[0132] Thus, Randall-Wollrab-Obradovich meets Element [1E].

vii. Element [1F]: said display includes an address associated with said first location.

[0133] As I discussed above (§VIII.A.5.a.vi, Element [1E]), POSAs would have understood and found it obvious from Randall’s disclosures that another user’s position can be “where you want to go” (i.e., a desired destination) in Randall’s “Route finder” functionality. Randall, p. 29.

[0134] As I discussed above (§VIII.A.3), Obradovich teaches to display “the desired destination address” in the map *display* as part of navigation information, as shown in Figure 8 (annotated below). Obradovich, 10:47-55, FIG. 8 (annotated below).

FIG. 8



Obradovich, FIG. 8 (annotated)

[0135] POSAs would therefore have been motivated to implement Bob's *display* to include an address associated with Alice's first location (which may be a desired destination) to aid Bob in finding his way to Alice, and would have reasonably expected success as I discussed above (§VIII.A.4 discussing Randall-Wollrab-Obradovich combination). Randall teaches in Table 1 (excerpted and highlighted below) that the system knows *an address associated with Alice's* "GPS location," e.g., as "London W1, Seymour St." Randall, [0505].

TABLE 1

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

[0136] Reverse geo-coding a wireless device's GPS coordinates (e.g., Alice's *first location*) into a nearby associated street address was also well-known background knowledge to POSAs. My testimony regarding POSAs' background knowledge in this regard is corroborated by several references, as discussed below.

[0137] Froeberg (EX1051) describes "the server 14 reverse geocod[ing] the geodetic location to a local street network address segment." Froeberg, 4:4-7, 7:5-46; *see also* Froeberg, 3:12-14 ("a remote geodetic location such as a latitude and a longitude"). Froeberg therefore corroborates that it was within a POSA's background knowledge to reverse geocode a mobile phone's geo-coordinates (i.e., a latitude and a longitude) to obtain the address of the location

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

[0138] Stewart (EX1056) describes that “[a] first location signal, corresponding to the geographical location of portable telephone 38 as determined by GPS location detector 40” (Stewart, 7:47-49) is received at base station 17. Stewart, 8:12-15. Stewart describes that base station 17 “can use the location information and map database 24 to determine a street address of a called portable telephone 28 from which a location signal has been received.” Stewart, 8:12-23. Stewart therefore corroborates that it was within a POSA's background knowledge to reverse geocode a mobile phone's geo-coordinates (i.e., geographical location) to obtain the address of the location and that a POSA would have had a reasonable expectation of success doing so in a system like Randall's.

[0139] In another example, Sandhu (EX1054) describes “convert[ing] the location data (e.g., latitude, longitude, and maybe altitude) into [a] street address.” Sandhu, 4:34-39; *see also* Sandhu, 4:40-5:8 (“Using...the GPS code sequences, processor 16-i of mobile unit 10-i derives the street addresses.”). Sandhu therefore corroborates that it was within a POSA's background knowledge to reverse geocode a mobile phone's geo-coordinates (i.e., latitude, longitude, and maybe altitude) to obtain the address of the location and that a POSA would have had a reasonable expectation of success doing so in a system like Randall's.

[0140] In yet another example, Chern-005 (EX1057) describes acquiring “[t]he current latitude and longitude of the device” and “reverse geocod[ing] the latitude and longitude to generate the street address of the device.” Chern-005, 3:7-14. Chern-005 therefore corroborates that it was within a POSA’s background knowledge to reverse geocode a mobile phone’s geo-coordinates (i.e., current latitude and longitude) to obtain the address of the location and that a POSA would have had a reasonable expectation of success doing so in a system like Randall’s.

[0141] In addition, consistent with Obradovich’s teaching, it was well-known to POSA’s as background knowledge to display a destination address on a handheld wireless device’s map display with reasonable expectation of success. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed below.

[0142] Behr (EX1070) discloses a “system and method for providing geographically referenced information” “to a mobile unit,” which “may be a transportable device,” such as a “personal digital assistant (PDA),” which POSAs knew commonly included wireless telephone functionality. Behr, 5:22-32. As shown in Behr’s Figure 10 (annotated below), Behr shows a “display[] in a remote unit” and displaying a destination address (e.g., “280 Emerald St.”). Behr, 18:9-24, FIG. 10 (annotated below).

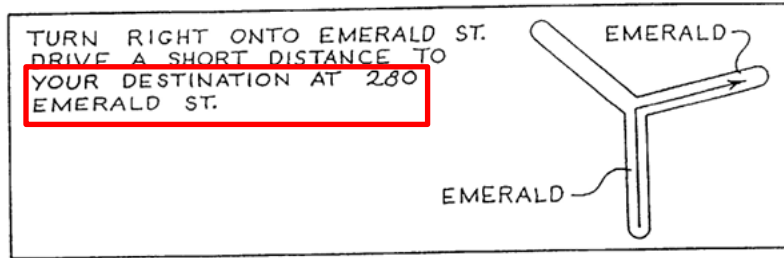


Fig. 10

Behr, FIG. 10 (annotated)

[0143] Sheha (EX1005) in Figure 5 (excerpted and annotated below) shows the display of a mobile device with a “map and **address of the destination.**” Sheha, 4:52-58; Sheha, 11:36-44 (noting that position information is sent “in the form of a Map Caller-ID” that is received by “both the originating and destination mobile device”).

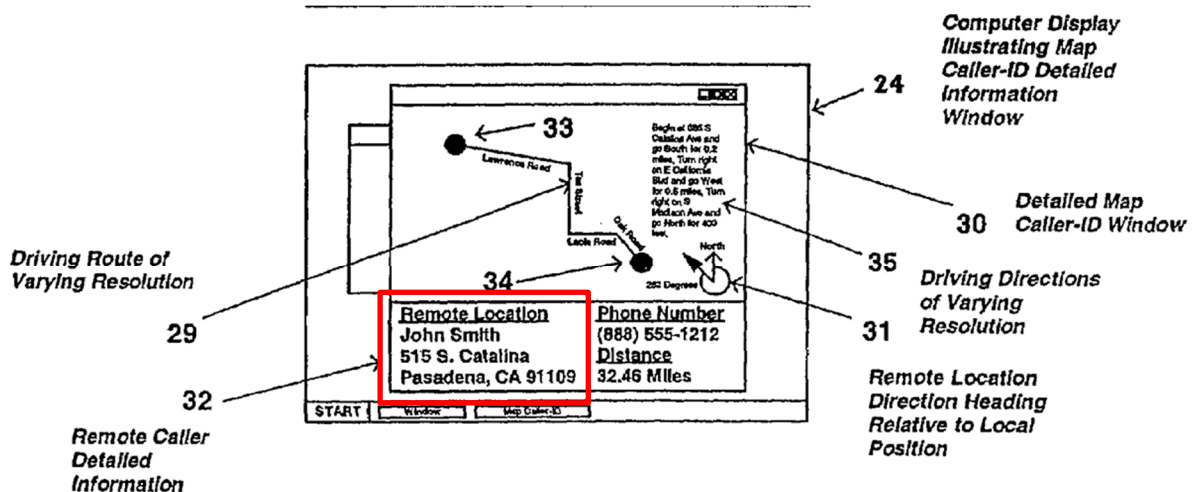


FIG. 5

Sheha, FIG. 5 (excerpted and annotated)

[0144] Thus, Randall-Wollrab-Obradovich meets Element [1F].

- b. Claim 2: The system of claim 1, wherein said permission includes several location access rights, wherein each one of said several location access rights are associated with different location resolutions.**

[0145] Randall teaches that “the data provided by or on behalf of the user will have varying levels of visibility assigned to it,” and “some users will want to define this for themselves.” Randall, [0132]. As to *said permission to locate Alice’s second telephonic wireless device*, 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 and renders obvious that *said permission* can include *several location access rights*, each associated with *different location resolutions*.

[0146] It would further have been obvious to implement these *several location access rights*, e.g., based on Obradovich’s teaching to assign access-level “indexes for each item of information” and specifying “which security level index

each such other individual should be provided.” Obradovich, 26:29-36; *see infra* §§VIII.F.2-VIII.F.4.a.

[0147] Implementing Randall’s *permission* to include *several location access rights*, each *associated with different location resolutions* also would have been obvious in view of POSAs’ background knowledge of the benefits of allowing users to share their locations with higher resolution to more trusted contacts, and reasonable expectation of success in wireless-device location-sharing systems like Randall’s. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed below.

[0148] De-Vries (EX1013) relates to “notifications to inform when certain people (e.g., friends, family, business contacts, etc.) are nearby” based on “devices carried by the people” such as “cell phone[s].” De-Vries, Abstract, 2:21-26. In De-Vries, a device’s “user can set rules and/or parameters to control when notifications are generated”— “[f]or example, a user may set a proximity parameter designating that notifications are provided only when the other users on his or her buddy list are within a certain proximity.” De-Vries, 2:52-59. “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. De-Vries teaches to allow a

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, 9:19-31.

[0149] Rice (EX1071) “relates to a system and method for managing distribution of location information generated for wireless communications devices, and more particularly to providing a control system configurable to limit access to a subscriber's wireless device based on subscriber privacy preferences.” Rice, 1:14-19. Rice discloses that users have a “subscriber profile” with “permission sets [] for client applications which will make requests.” Rice, 9:36-38. Once permission is for “[t]he granularity filter[, which] indicates for a particular client application the allowed accuracy of the location information which is to be delivered. The allowed accuracy may be employable for selecting a particular location technology (i.e., AGPS vs. cell/sector).” Rice, 9:38-51.

[0150] McDonnell teaches to allow a mobile device user to obscure its location information to a specified accuracy level before sending it to a requesting party. McDonnell, Abstract, 6:43-52, 8:30-45. In McDonnell’s system, when the mobile entity sends its location data to the service system, it specifies how the service system should “limit the accuracy of the location data it returns to the level

specified by the mobile entity.” McDonnell, 8:46-53; *see also* McDonnell 9:45-55 (receiving location data according to a “specified accuracy level”).

[0151] Thus, Randall-Wollrab-Obradovich meets claim 2.

- c. **Claim 3: The system of claim 1, wherein said permission is stored on a server remote to said second wireless telephonic device, said third wireless telephonic device, and said first wireless telephonic device.**

[0152] Randall’s i-server is an “internet *server*[]”—a “*server* on the Internet”—which POSAs would have understood is a *server remote to the wireless telephonic 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).

[0153] As I discussed above (§VIII.A.5.a.ii, Element [1A]), Randall’s i-server determines whether Bob has permission to locate Alice’s wireless device by consulting Alice’s iData database stored on the i-server. “Each piece of data on the server (the ‘i-server’)” has “an associated list of groups (‘i-Groups[’]) allowed to access the data.” Randall, [0502]-[0505]. In Table 1 (“Alice’s iData”), Alice’s designation of the “i-Groups” allowed to access her “GPS location” (where, e.g., Alice can give Bob permission by assigning him to the “partner” i-Group in Table 1) provides *said permission*, as I discussed above (§VIII.A.5.a.ii, Element [1A]).

TABLE 1

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

Randall, Table 1 (excerpted, highlighted)

[0154] Thus, *said permission is stored on* the i-server. Therefore,

Randall-Wollrab-Obradovich meets claim 3.

- d. **Claim 4: The system of claim 1, wherein said third wireless device associates a second permission with said second location to permit said first wireless telephonic device to access said second location.**

[0155] As I discussed above (§VIII.A.5.a.ii, Element [1A]), POSAs would have understood Randall's example of Alice permitting Bob to access her location to be a generic example that equally discloses how another wireless device user can permit Bob to access their location. Randall, [0053] ("Consider Alice...and Bob"—language introducing Alice and Bob as generic examples). Even if Randall had not explicitly taught this, it would have been an obvious

implementation option to allow any wireless device users to subscribe to the same functionality (including contacts functionality and location functionality) in Randall's system. Randall teaches that any "user must be able to switch location information on for a person or group of people..., i.e. being able to select the person and allow access" to make the user's device's location "[v]isible to specific people (or groups) for a specific period of time"—e.g., "for the half hour that the group of friends are trying to locate each other in town." Randall, [0144], [0136], [0143]. Thus, Randall teaches and renders obvious that *said third wireless device associates a second permission with its second location to permit Bob's first wireless telephonic device to access said second location*. Thus, Randall-Wollrab-Obradovich meets claim 4.

- e. **Claim 5: The system of claim 1, wherein said permission of said second wireless telephonic device is associated with one of several access levels with said first location, said one of said several access levels permits said first wireless telephonic device to access said first location.**

[0156] Element [1A] recites, *inter alia*, "a permission by said second telephonic wireless device to locate said second telephonic wireless device" and claim 2 recites, *inter alia*, "said permission includes several location access rights." Thus, Randall-Wollrab-Obradovich meets claim 5 for the same reasons I discussed above for Element [1A] (§VIII.A.5.a.ii), Element [1C] (§VIII.A.5.a.iv), and claim 2 (§VIII.A.5.b).

f. Claim 11

[0157] Randall-Wollrab-Obradovich meets the elements of claim 11 for the reasons I discuss below. In claim 11, Bob’s device meets the claimed *wireless device* and Alice’s device meets the claimed *first wireless device*. See §VIII.A.5.a.ii (Element [1A], explaining that 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).

i. Preamble [11PRE]: A system comprising:

[0158] Like claim 1, claim 11’s preamble only recites “A system comprising.” 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-Wollrab-Obradovich meets the preamble. Claim 11 recites a system with several elements that are essentially the same elements as recited in claim 1. Thus, Randall-Wollrab-Obradovich meets Element [11PRE] for the same reasons I discussed in relation to Element [1PRE] (*see supra* §VIII.A.5.a.i). As explained in this section below, in my opinion a POSA would have understood that Randall-Wollrab-Obradovich meets all limitations of claim 11 of the ’218 patent.

ii. Element [11A]: a wireless device operable to provide a display screen after a request from said wireless telephonic device for access to a first location of a first wireless device,

[0159] Element [11A] recites essentially the same functionality recited in Element [1A], which recites, *inter alia*, “a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred.” Thus, it is my opinion that Randall-Wollrab-Obradovich meets Element [11A] for the same reasons Randall-Wollrab-Obradovich meets Element [1A], as discussed above (§VIII.A.5.a.ii), where Element [1A]’s “first wireless telephonic device” corresponds to Element [11A]’s “wireless device” and “said wireless telephonic device,” and Element [1A]’s “second telephonic wireless device” corresponds to Element [11A]’s “first wireless device”

iii. Element [11B]: wherein said display screen includes a map from the perspective of said wireless device,

[0160] Element [11B] recites essentially the same functionality recited in Element [1B]. Thus, it is my opinion that Randall-Wollrab-Obradovich meets Element [11B] for the same reasons Randall-Wollrab-Obradovich meets Element [1B], as discussed above (§VIII.A.5.a.iii), where Randall’s map “of the area *you* are standing in” (Randall, p. 29) is *from the perspective of said wireless device*.

iv. Element [11C]: said display screen includes indicia on said map representative of said first location,

[0161] Element [11C] recites essentially the same functionality recited in Element [1C]. Thus, it is my opinion that Randall-Wollrab-Obradovich meets Element [11C] for the same reasons Randall-Wollrab-Obradovich meets Element [1C], as discussed above (§VIII.A.5.a.iv).

v. Element [11D]: said display screen includes indicia on said map representative of a second user according to a second location obtained from a second wireless device, and

[0162] Element [11D] recites essentially the same functionality recited in Element [1D]. Thus, it is my opinion that Randall-Wollrab-Obradovich meets Element [11D] for the same reasons Randall-Wollrab-Obradovich meets Element [1D], as discussed above (§VIII.A.5.a.v), where [1D]’s “*third wireless telephonic device*” corresponds to [11D]’s “*second wireless device*.”

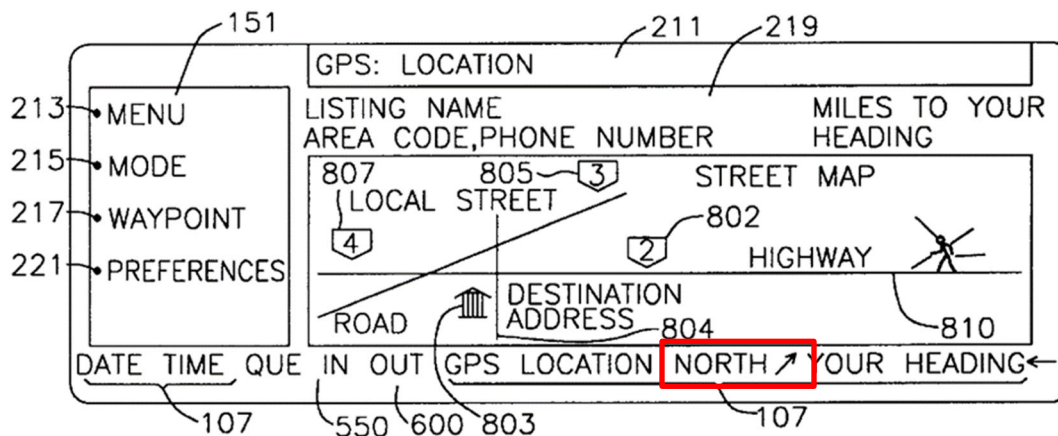
vi. Element [11E]: said display screen includes a distance from said wireless telephonic device to said first location,

[0163] Element [11E] recites essentially the same functionality recited in Element [1E]. Thus, it is my opinion that Randall-Wollrab-Obradovich meets Element [11E] for the same reasons Randall-Wollrab-Obradovich meets Element [1E], as discussed above (§VIII.A.5.a.vi).

vii. Element [11F]: said display screen includes a compass,

[0164] Obradovich teaches to *include* in the *display screen* “an arrow pointing to north,” which POSAs would have found to present *a compass*. Obradovich, 9:57-60, 10:54-55, FIG. 8 (annotated below), FIG. 11. POSAs would have found it obvious that the illustrated “north” arrow would update (e.g., dynamically rotate) to continue pointing north as the device changes orientation, including because the “north” arrow in FIG. 8 is pointing toward the top-right of the screen, rather than always pointing to the top of the screen.

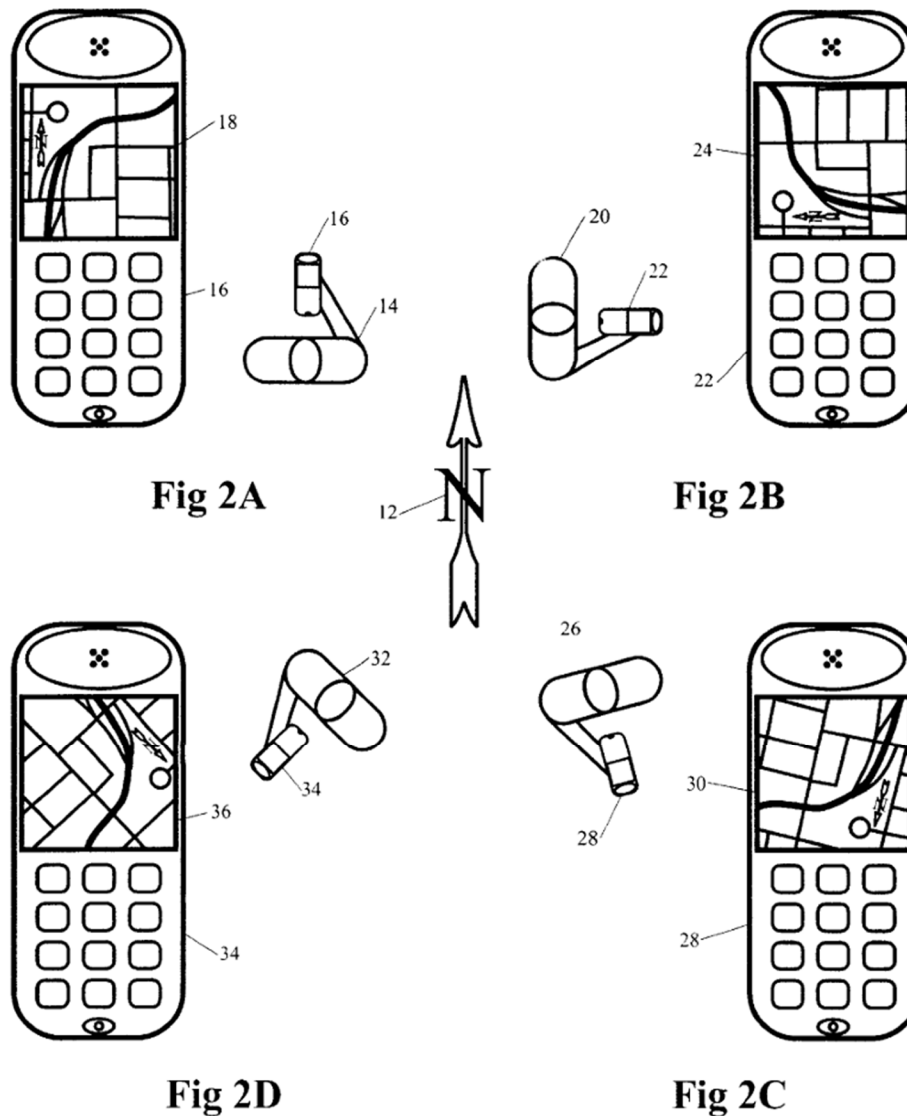
FIG. 8



Obradovich, FIG. 8 (annotated)

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.



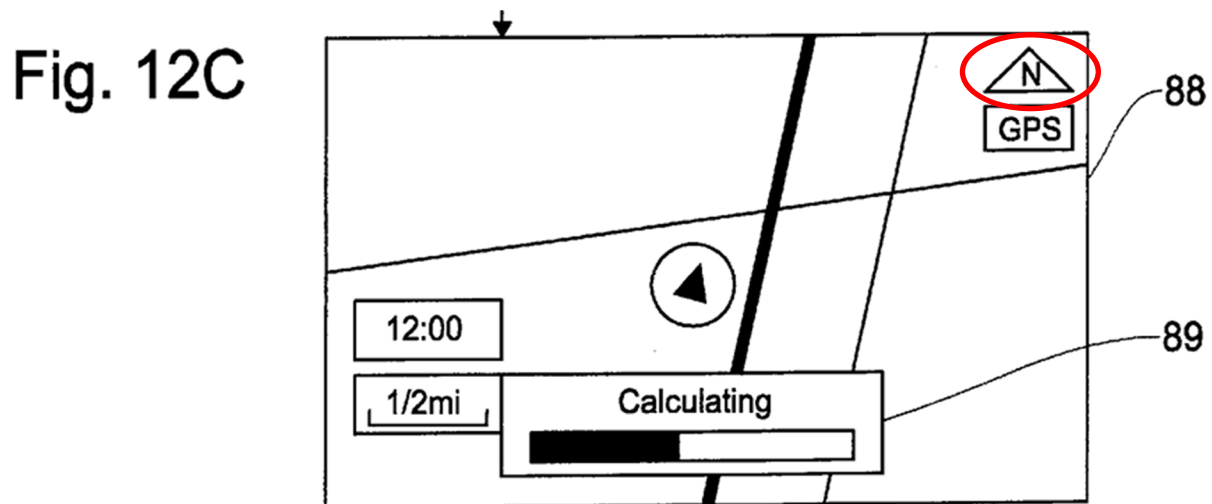
Johnson, FIGs. 2A-2D

[0165] In my opinion, POSAs would have been motivated to incorporate the feature of *a compass* in Randall’s *display screen* and would reasonably have expected success as I discussed above (§VIII.A.4).

[0166] It was also well-known, conventional background knowledge for “system[s] similar to GPS tracking in cars” (Randall, p. 29 “Route finder”) to *include a compass* in the map *display screen*. My testimony regarding POSAs’

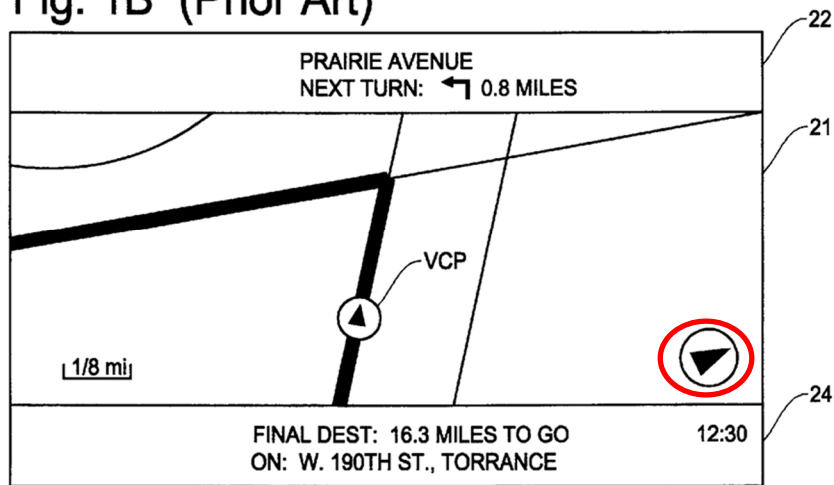
background knowledge in this regard is corroborated by several references, as discussed below.

[0167] Wako (EX1025) illustrates in Figure 12C (annotated below) a display screen for a “navigation system,” which provides a graphic that POSAs would understand is a compass (annotated below) that points North. Wako, 7:25-33 (“a north pointer N...shown in the locator map screen”); *see also* Wako, FIG. 1B (annotated below to highlight a prior art display screen with a compass), 2:6-8 (“north pointer NP” is “illustrated on the display screen” of FIGs. 1A-1B).



Wako, FIG. 12 (annotated)

Fig. 1B (Prior Art)



Wako, FIG. 1B (annotated)

[0168] Tobin (EX1041) in Figure 1C (annotated below) shows a “graphical user interface for use with [a] user device,” with a “display screen” that shows a “compass indicator 133” (annotated below). Tobin, [0028].

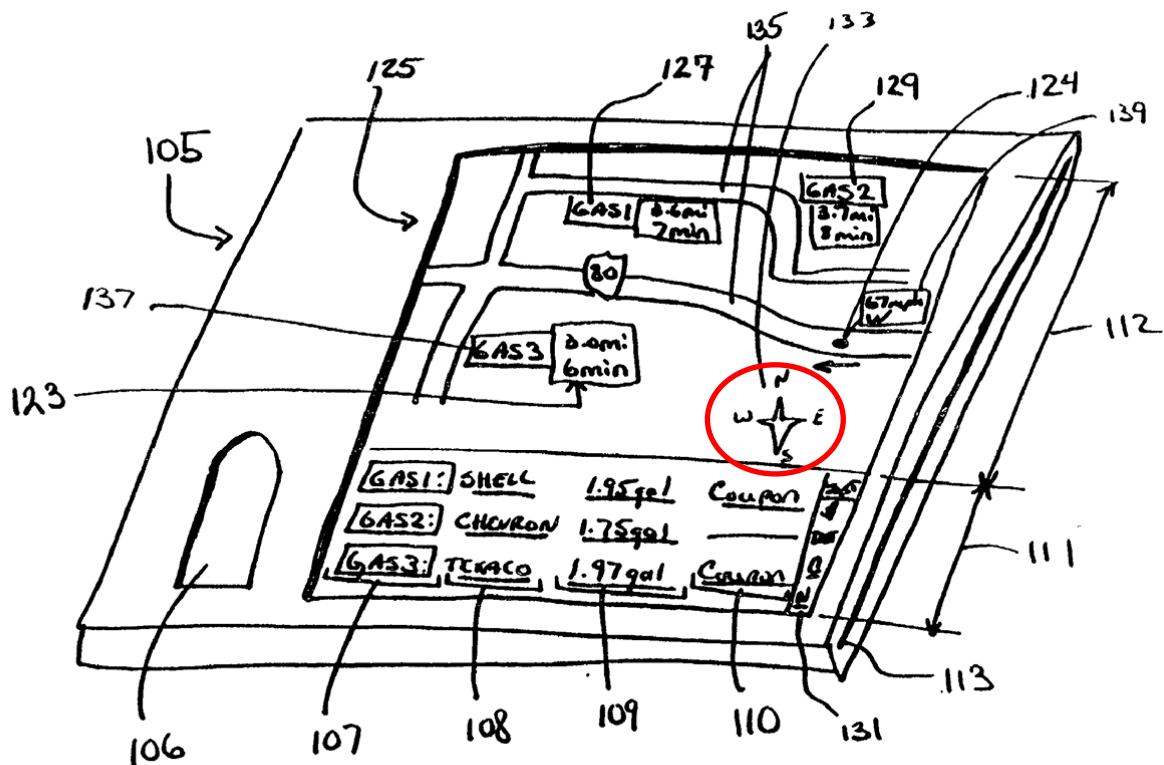
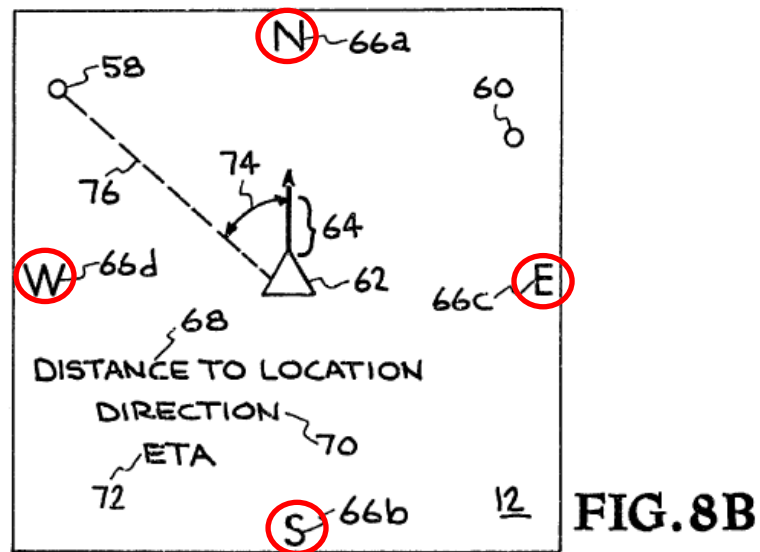


FIG. 1C

Tobin, FIG. 1C (annotated)

[0169] POSAs would have been motivated and reasonably expected success to implement Bob's *display screen* to display Alice's *first location*, another selected *second location*, and navigational information including a *compass* as it was known to display such items together on a portable unit to "clearly show[] a user 'where the user is with respect to where the user wants to go.'" EX1067, 9:12-14. My testimony in this regard is corroborated by Mura-Smith (EX1067) discussed below.

[0170] Mura-Smith (EX1067) evidences map display techniques that were known to be beneficial to “clearly show[] a user ‘where the user is with respect to where the user wants to go’” (Mura-Smith, 9:12-14; *see also* 7:40-56) with reasonable expectation of success. Mura-Smith evidences that it was known to *include* in a *display* “**screen 12**” “north, south, east, and west indicators (66a-66d),” which POSAs would have understood to present *a compass*, together with multiple other items of interest, including, e.g., the displaying device’s location 62, two other selected locations 58 and 60, a distance 68 to location 58, and an ETA 72 to location 58. Mura-Smith, 8:28-52, 7:40-56, FIG. 8B (annotated below). The *compass* indicators can be “fixed at the...sides...of screen 12,” or presented in “other types of screen display formats.” Mura-Smith, 8:28-52.



Mura-Smith, FIG. 8B (annotated)

viii. Element [11G]: said display screen includes an address of said first location, and

[0171] Element [11G] recites essentially the same functionality recited in Element [1F]. Thus, it is my opinion that Randall-Wollrab-Obradovich meets Element [11G] for the same reasons Randall-Wollrab-Obradovich meets Element [1F], as discussed above (§VIII.A.5.a.vii).

ix. Element [11H]: said display screen includes a travel time based on at least the first location and the location of said wireless telephonic device.

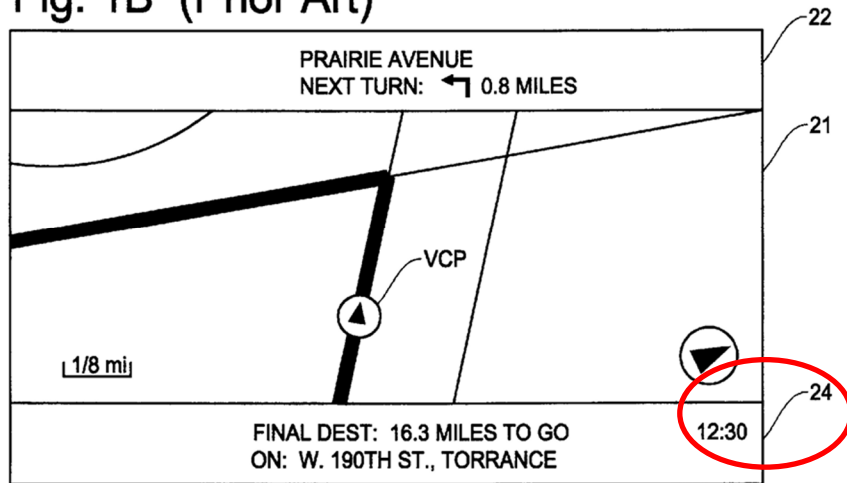
[0172] Obradovich teaches to display *a travel time based on* the displaying device's *location* and the destination to which the user is navigating (i.e., *the first location* in the combination with Randall that I discussed above (§VIII.A.4)). Obradovich, 2:60-63, 22:55-65; Fig. 47. Obradovich teaches “to determine travel times for the various route and route alternative segments. Real time calculation and *display* of segment *travel times* accordingly allows the [displaying device's] user to accurately determine and estimate travel times to particular destinations over a plurality of different roads and road segments.” Obradovich, 22:47-54. “[T]he process determines travel times for each of the route segments; and the route as a whole.” Obradovich, 22:62-65, 8:18-22 (“arrival time estimates can be included”).

[0173] POSAs would have been motivated to incorporate this feature in Randall's *display screen* and would reasonably have expected success as I discussed above (§VIII.A.4).

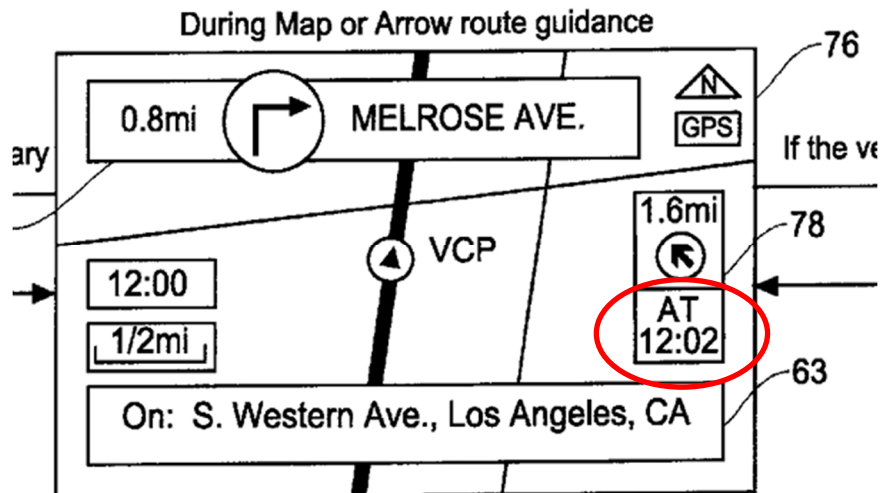
[0174] It was also well-known, conventional background knowledge for "system[s] similar to GPS tracking in cars" (Randall, p. 29 "Route finder") to *include* in the map *display screen* "an estimated **time** to reach the final destination." Wako, 2:12-34. My testimony regarding POSAs' background knowledge in this regard is corroborated by several references, as discussed below.

[0175] Wako (EX1025) illustrates in Figure 1B (annotated below) a prior art "route guidance display" screen that includes "an information box 24" that "includes information regarding the remaining distance to the final destination and **an estimated time to reach the final destination.**" Wako, 2:12-34, FIG. 1B (annotated below). Wako's Figure 7 (excerpted and annotated below) similarly shows a "route guidance screen" that "includes an information box 78 which shows a distance to the final destination and **an anticipated time to reach the final destination.**" Wako, 9:8-22, FIG. 7 (excerpted and annotated below).

Fig. 1B (Prior Art)



Wako, FIG. 1B (annotated)



Wako, FIG. 7 (excerpted and annotated)

[0176] Tobin (EX1041) in Figure 1C (annotated below) shows a “graphical user interface for use with [a] user device,” with a “display screen” that shows “the estimated remaining travel time” to various potential destination gas stations (annotated in different colors below; e.g., 6 minutes to gas station 3, which is a Texaco station). Tobin, [0028].

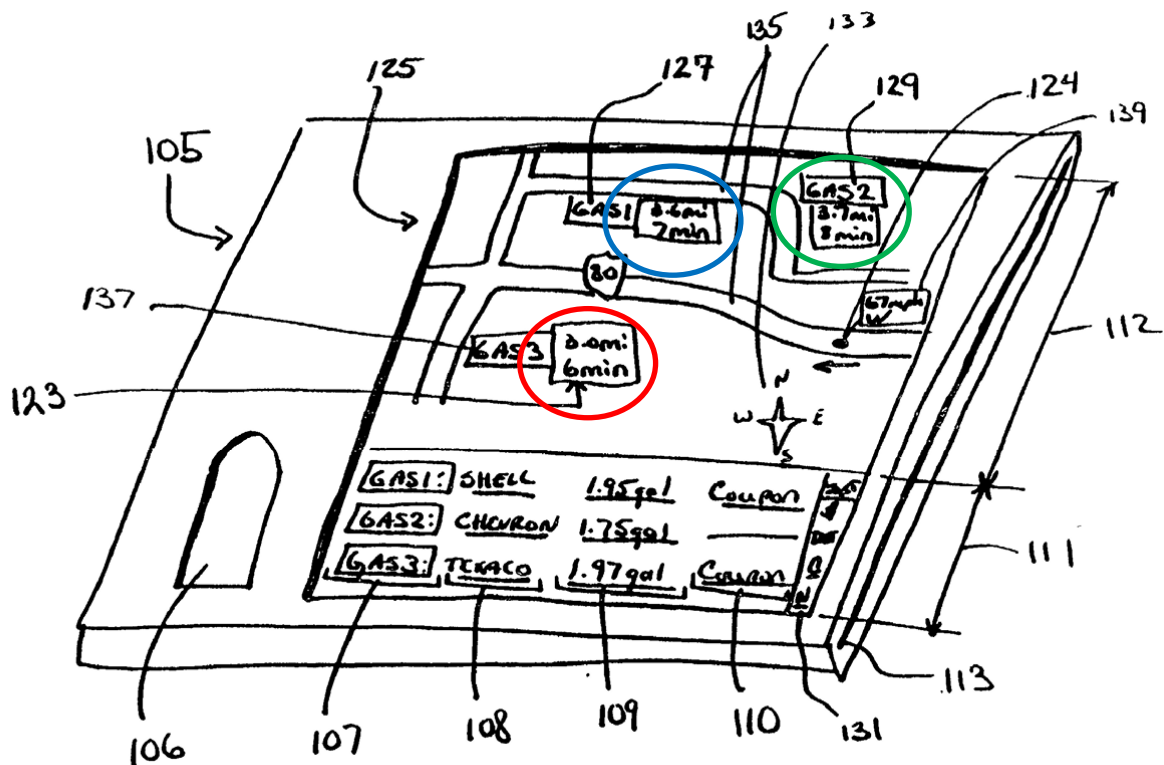
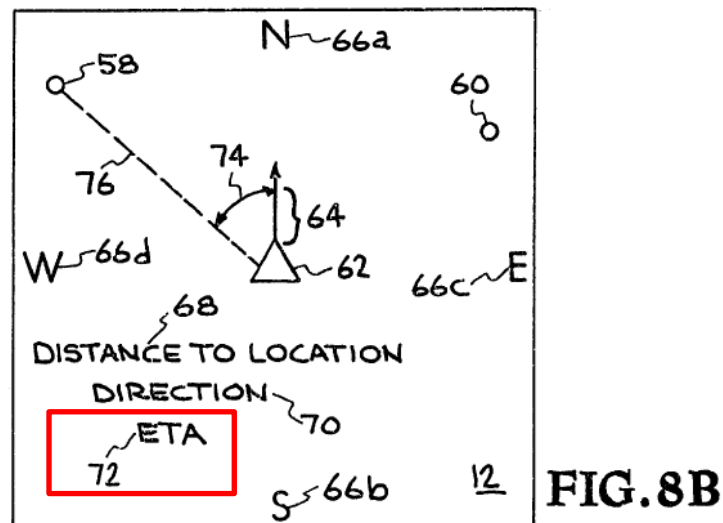


FIG. 1C

Tobin, FIG. 1C (annotated)

[0177] POSAs would have been motivated and reasonably expected success to implement Bob's *display screen* to display Alice's *first location*, another selected *second location*, and navigational information including a *travel time* to Alice's location as it was known to display such items together on a portable unit for navigation purposes. My testimony in this regard is corroborated by Mura-Smith as discussed below.

[0178] Mura-Smith evidences that it was known to *include* in the “*display screen 12*” an “‘ETA’ (estimated time of arrival) 72” (as shown in FIG. 8B annotated below) that “estimates the *time* it will take” the wireless device doing the display “to reach the selected location”—which POSAs would have understood to present *a travel time based on at least the destination location and the location of said wireless telephonic device*—together with multiple other items of interest, including, e.g., the displaying device’s location 62, two other selected locations 58 and 60, a distance 68 to location 58, and a compass. Mura-Smith, 8:45-57, FIG. 8B (annotated below); *see also* Mura-Smith, 9:12-14, 7:40-56.



Mura-Smith (FIG. 8B) annotated

- g. Claim 12: The system of claim 11, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location.**

[0179] Element [1A] recites, *inter alia*, “*said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device.*” Thus, Randall-Wollrab-Obradovich meets claim 12 for the same reasons Randall-Wollrab-Obradovich meets Element [1A], as discussed above (§VIII.A.5.a.ii).

- h. Claim 13: The system of claim 11, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location and said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.**

[0180] Element [1A] recites, *inter alia*, “*said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device*” and claim 3 recites “*wherein said permission is stored on a server remote to said second wireless telephonic device, said third wireless telephonic device, and said first wireless telephonic device.*” Thus, Randall-Wollrab-Obradovich meets claim 13 for the same reasons Randall-Wollrab-Obradovich meets Element [1A] and claim 3, as discussed above.

§VIII.A.5.a.ii (Element [1A]), §VIII.A.5.c (claim 3).

- i. **Claim 14: The system of claim 11, wherein said first wireless device associates a first permission with said first location to permit said wireless telephonic device to access said first location and said second wireless device associates a second permission with said second location to permit said wireless telephonic device to access said second location.**

[0181] Element [1A] recites, *inter alia*, “*said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device*” and claim 4 recites “*wherein said third wireless device associates a second permission with said second location to permit said first wireless telephonic device to access said second location.*” Thus, Randall-Wollrab-Obradovich meets claim 13 for the same reasons Randall-Wollrab-Obradovich meets Element [1A] and claim 4, as discussed above.

§VIII.A.5.a.ii (Element [1A]), §VIII.A.5.d (claim 4).

- j. **Claim 15: The system of claim 11, wherein said first wireless device associates one of several access levels with said first location, said one of said several access levels permits said wireless telephonic device to access said first location.**

[0182] Element [1A] recites, *inter alia*, “*said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device*” and claim 5 recites “*wherein said permission of said second wireless telephonic device is associated with one of several access levels with said first location, said one of said several access levels*

permits said first wireless telephonic device to access said first location.” Thus, Randall-Wollrab-Obradovich meets claim 15 for the same reasons Randall-Wollrab-Obradovich meets Element [1A] and claim 5, as discussed above. §VIII.A.5.a.ii (Element [1A]), §VIII.A.5.e (claim 5).

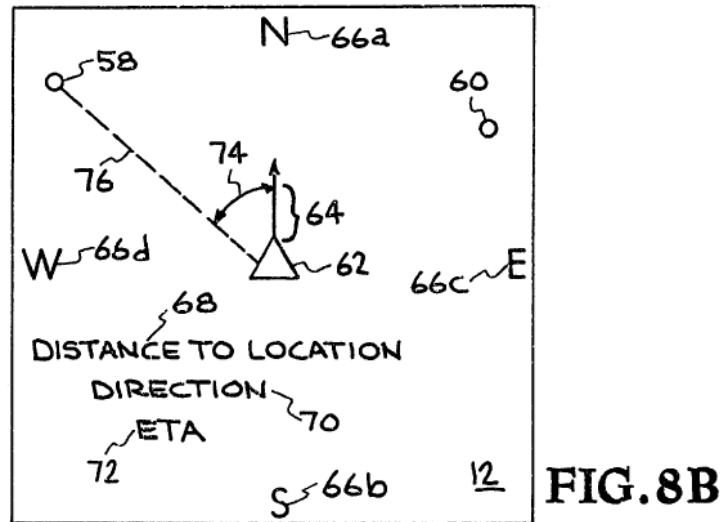
B. Ground 2: Claims 6-10 are Unpatentable Over Randall in view of Wollrab, Obradovich, and Mura-Smith

[0183] As I explain in this section below, in my opinion claims 6-10 of the '218 patent would have been obvious to a POSA in view of the combined teachings of Randall (EX1007-1008), Wollrab (EX1014), Obradovich (EX1043), and Mura-Smith (EX1067).

[0184] Above, I provided a discussion of Randall (§VIII.A.1), Wollrab (§VIII.A.2), and Obradovich (§VIII.A.3).

1. Discussion of Mura-Smith (EX1067)

[0185] Mura-Smith teaches “graphic display” options for a “portable hand-held unit” used in “personal navigation.” Mura-Smith, Abstract. The portable unit displays “[t]he relative position of the user with respect to at least one selected location,” with the selected locations “visually represented by icons” to “allow[] a user to easily navigate to...a selected location.” Mura-Smith, 5:10-36. The “display screen” also displays “navigational information” such as “Distance to Destination,” “Direction,” and “ETA,” and the direction of “the most expedient path” (“dotted line”) to the “destination.” Mura-Smith, 8:45-67, FIG. 8B:



Mura-Smith (FIG. 8B)

2. Discussion of Randall-Wollrab-Obradovich-(Mura-Smith) Combination

[0186] POSAs would have been motivated by Randall’s objectives of aiding friends and family in viewing each other’s locations and meeting up with each other (as I discussed above §VIII.A.4) to incorporate any of Mura-Smith’s graphic display techniques to provide navigational information to aid the device user in navigating to another user’s location. POSAs would have reasonably expected success because Mura-Smith’s graphical display is provided on a portable wireless GPS-enabled device similar to Randall’s. Mura-Smith, 7:10-29, FIG. 8A; Randall, p. 24 (“GPS wireless information device”), p. 29 (“Route finder”).

3. Mapping of Randall-Wollrab-Obradovich-(Mura-Smith) Combination to Claims 6-10

[0187] As explained in this section below, in my opinion a POSA would have understood that the Randall-Wollrab-Obradovich-(Mura-Smith)

combination meets all limitations of claims 6-10 of the '218 patent, and therefore renders those claims obvious.

a. Claim 6

i. Preamble [6PRE]: A system comprising:

[0188] Like claim 1, claim 6's preamble only recites "A system comprising." 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-Wollrab- Obradovich-(Mura-Smith) meets the preamble. Randall-Wollrab-Obradovich-(Mura-Smith) meets Element [6PRE] for the same reason Randall provides a *system*, as I discussed above for Element [1PRE] (§VIII.A.5.a.i). As explained in this section below, in my opinion a POSA would have understood that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets all limitations of claim 6 of the '218 patent.

ii. Element [6A]: a wireless telephonic device operable to provide a display screen after a request from said wireless telephonic device for access to a first location of a first wireless device,

[0189] In claim 6, Bob's device meets the claimed *wireless telephonic device* and Alice's device meets the claimed *first wireless device*.

[0190] Further, Element [1A] recites "*a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred and after*

a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device.” Element [6A] recites essentially the same functionality recited in Element [1A] except does not recite “*provid[ing] a display screen*” is “*after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device.*” Thus, it is my opinion that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets Element [6A] for the same reasons the Randall-Wollrab-Obradovich combination meets Element [1A], as discussed above (§VIII.A.5.a.ii).

iii. Element [6B]: wherein said display screen includes a map provided from a perspective of said wireless telephonic device,

[0191] Element [6B] recites essentially the same functionality as Element [1B], which recites “*wherein said display screen includes a map provided with respect to the location of said first wireless telephonic device.*” Thus, it is my opinion that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets Element [6B] for the same reasons the Randall-Wollrab-Obradovich combination meets Element [1B], as discussed above (§VIII.A.5.a.iii).

iv. Element [6C]: said display screen includes indicia on said map representative of said first location,

[0192] Element [6C] recites essentially the same functionality as Element [1C], which recites “*said display screen includes indicia on said map representative of a first location.*” Thus, it is my opinion that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets Element [6C] for the same reasons the Randall-Wollrab-Obradovich combination meets Element [1C], as discussed above (§VIII.A.5.a.iv).

v. Element [6D]: said display screen includes indicia on said map representative of a second location obtained from a second wireless device, and

[0193] Element [6D] recites essentially the same functionality as Element [1D], which recites “*said display screen includes indicia representative of a second location obtained from said third wireless telephonic device.*” Thus, it is my opinion that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets Element [6D] for the same reasons the Randall-Wollrab-Obradovich combination meets Element [1D], as discussed above (§VIII.A.5.a.v).

vi. Element [6E]: said display screen includes a distance from said wireless telephonic device to said first location,

[0194] Element [6E] recites essentially the same functionality as Element [1E], which recites “*said display screen includes a distance from said first wireless telephonic device to said first location.*” Thus, it is my opinion that the

Randall-Wollrab-Obradovich-(Mura-Smith) combination meets Element [6E] for the same reasons the Randall-Wollrab-Obradovich combination meets Element [1E], as discussed above (§VIII.A.5.a.vi).

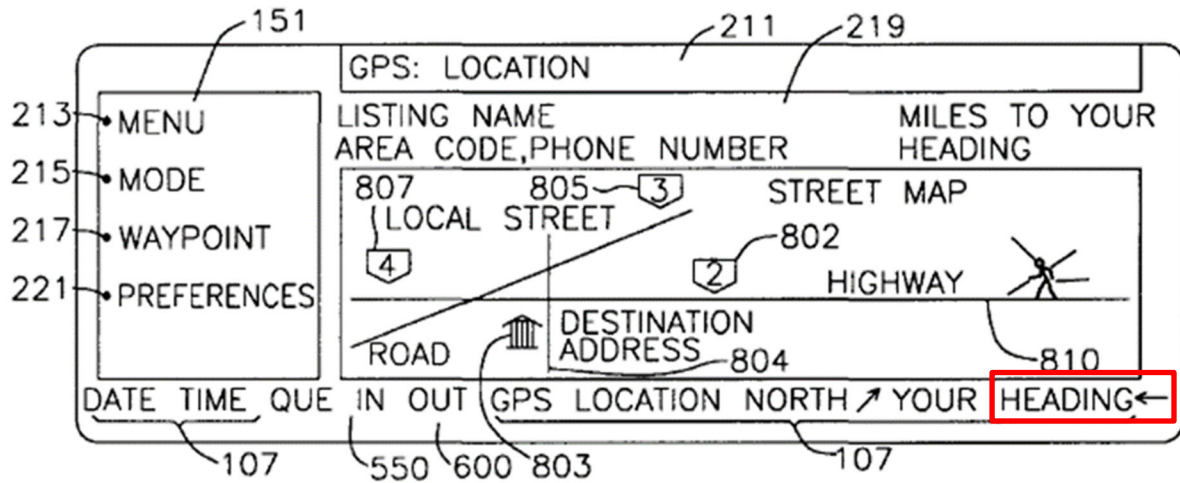
vii. Element [6F]: said display screen includes a compass,

[0195] Element [6F] recites essentially the same functionality as Element [11F], which recites “*said display screen includes a compass.*” Thus, it is my opinion that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets Element [6F] for the same reasons the Randall-Wollrab-Obradovich combination meets Element [11F], as discussed above (§VIII.A.5.f.vii).

viii. Element [6G]: said display screen includes a directional arrow representative of the direction of said first location with respect to the location of said wireless telephonic device, and

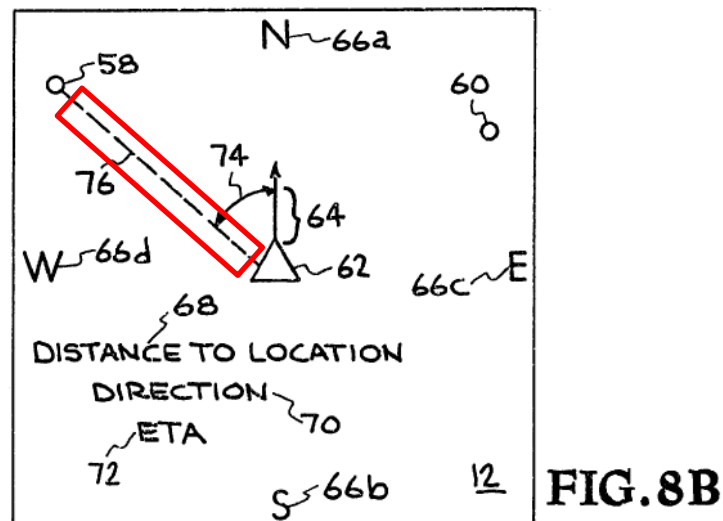
[0196] Obradovich’s FIG. 8 (annotated below) teaches to *include* in the display screen a directional arrow representative of the direction of “your heading,” which in Figure 8 is pointing to the user’s “destination” (i.e., *the first location* in the combination with Randall discussed above (§VIII.A.4, §VIII.B.2).

FIG. 8



Obradovich, FIG. 8 (annotated)

[0197] Additionally, Mura-Smith teaches to *include* in the “*display screen 12*” a “*dotted line 76*” which “*indicates the most expedient path as the crow flies to destination 58.*” Mura-Smith, 8:45-67, FIG. 8B (annotated below).



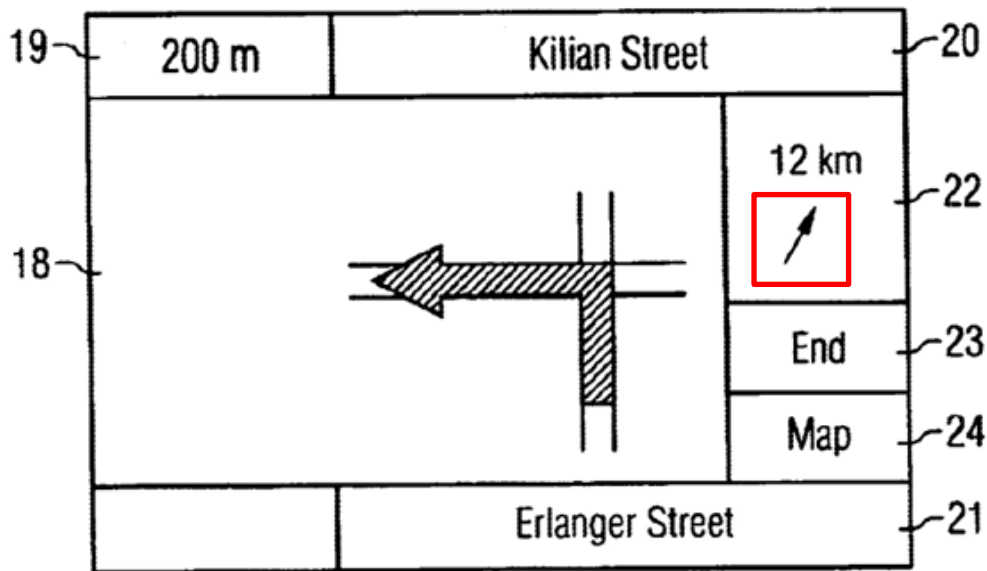
Mura-Smith, FIG. 8B (annotated)

[0198] POSAs would have understood line 76 to provide a directional arrow representative of the direction of the destination (said first location) with respect to the location of said wireless telephonic device. POSAs would have been motivated to incorporate this feature in Randall’s display screen and would reasonably have expected success as I discussed above §VIII.B.2.

[0199] It was also well-known, conventional background knowledge for “system[s] similar to GPS tracking in cars” (Randall, p. 29 “Route finder”) to *include in the map display screen a directional arrow representative of the direction of the destination with respect to the device’s current position*, and implementing Mura-Smith’s line 76 to have an arrowhead pointing to the destination would have been an obvious variation based on this background knowledge. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed below.

[0200] Deworetzki (EX1068) describes “a navigation system for a land vehicle having a measuring arrangement for supplying position, ***direction*** and/or distance data.” Deworetzki, Abstract. As shown in FIG. 2 of Deworetzki (annotated below), “various information is presented to the driver in various areas of the picture” (Deworetzki, 4:55-57) including “[i]n an area 22 on the right of the picture, the distance to the destination (12 km) is shown by an ***arrow*** indicating the direction of the destination.” Deworetzki, 4:64-66.

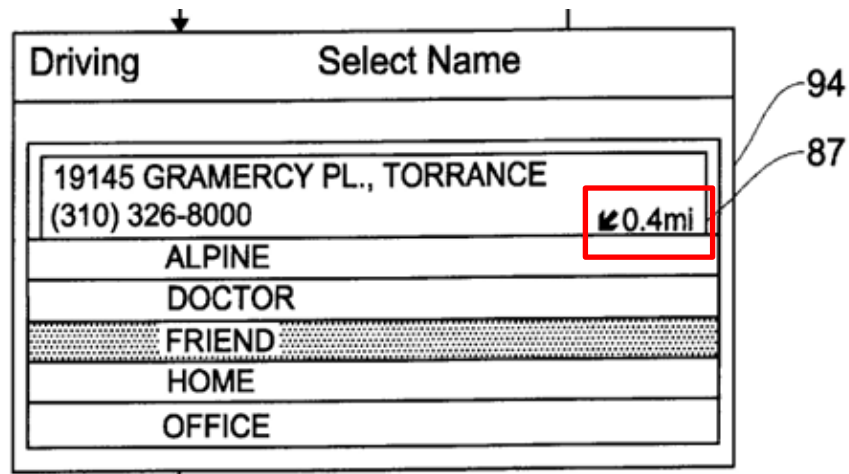
FIG 2



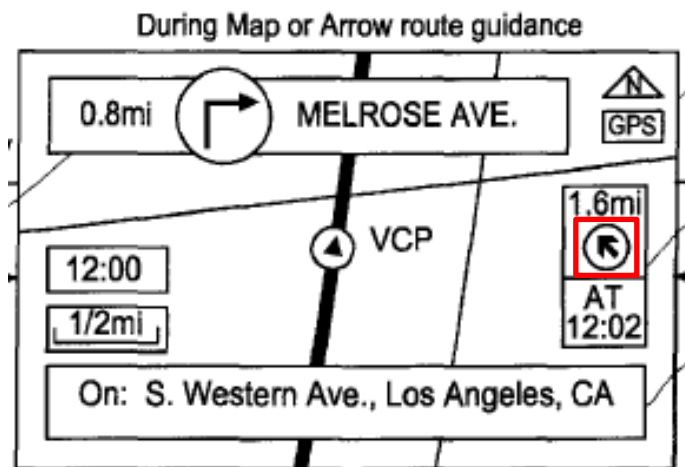
Deworetzki, FIG. 2 (annotated)

[0201] Wako (EX1025) describes a “navigation system for displaying information necessary for guiding a driver of a vehicle.” Wako, Abstract. As shown in FIG. 12B of Wako (annotated and excerpted below), “[t]he ‘Select Name’ menu 94 includes an address information box 87 which shows an address, phone number, *a direction by an arrow*, and a distance to location of the name highlighted in the name list.” Wako, 12:60-63. As shown in FIG. 7 of Wako (annotated and excerpted below), “[t]he route guidance screen 76 further includes an information box 78 which” similarly “shows a distance to the final destination,” as well as a similar directional arrow pointing toward the destination. Wako, 9:18-22, FIG. 7.

Fig. 12B



Wako, FIG. 12B (annotated and excerpted)



Wako, FIG. 7 (annotated and excerpted)

[0202] Thus, the above references corroborate by opinion that POSAs would have understood from background knowledge that it was also well-known, conventional background knowledge for “system[s] similar to GPS tracking in cars” (Randall, p. 29 “Route finder”) to *include* in the map *display screen a directional arrow representative of the direction of the destination with respect to* the device’s current position with reasonable expectation of success in a system like the system in the Randall-Wollrab-Obradovich-(Mura-Smith) combination.

[0203] Thus, it is my opinion that the Randall-Wollrab-Obradovich (Mura-Smith) combination meets Element [6G].

ix. Element [6H]: a determination is operable to be made to provide on said wireless telephonic device for a travel time from said first location to said wireless telephonic device.

[0204] Element [6H] recites essentially the same functionality as Element [11H], which recites “*said display screen includes a travel time based on at least the first location and the location of said wireless telephonic device.*” Thus, it is my opinion that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets Element [6H] for the same reasons the Randall-Wollrab-Obradovich combination meets Element [11H], as discussed above (§VIII.A.5.f.viii).

b. Claim 7: The system of claim 6, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location.

[0205] Claim 7 recites essentially the same functionality as Element [1A], which recites “*a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred and after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device*” and

therefore “*associates a permission with said first location to permit said wireless telephonic device to access said first location.*” Thus, it is my opinion that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets claim 7 for the same reasons the Randall-Wollrab-Obradovich combination meets Element [1A], as discussed above (§VIII.A.5.a.ii).

- c. **Claim 8: The system of claim 6, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location and said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.**

[0206] Claim 8 recites essentially the same functionality as Element [1A], which recites “*a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred and after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device*” and therefore “*associates a permission with said first location to permit said wireless telephonic device to access said first location.*” Further, claim 8 recites essentially the same functionality as claim 3, which recites “*said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.*”

[0207] Thus, it is my opinion that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets claim 8 for the same reasons discussed above that the Randall-Wollrab-Obradovich combination meets Element [1A] (§VIII.A.5.a.ii) and claim 3 (§VIII.A.5.c).

- d. **Claim 9: The system of claim 6, wherein said first wireless device associates a first permission with said first location to permit said wireless telephonic device to access said first location and said second wireless device associates a second permission with said second location to permit said wireless telephonic device to access said second location.**

[0208] Claim 9 recites essentially the same functionality as Element [1A], which recites “*a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred and after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device*” and therefore “*associates a first permission with said first location to permit said wireless telephonic device to access said first location.*” Further, claim 9 recites essentially the same functionality as claim 4, which recites “*said third wireless device associates a second permission with said second location to permit said first wireless telephonic device to access said second location.*”

[0209] Thus, it is my opinion that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets claim 9 for the same reasons discussed above that the Randall-Wollrab-Obradovich combination meets Element [1A] (§VIII.A.5.a.ii) and claim 4 (§VIII.A.5.d).

- e. **Claim 10: The system of claim 6, wherein said first wireless device associates one of several access levels with said first location, said one of said several access levels permits said wireless telephonic device to access said first location.**

[0210] Claim 10 recites essentially the same functionality as Element [1A] and claim 5, which recites “*said permission of said second wireless telephonic device is associates with one of several access levels with said first location, said one of said several access levels permits said first wireless telephonic device to access said first location.*” Thus, it is my opinion that the Randall-Wollrab-Obradovich-(Mura-Smith) combination meets claim 10 for the same reasons discussed above that the Randall-Wollrab-Obradovich combination meets Element [1A] (§VIII.A.5.a.ii) and claim 5, as discussed above (§VIII.A.5.e).

C. Ground 3: Claims 16-19 are Unpatentable over Randall in view of Song

1. Discussion of Song (EX1069)

[0211] Song teaches techniques for use with “personal devices includ[ing] wireless telephones,” where a user may have more than one device and a device may be shared among different users. Song, 4:66-67, Abstract, 2:22-36,

5:9-19. The same “owner” can be the “primary user” of multiple devices. Song, 5:10, 8:13-14. A “server...provid[es] an authentication and authorization function for the personal device(s).” Song, 7:4-7. The server stores data “for each owner,” including “owner data 30 and at least one device record 32 for at least one personal device 14,” forming “a list of personal devices 14 commonly owned by that owner.” Song, 8:9-22. “The owner data 30...includes an owner identity 34 and...user name, password or any other personal information.” Song, 8:30-37. The device record can also include “a user name” of another “user anticipated to operate the personal device” (i.e., to share it). Song, 9:30-40.

[0212] “When the...personal device 150 is activated, the...user is prompted to provide login information” which “is transmitted to the...server 162 to identify the user” so the “user may launch an application with the...personal device.” Song, 13:32-41. Additionally, “the device record 32 is cached in the personal device 14 for situations where the registry server 16 is not available. In these situations, the personal device 14 may use the locally stored information for authorization and verification related activities.” Song, 11:48-52.

2. Discussion of Randall-Song Combination

[0213] Like Song’s, Randall’s is a system where a user may have more than one device and a device may be shared among different users. Randall, [0054] (“the server transparently decides which device an entity should be

contacted on at any particular time”—teaching that a user may have more than one device), [0067] (user may “borrow[] someone else’s wireless information device or use[] a public device”). In my opinion, based on Song’s teachings, POSAs would have been motivated and reasonably expected success to incorporate authentication and authorization functionality in Randall’s system that receives the user’s login information to identify the user on each device he/she uses, to ensure that the user only accesses data and functionality that he/she is authorized to access, and to allow for authenticating a user when the remote server is offline/unavailable and/or when the wireless device has a poor network connection.

3. Mapping of Randall-Song Combination to Claims 16-19

a. Claim 16

i. Preamble [16PRE]: A system comprising:

[0214] Like claim 1, claim 16’s preamble only recites “A system comprising.” 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-Song meets the preamble. Randall-Song meets Element [16PRE] for the same reason Randall provides a *system*, as I discussed above for Element [1PRE] (§VIII.A.5.a.i). As explained in this section below, in my opinion a POSA would have understood that Randall-Song meets all limitations of claim 16 of the ’218 patent.

ii. Element [16A]: a first device operable to identify a user identification on said first device by receiving a login and password from said first device,

[0215] In Randall's system, Alice's device is an exemplary *first device*, and it can have the same generic functionality as Bob's or any other user's device, as I discussed above (§VIII.A.5.a.ii, Element [1A]; §VIII.A.5.d (claim 4)).

[0216] Randall teaches that a user (e.g., "Bob (as opposed merely to Bob's device)") may be "authenticated" by inputting "a PIN" or "'select[ing] [his] favourite colour/restaurant/recent film etc.[], with the server only authenticating Bob when he answers correctly." Randall, [0067]. In some examples, this can be "relevant...where Bob borrows someone else's wireless information device or uses a public device" to access both "his own personal information" and information of his contacts, including Alice. Randall, [0067].

[0217] Because Bob can be authenticated as "Bob the person," even when using "someone else's" device or "a public device," POSAs would have understood Randall to teach that Bob inputs a *login* (i.e., an identifier "identifying an entity seeking information" as purporting to be "Bob the person") on the device he is using, from which the server receives it. Randall, [0067]. The "PIN" or "select[ed] answer[]" from a multiple choice" is a *password* that, if it "correctly" matches what the server has stored as Bob's "PIN" or "favourite colour/restaurant/recent film" (Randall, [0067]), authenticates that the user is truly

Bob. Randall, [0380] (“[t]he authentication can use...a basic WID and *password*/passphrase”). Randall’s “authentication” can be used for access control “both locally and on the server” (Randall, [0380]), corroborating that it is input locally on the wireless device and then received by the server.

[0218] It would also have been obvious to receive *a login and password* on the wireless device to authenticate its user, as doing so was well-known in POSAs’ background knowledge as a beneficial and commonly used option. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed below.

[0219] Carey (EX1024) describes “instant message communication in a wireless and non-wireless environment.” Carey, Abstract, *see also* 1:8-12, 3:18-34. Carey describes authenticating a user to access the “wireless instant message service” by “completing a **sign-on or logon with password verification.**” Carey 4:6-33, *see also id.*, 5:5-28 (“a sign on”). Carey provides an example of using “a wireless instant messaging sign on window 200 [that] includes data fields for entry of the **user’s screen name 202 and password 204**” to authorize a user to access the service. Carey, 7:65-8:16, FIGs. 8-14. Therefore, Carey corroborates that the receiving inputs of a password on a wireless device to authenticate the device’s user was within a POSAs’ background knowledge as a typical and obvious way to

use manual inputs to authenticate a device user seeking another user's information (including location).

[0220] Thomas (EX1019) describes a “location monitoring system” for “location tracking, location utilization, and dissemination and management of location information.” Thomas, Abstract, 1:15-55 (disclosing that the “present invention relates to computing or communication devices,” which include “wireless communication devices,” such as “mobile phones [and] personal digital assistants (PDAs)”); *see also id.*, 2:58-3:6. Prior to disseminating location information to a requesting user, the requesting user “must login with an appropriate **user name and/or password**. This allows restricted access to the location information.” Thomas, 5:49-54, *see also id.*, 6:53-7:49 (describing waiting for a log-in response and then, once received, determining whether it was successful), 7:27-40 (describing providing location information to a requesting user after the log-in response is successful). The location information of mobile devices in the system is thus obtainable by a user if the user is authorized and authenticated via user name and password. Therefore, Thomas corroborates that the receiving inputs of a password on a wireless device to authenticate the device's user was within a POSAs' background knowledge as a typical and obvious way to use manual inputs to authenticate a device user seeking another user's information (including location).

[0221] Chern (EX1029) concerns mobile wireless communication devices and a system and method for “locating and tracking mobile telephone devices via the Internet.” Chern, 1:6-9. Chern discloses that when users “want to know the location of a particular mobile telephone” they connect to a Web server “via a browser residing on a mobile telephone device” that “displays an authorization screen that requires the requesting party to enter a valid **user name and password combination.**” Chern, 6:55-7:20. The location information of mobile devices in the system is thus obtainable by a user if the user is authorized and authenticated via user name and password. Therefore, Chern also corroborates that the entering of a user name and password to authenticate a requesting user accessing a location of another user was well-known in POSAs’ background knowledge as a typical and obvious way to use manual inputs to authenticate a device user seeking another user’s information (including location).

[0222] Sandhu (EX1054) relates to “distributing positional information and location specific messages to mobile units by using a data network.” Sandhu, 1:8-10. Sandhu discloses users that register with the positioning system receive “**a login name and a password**” entered via the user’s mobile device. Sandhu, 5:9-34. The positional and location information of mobile devices in the system is thus obtainable by a user if the user is authorized and authenticated via login name and password. Sandhu, 5:35-51. Therefore, Sandhu also corroborates that the

receiving inputs of a password on a wireless device to authenticate the device's user was within a POSAs' background knowledge as a typical and obvious way to use manual inputs to authenticate a device user seeking another user's information (including location).

[0223] Futagami (EX1030) concerns an information processing apparatus that uses **“a password together with user identification”** to access a “management server” (8:56-67) from which “personal information of user[s]” can be obtained (10:9-17). The personal information of mobile devices in the system is thus obtainable by a user if the user is authorized and authenticated by user identification and password. Therefore, Futagami also corroborates that the receiving inputs of a password on a wireless device to authenticate the device's user was within a POSAs' background knowledge as a typical and obvious way to use manual inputs to authenticate a device user seeking another user's information (including location).

[0224] Darling (EX1022) concerns communications with mobile devices. Darling discloses a user using an “identifier (e.g. **login name and/or password and/or email address**)” (8:32-34) to gain access to a service that permits “a user to determine the location of another user without specifically having to contact that other user” (2:1-12). The location information of mobile devices in the system is thus obtainable by a user if the user is authorized and

authenticated by login name and password. Therefore, Darling also corroborates that the receiving inputs of a password on a wireless device to authenticate the device's user was within a POSAs' background knowledge as a typical and obvious way to use manual inputs to authenticate a device user seeking another user's information (including location).

[0225] Randall teaches that the same "need for authentication of the user" applies "when they access their data" (Randall, [0380]), such as when Alice uses her *first device* to access "Alice's i-Data" on the i-server (Randall, [0503]-[0505]) or the "cached version of all of her information" stored locally on her wireless device (Randall, [0069]). POSAs would thus have understood that Randall *receives a login and password from Alice's first device* to authenticate Alice to update her i-Data.

[0226] Randall's "authentication" can be used for access control "both *locally* and on the server." Randall, [0380]. Thus, Alice's *user information* is *identified* locally on her *first device* before she accesses her "cached" i-Data on her device and before she uses her device to access and update her i-Data on the i-server.

[0227] Additionally, Song teaches to "cache[] in the personal device" a "device record" that includes sufficient "login information" such that "the personal device 14 may use the locally stored information for authorization and verification

related activities” in “situations where the...server... is not available.” Song, 11:1-52, 5:48-55 (“The personal device...prompt[s] for login information when the personal device 14 is activated,” including “user name and password...for identifying [the] user”). Song teaches that the record can contain sufficient login information to identify Alice if she owns the device or is using someone else’s device. Song, 8:18-9:45, FIG. 3; *see supra* §VIII.C.1. As I discussed above (§VIII.C.2), in my opinion POSAs would have been motivated and reasonably expected success to incorporate that Song functionality into Randall’s system, whereby Alice’s *first device is operable to identify Alice’s user identification on said first device by receiving a login and password from said first device.*

[0228] Thus, it is my opinion that Randall-Song meets Element [16A].

iii. Element [16B]: a first location is operable to be recorded of said user identification, based on a location of said first device after said user identification is identified on said first device,

[0229] As I discussed above (§VIII.A.5.a.ii, Element [1A]), Alice’s *first location is operable to be recorded of Alice’s user identification (in Alice’s i-Data), based on a location of her first device.* As I discussed above (§VIII.C.3.a.ii, Element [16A]), this occurs *after said user identification is identified on Alice’s first device.* *See* Song, 5:48-55 (“The personal device...prompt[s] for login information when the personal device 14 is activated.”).

[0230] Thus, it is my opinion that Randall-Song meets Element [16B].

iv. Element [16C]: a first map provided from the perspective of said first location and is operable of being displayed on said first device,

[0231] Alice's *first device* can “*display a map* of the area [Alice is] standing in.” Randall, p. 29. *See also supra* §VIII.A.5.a.iii (Element [1B]).

[0232] Thus, it is my opinion that Randall-Song meets Element [16C].

v. Element [16D]: said first location is operable to be provided to a third device not associated with said user identification,

[0233] As I discussed above (§VIII.A.5.a.ii, Element [1A]), Alice's *first location is operable to be provided* to Bob's device (*a third device*). Bob's device is *not associated with Alice's user identification* if Alice is not registered as an owner/user of Bob's device.

[0234] Thus, it is my opinion that Randall-Song meets Element [16D].

vi. Element [16E]: said user identification is operable to be identified on a second device by receiving said login and password from a second device,

[0235] As I discussed above (§VIII.C.2), Randall teaches that a user can be authenticated to access their own i-Data (and other users' information that they are authorized to view) from more than one device. Randall, [0054], [0067]. Therefore Alice's *user identification is operable to be identified on a second device* as well as the *first device*.

[0236] As I discussed above (§§VIII.C.1, VIII.C.2), Song’s teachings in Randall-Song implement this functionality by storing a record associating the “user name, password” and “identifier” of the device owner in association with all of that owner’s devices (Song, 8:18-47, FIG. 3), such that the same *login and password* is used to identify the user’s *user identification* on each device. And Song teaches to store the user’s same “user name” login information in association with devices owned by others that the user will use. Song, 9:30-40. Song further teaches to “cache[]” this login information on the associated device so the device “may use the locally stored information for authorization and verification related activities.” Song, 11:48-52, 5:48-59 (“The personal device...prompt[s] for login information when the personal device 14 is activated,” including “user name and password...for identifying [the] user....”), 5:60-63 (“both the personal device 14 and other personal devices 14 may be selectively utilized to receive login information”).

[0237] Thus, in Randall-Song, when Alice is using a second device of her own or borrowing someone else’s device, Alice’s *user identification* is operable to be identified on a second device by receiving said login and password from a second device the same way as on the *first device* that I discussed above (§VIII.C.3.a.ii, Element [16A]).

[0238] Thus, it is my opinion that Randall-Song meets Element [16E].

vii. Element [16F]: a second location is operable to be recorded of said user identification based on a second location of said second device after said user identification is identified on said second device,

[0239] When Alice is using the *second device*, that device’s *second location is operable to be recorded of Alice’s user identification after said user identification is identified on said second device*, in the same manner that I discussed above (§VIII.C.3.a.iii, Element [16B]) for Alice’s location when she is using the first device. *See also supra* §VIII.A.5.a.ii (Element [1A]).

[0240] Thus, it is my opinion that Randall-Song meets Element [16F].

viii. Element [16G]: a second map provided from the perspective of said second location and is operable of being displayed on said second device,

[0241] When Alice is using the *second device*, she can use “Your map and then some” (Randall, p. 29) to display *a second map provided from the perspective of said second location*, in the same manner that I discussed above §VIII.C.3.a.iv (Element [16C]). *See also supra* §VIII.A.5.a.iii (Element [1B]).

[0242] Thus, it is my opinion that Randall-Song meets Element [16G].

ix. Element [16H]: said first location and said second location are different, and

[0243] In my opinion, POSAs would have understood that when Alice uses a *first device* and later switches to using a *second device*, she may use the devices at *different* locations (e.g., one at home, another at work, and/or another

while traveling). See Song, 14:22-30 (disclosing an example where user switches devices when “leav[ing] the office”), 1:47-52 (similar).

[0244] Thus, it is my opinion that Randall-Song meets Element [16H].

- x. **Element [16I]: said second location is operable to be provided a said third device not associated with said user identification.**

[0245] Alice’s *second device’s location* is operable to be provided to Bob’s *third device* in the same manner that I discussed above §VIII.C.3.a.v (Element [16D]). See also *supra* §VIII.A.5.a.ii (Element [1A]).

[0246] Thus, it is my opinion that Randall-Song meets Element [16I].

- b. **Claim 17: The system of claim 16, wherein said first device includes a first positioning system, said second device includes a second positioning system, said third device includes a third positioning system, said first location is determined, at least in part, based on said first positioning system, and said second location is determined, at least in part, based on said second positioning system.**

[0247] Randall teaches that any wireless device can use “**GPS**” to provide its “location” to the i-server as I discussed above (§VIII.A.5.a.ii, Element [1A]). Randall, p. 24 (“People tracking”). Thus, Alice’s *first* and *second devices* and Bob’s *third device* include GPS (global **positioning systems**) used to *determine* each device’s *location*.

[0248] Thus, it is my opinion that Randall-Song meets claim 17.

- c. **Claim 18: The system of claim 16, wherein said first location is provided to said third device based on an access permission of said first location to said third device provided by said identified user on said first device.**

[0249] Alice's *first location* is provided to Bob's *third device* based on an access permission Alice provides on her *first device*. *Supra* §VIII.A.5.a.ii (Element [1A]).

[0250] Thus, it is my opinion that Randall-Song meets claim 18.

- d. **Claim 19: The system of claim 16, wherein said first location is recorded on a server remote to said first device, second device, and third device.**

[0251] Alice's *first location* is recorded on the i-server, *remote* to the wireless devices as I discussed above (§VIII.A.5.c, claim 3). *Supra* §VIII.A.5.a.ii (Element [1A]).

[0252] Thus, it is my opinion that Randall-Song meets claim 19.

D. Ground 4: Claims 1 and 3-4 are Unpatentable Over Sheha in view of Wollrab

1. Discussion of Sheha (EX1005)

[0253] 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.

[0254] Sheha enables mapping, routing, and direction finding by allowing telephone devices—landline or mobile, such as cellphones or PDAs—to share their locations with other authorized landline or mobile devices. Sheha, 2:60-4:18, 10:66-11:9, 11:55-65. The mobile devices may report their positions (e.g., determined using GPS) to an online database and application server (“ODAS”) which stores them. Sheha, 10:5-16, 10:66-11:51, 7:19-23.

[0255] 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 obtain their respective location information. Sheha, 11:55-12:1.

[0256] 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.

[0257] For example, using Sheha's system, a mobile device may request a target mobile device's location through a phone call ("call embodiment") or "without having to initiate a telephone call" ("no-call embodiment") by "only specifying a telephone number." Sheha, 11:10-54, 11:55-58; *see also id.*, 12:1-7. If authorized, the requesting device receives the position from the ODAS, including displaying a map illustrating one or both mobile devices' locations and navigational information. Sheha, 9:23-39. Figure 3 (annotated below) illustrates an exemplary mobile-to-mobile system, showing connections between two mobile devices 18b-18c, such as cell phones or PDAs, and the ODAS, via a wireless network 22. Sheha, 10:66-11:35, FIG. 3.

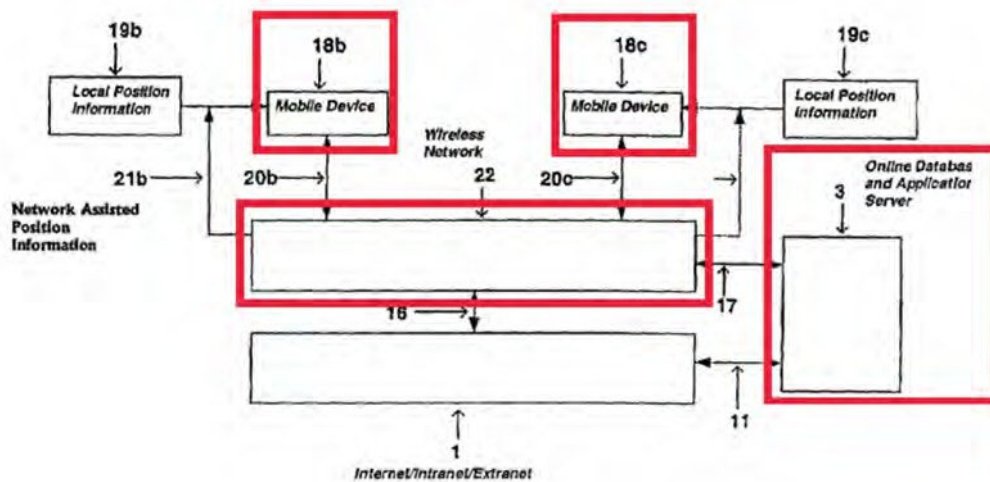


FIG. 3
Sheha, FIG. 3 (annotated)

[0258] FIG. 5 (below) illustrates a map displaying directions between the user's current location 33 and the target user's location 34, which can be displayed on mobile devices. Sheha, 4:52-58, 9:23-39.

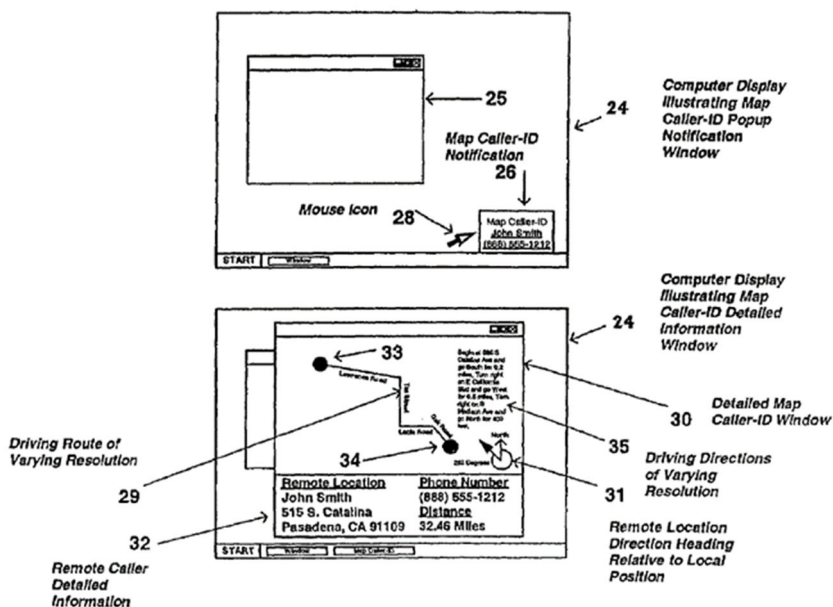


FIG. 5
Sheha, FIG. 5

2. Discussion of Sheha-Wollrab Combination

[0259] Sheha teaches that a “user[] can define a group of specific users that have access to” the user’s location, which the users in the group can request “without having to initiate a telephone call.” Sheha, 11:55-12:7. An “object” of Sheha’s system is “to determine position information and to pass that information *between a plurality* of unique users or applications on various devices.” Sheha, 3:4-10. As I discussed above (§VIII.A.2), Wollrab teaches that mobile device users may wish to view “the relative locations” of more than one other device user (e.g., “family, work, or other group”) “simultaneously relative to one another” in a “map image.” Wollrab, 4:40-54, 5:50-61. Based on Sheha’s and Wollrab’s

teachings, POSAs would have been motivated to implement Sheha's map to display locations of more than one target user whose locations the requesting user is interested in and authorized to access. In my opinion, POSAs would have reasonably expected success because Wollrab's functionality operates in the same context as Sheha's, that of mobile devices mapping each other's locations.

3. Mapping of Sheha-Wollrab Combination to Claims 1 and 3-4

a. Claim 1

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

[0260] Sheha discloses “a *system*...for providing real-time position information.” Sheha, Abstract. Thus, Sheha-Wollrab meets [1PRE].

ii. Element [1A]: a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred and after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device,

[0261] As I explain below, Sheha discloses *a first wireless telephone operable to provide a display screen after requesting to locate a second wireless telephone*. For example, “Map Caller-ID information about the destination telephone number can be transferred to the originating caller” for “display.” Sheha, 3:14-28.

[0262] Sheha teaches that a first wireless phone device may request the location of a target second wireless phone device: “if 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.” Sheha, 4:62-66; *see also* Sheha, 19:3-8 (“receiving, from the communication device of the first user, a request for position information of the second user,...said position information indicating a location of the communication device of the second user”).

[0263] After the system receives a position request, it queries the targeted mobile device to determine if the requesting mobile device has permission to receive the position information (*to locate the device*). Sheha, 5:21-32. Sheha also discloses that mobile devices can have privacy settings that allow the device to “prevent or limit other calling devices from obtaining position information,” and confirming the requesting device has permission to obtain the target device’s location information. Sheha, 5:38-48; *see also* Sheha, 10:17-26, 19:9-15 (“accessing privacy information of the second user, said privacy information of the second user identifying an authorized user group, ... determining whether the first user is a member of the authorized user group”). Sheha discloses “users can define a group of specific users that have access to this information” so “[w]hen a mobile device’s position information is requested, the system, based on privacy settings,

responds with the appropriate position information to the requesting user's device."

Sheha, 11:63-12:7.

[0264] Sheha discloses displaying a Map Caller-ID screen in FIG. 5, which displays location information of a remote wireless phone. Sheha discloses that this location information can be displayed directly on a mobile phone, explaining that "a map and address of the destination telephone number can be displayed on the mobile telephone." Sheha, 4:52-58.

[0265] Thus, it is my opinion that the Sheha-Wollrab combination meets Element [1A].

iii. Element [1B]: wherein said display screen includes a map provided with respect to the location of said first wireless telephonic device,

[0266] Sheha discloses displaying a Map Caller-ID screen in FIG. 5, which displays location information of a remote wireless phone. Sheha discloses that this location information can be displayed directly on a mobile phone, explaining that "[i]f the mobile telephone is connected to a position determination system, the mobile telephone would be able to provide navigational information, such as route information in the form of real-time driving directions, or else a *map* and address of the destination telephone number can be *displayed* on the mobile telephone." Sheha, 4:52-58. Figure 5 (which I have annotated below) shows the

map displaying the locations of the target and requesting devices (labels 33-34).

Sheha, 9:23-28.

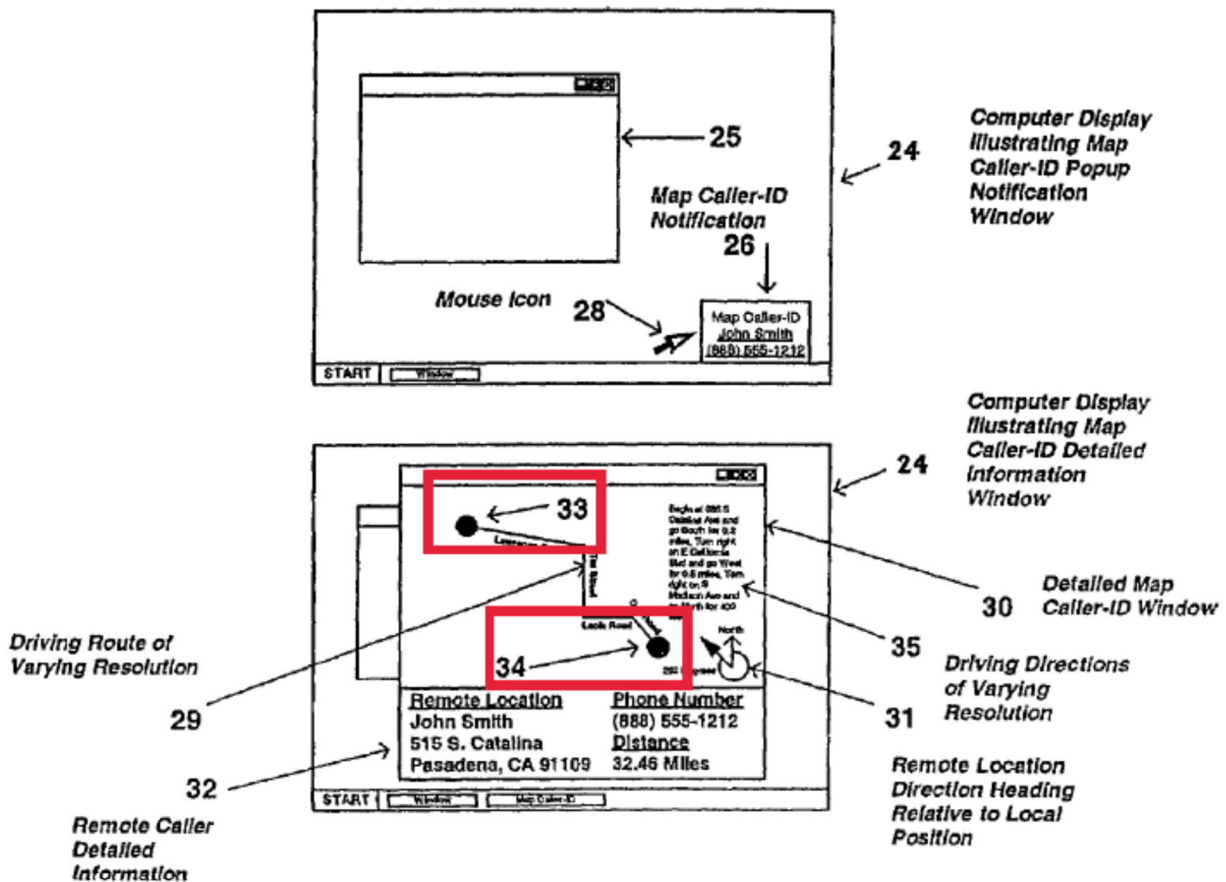


FIG. 5

Sheha, FIG. 5 (annotated)

[0267] While Figure 5 is presented in the context of an example involving two landline telephones, the same information is provided in the mobile-to-mobile context, which Sheha explains is “similar to a landline-to-mobile

application.” Sheha, 4:59-5:20, 4:13-18, 11:36-12:7 (“In one embodiment, prior to the destination mobile device 18c receiving the telephone call from the originating mobile device 18b, the wireless network sends the position information, obtained from the ODAS 3, in the form of a Map Caller-ID, as previously described.”).

[0268] I understand that in a previous IPR involving the ’218 patent, Mullen argued that Sheha does not teach showing a *map* from the perspective of the requesting device. In my opinion, Mullen was incorrect. Sheha teaches that the “Map Caller-ID information window...display[s] 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.” Sheha, 9:23-28. Thus, the map displays **both** devices’ locations, including that of the device providing the *display screen*, and the *map is provided with respect to the location of that first wireless telephonic device*.

[0269] Sheha further teaches that “**both** the originating and destination mobile device receive the Map Caller-ID information,” which is the “Map Caller-ID information window” of FIG. 5 “as previously described.” Sheha, 11:36-44, 9:23-39. This allows “**each** mobile device” to be “provid[ed] real-time driving directions and route information” based on “the other’s position information.” Sheha, 11:36-54, 4:59-5:20 (“[T]he destination remote mobile device receiving the telephone call obtains the position information from the calling mobile device,

based on permission settings of the calling local mobile device, for the performance of various operations, such as *mapping* and calculating driving directions,” *and* “the system would request the position information from the remote mobile device and forward it back to the local mobile device” so that it can “navigate in real-time to the remote mobile device.”). The way Sheha describes providing this navigation/driving/route information in all scenarios is via the Map Caller-ID exemplified in FIG. 5. Sheha, 9:23-39 (“Map Caller-ID information window...provide[s] a driving route...and driving directions” and other navigation information), 10:44-65 (“All of the Map Caller-ID information provided in the landline-to-mobile example is similar...except the mobile device’s 18a position can change,” so the “map” provided to “both” devices “display[s] driving direction information as the mobile device changes its position.”), 11:36-54 (mobile-to-mobile example uses “Map Caller-ID, as previously described” for “providing real-time driving directions and route information” to both mobile devices 18b-18c).

[0270] Thus, Sheha teaches that both mobile devices 18b and 18c can display a Map Caller-ID showing both devices’ locations, with the displayed map at each device showing the other device as the remote location and providing navigation information to the other device’s location.

[0271] Additionally, POSAs would have understood Sheha to teach or at least fairly suggest that the same map display of navigation information

(exemplified in FIG. 5) can be provided on a requesting mobile device in the scenario without a phone call. Sheha, 4:59-5:3 (“[I]f a mobile device user specifies a telephone number of another position-enabled mobile device,” it is provided the other mobile device’s “position information” so it can “navigate in real-time to the remote mobile device.”), 5:21-46 (“In order to determine the position information of a remote landline or wireless device in order to obtain driving directions to that device...a user can initiate a position request by entering a unique identification token.... The server queries the remote party of the position request for permission on whether the position request can be granted.... If [permission is] granted, both parties have access to each other’s position information, which can be used for real-time driving directions or collaboration purposes.”), 11:55-12:7 (teaching that the no-call example only differs from the phone-call examples in how the device “request[s] position information,” not in how that information is displayed). In that scenario also, the *display screen includes a map provided with respect to the location of said first wireless telephonic device* that made the position request, by displaying the local (requesting) device’s location as well as the remote (target) device’s location.

[0272] Thus, it is my opinion that the Sheha-Wollrab combination meets Element [1B].

iv. **Element [1C]:** said display screen includes indicia on said map representative of a first location,

[0273] For the reasons I discussed above §VIII.D.3.a.iii (Element [1B]), Sheha's *display screen includes indicia on said map representative of a first location* of the remote mobile device (i.e., the other device than the device providing the display). In the example illustrated in Sheha's Figure 5 (which I have annotated below), *indicia 33* represents a *first location*.

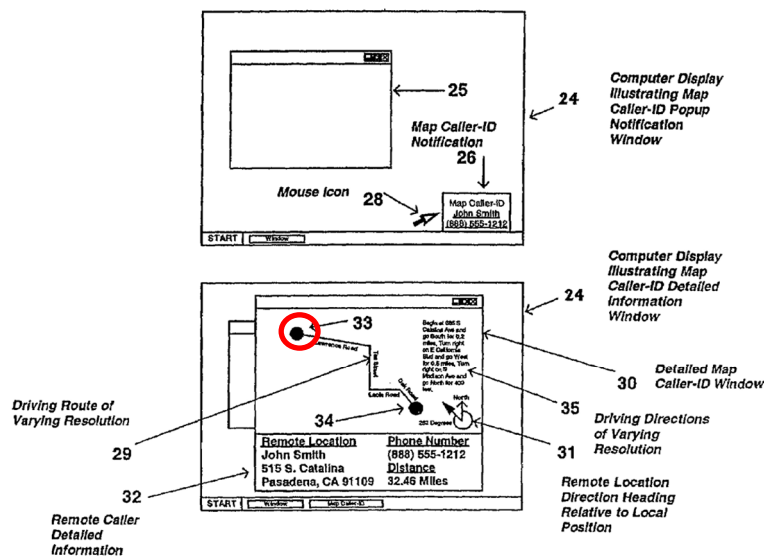


FIG. 5
Sheha, FIG. 5 (annotated)

[0274] Thus, it is my opinion that the Sheha-Wollrab combination meets Element [1C].

v. Element [1D]: said display screen includes indicia representative of a second location obtained from said third wireless telephonic device,

[0275] I understand that in a previous IPR involving the '218 patent, the Board preliminarily interpreted Element [1D] (together with Element [1C]) to require that the display screen simultaneously includes both indicia representative of the first location and indicia representative of the second location. I further understand that the Board preliminarily found that Sheha teaches displaying the location of one target device on the display screen along with the location of a caller (i.e., first and second wireless telephonic devices), but does not teach displaying the locations of second and third devices simultaneously. As I explain below, the combination of Sheha and Wollrab render that functionality obvious.

[0276] As I discussed above (§VIII.D.2), it would have been obvious to POSAs in view of Sheha's and Wollrab's combined teachings to implement Sheha's system to allow its map display to display on a requesting user's device the locations of more than one target user whose locations the requesting user is interested in and is authorized to access. Sheha teaches that an "object" of Sheha's system is "to determine position information and to pass that information between a plurality of unique users...on various devices." Sheha, 3:4-10. Wollrab teaches techniques to aid "families or other groups to plan meetings" using their "wireless telephone[s] to display "the relative locations" of "members of" the "family, work,

or other group” “simultaneously relative to one another” on a “graphic map.” Wollrab, 1:11-17, 4:40-54, 5:50-61. As I discussed above (§VIII.A.2; §VIII.A.5.a.v, Element [1D] in Ground 1), Wollrab teaches to “display a map image” on each group member’s device “depicting the relative locations of all members/PDA devices within” the group as “locations 44-1 through 44-5...shown simultaneously relative to one another” as “symbols.” Wollrab, 4:43-58, FIG. 4B (annotated below—location 44-1 of exemplary *first wireless telephonic device* annotated in [blue], location 44-2 of exemplary *second wireless telephonic device* annotated in [red], location 44-3 of exemplary *third wireless telephonic device* annotated in [green]).

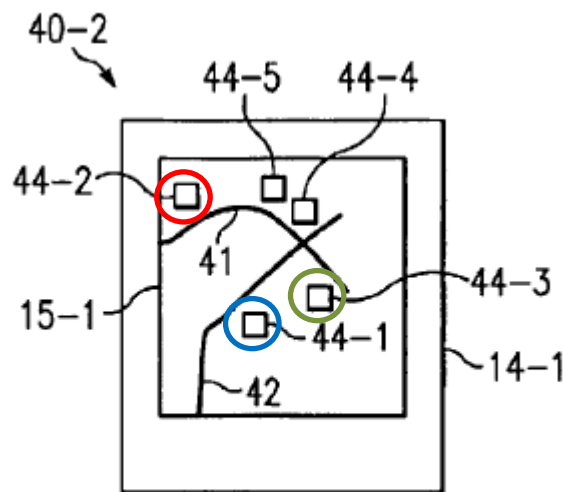


FIG. 4B

Wollrab, FIG. 4B (annotated)

[0277] Based on these teachings, POSAs would have been motivated and reasonably expected success using only ordinary skill and software programming to modify Sheha's map display (as exemplified in Sheha's FIG. 5) to display not only the locations of the displaying device and one other device (elements 33-34), but also one or more additional devices (e.g., *a second location obtained from a third wireless telephonic device*).

[0278] Thus, it is my opinion that the Sheha-Wollrab combination meets Element [1D].

vi. Element [1E]: said display screen includes a distance from said first wireless telephonic device to said first location, and

[0279] Sheha discloses displaying *a distance* from the requesting mobile device to the location of the target device. Sheha states the display window of the requesting device displays "driving direction *distance* information for the optimal route" between the two devices. Sheha, 9:30-39; *see also id.*, 7:44-51. Sheha shows an example display in FIG. 5 (which I annotated below), which *includes a distance* of "32.46 Miles."

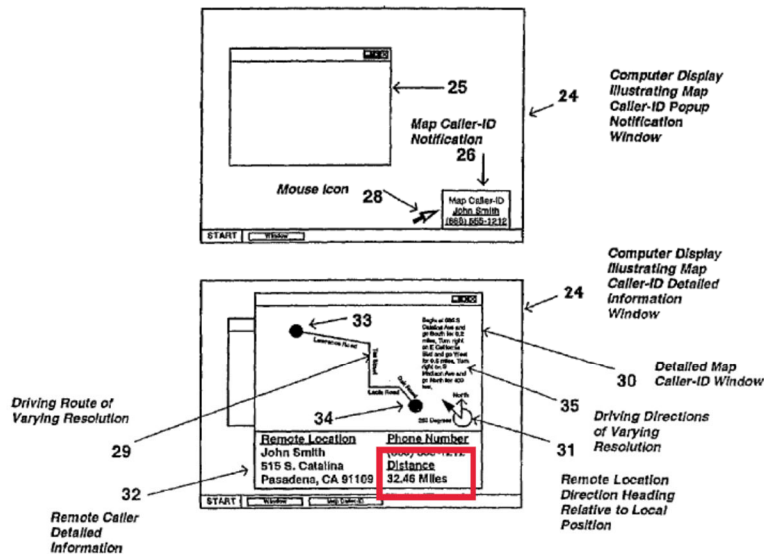


FIG. 5
Sheha, FIG. 5 (annotated)

[0280] Thus, it is my opinion that the Sheha-Wollrab combination meets Element [1E].

vii. Element [1F]: said display includes an address associated with said first location.

[0281] Sheha discloses displaying an address associated with the target device's location: "the display unit on the destination telephone 8 can display the caller's name, telephone number, **address**, and can provide a map illustration of varying resolutions configured by the user through the telephone network." Sheha, 7:44-48, 9:34-39 (Map Caller-ID "window 30 can display all of the identification information 32 of **both** the originating and destination users, such as **addresses** and telephone numbers"), FIG. 5 (annotated below).

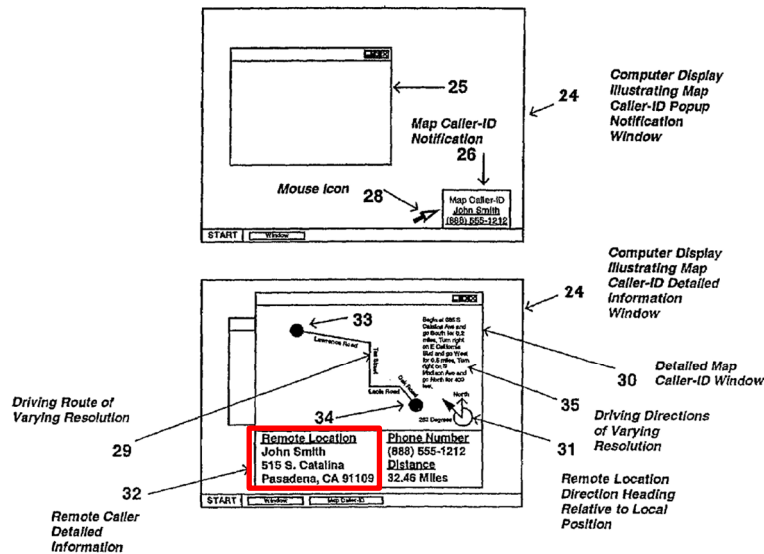


FIG. 5
Sheha, FIG. 5 (annotated)

[0282] Thus, it is my opinion that the Sheha-Wollrab combination meets Element [1F].

- b. **Claim 3: The system of claim 1, wherein said permission is stored on a server remote to said second wireless telephonic device, said third wireless telephonic device, and said first wireless telephonic device.**

[0283] Sheha's ODAS ("online database and application *server*"—Sheha, 7:21-23) is *remote to the wireless telephonic devices*, as shown in Sheha's Figure 3 (which I have annotated below).

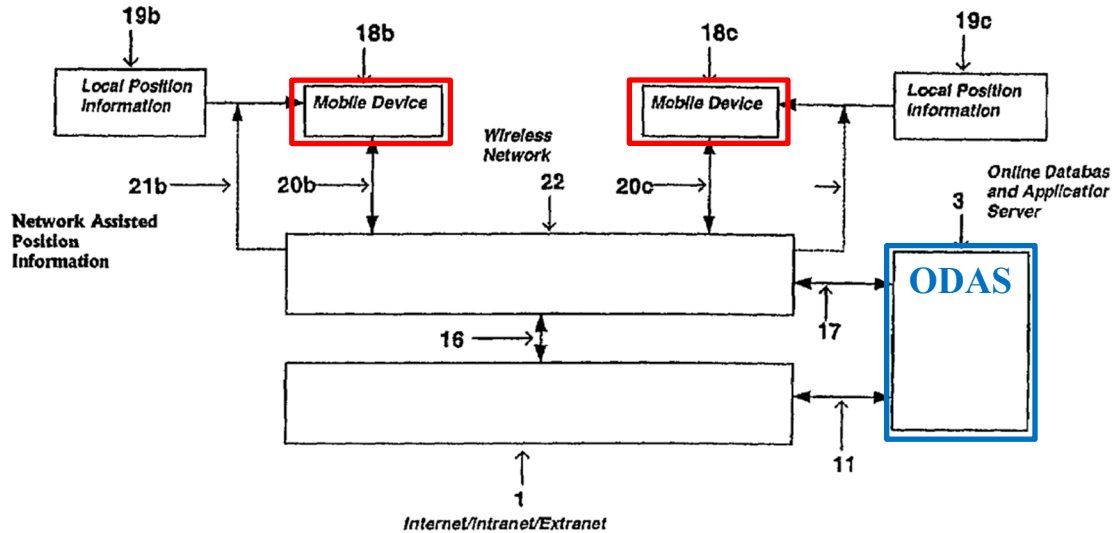


FIG. 3
Sheha, FIG. 3 (annotated)

[0284] Sheha teaches that in both landline and mobile scenarios, “users can define a group of specific users that have access to” the user’s location information “by utilizing a group database and authorization and authentication protocols to identify users that are permitted to access this information.” Sheha, 11:55-12:7; *see supra* §VIII.D.3.a.ii (Element [1A]).

[0285] Sheha teaches embodiments where the ODAS implements the “authorization and authentication protocols” and the “group database” described in 11:63-12:7 for storing permissions for specific users. *See* Sheha, 3:4-13 (“networked server system utilizing authentication and authorization procedures”), 4:8-18 (“online database and/or networked authentication and authorization

connection server”), 7:21-23 (“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.

[0286] Alternatively, implementing the group database (including *said permission*) 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. My testimony regarding the POSA’s background knowledge in this regard is corroborated by evidence as discussed below:

[0287] Randall (EX1007) describes interactions between mobile devices and a database at a server. Randall, [0029]-[0030] (“An application resident on the device queries and receives data from the remote, extensible database.”). Randall also describes that a database hosted by a server can be used for determining whether a requesting user has access rights. Randall, [0046] (“internet servers hosting extensible databases”), [0047] (“[t]he database can define which entities can read different fields; Alice can therefore give Bob rights to read only certain fields in her database.”), [0052] (“[t]he ADS system includes additional access control mechanisms, such as checking the identity of the calling device at the server”). Randall discloses that the “ADS System [] includes an entire contacts database, referred to as a ‘Universe,’” which “is the list of all the

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

[0288] Friedman (EX1015) describes a server monitoring a location of a user. Friedman, 12:60-65. Friedman also describes that a user can store their access right preferences on the server. Friedman, 13:10-21 (“User A’s preferences with respect to location tracking may be stored in User A’s configuration profile 1012 on the portal server 110...”). Friedman therefore also corroborates that it was within a POSA’s background knowledge to implement a group database and

utilize it at a sever and that a POSA would have had a reasonable expectation of success doing so in the Sheha-Wollrab combination.

[0289] 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, 6:22-43; Sandhu, 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 sever and that a POSA would have had a reasonable expectation of success doing so in the Sheha-Wollrab combination.

[0290] Darling (EX1022) describes a “server stor[ing] permission information indicating whether the location information for [a] user is available” to other user(s). Darling, 3:1-5. Specifically, Darling describes “[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.” Darling, 3-5. Darling therefore also corroborates that it was within a POSA’s background knowledge to implement a group database and utilize it at a sever and that a POSA would have had a reasonable expectation of success doing so in the Sheha-Wollrab combination.

[0291] Also, with respect to any privacy settings set locally at the target device, POSAs would have understood that an obvious implementation was to store those settings *on the server* after verifying them by querying the device (Sheha, 4:64-66), so the server can then apply them to determine whether to release the device's location to a requesting user.

[0292] Thus, it is my opinion that the Sheha-Wollrab combination meets claim 3.

- c. **Claim 4: The system of claim 1, wherein said third wireless device associates a second permission with said second location to permit said first wireless telephonic device to access said second location.**

[0293] As I discussed above (§VIII.D.3.a.ii, Element [1A]), Sheha discloses a system wherein a user can have privacy settings allowing the device to “prevent or limit other calling devices from obtaining position information.” Sheha, 5:38-48; *see also* Sheha, 10:17-26, 18:65-19:19. Thus, any wireless device in Sheha's system can establish privacy settings, whether at the wireless device or stored in the ODAS, permitting the requesting device to access its location.

[0294] Thus, it is my opinion that the Sheha-Wollrab combination meets claim 4.

E. Ground 5: Claims 6-9 and 11-14 are Unpatentable over Sheha in view of Wollrab and Obradovich

1. Discussion of Sheha-Wollrab-Obradovich Combination

[0295] In my opinion, a POSA would have been motivated to modify the Sheha-Wollrab system to enhance the amount of navigation information available to users, such as by including travel time between locations as Obradovich teaches. *See supra* §VIII.A.3. In my opinion, a POSA would have reasonably expected success determining and displaying travel times in Sheha’s system, as described in Obradovich and known in POSAs’ background knowledge, given that both systems obtain the same location information necessary for such a calculation, so it would be a simple operation for Sheha’s system to perform.

2. Mapping of Sheha-Wollrab-Obradovich Combination to Claims 6-9 and 11-4

a. Claim 6

i. Preamble [6PRE]: A system comprising:

[0296] Like claim 1, claim 6’s preamble only recites “A system comprising.” 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 Sheha-Wollrab-Obradovich meets the preamble. Sheha-Wollrab-Obradovich meets Element [6PRE] for the same reason Sheha-Wollrab provides a *system*, as I discussed above for Element [1PRE] (§VIII.D.3.a.i). As explained in this section

below, in my opinion a POSA would have understood that the Sheha-Wollrab-Obradovich combination meets all limitations of claim 6 of the '218 patent.

ii. Element [6A]: a wireless telephonic device operable to provide a display screen after a request from said wireless telephonic device for access to a first location of a first wireless device,

[0297] Element [1A] recites “*a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred and after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device.*” Element [6A] recites essentially the same functionality recited in Element [1A] except does not recite “*provid[ing] a display screen*” is “*after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device.*” Thus, it is my opinion that the Sheha-Wollrab-Obradovich combination meets Element [6A] for the same reasons the Sheha-Wollrab combination meets Element [1A], as discussed above (§VIII.D.3.a.ii).

iii. Element [6B]: wherein said display screen includes a map provided from a perspective of said wireless telephonic device,

[0298] Element [6B] recites essentially the same functionality as Element [1B], which recites “*wherein said display screen includes a map provided*

with respect to the location of said first wireless telephonic device.” Thus, it is my opinion that the Sheha-Wollrab-Obradovich combination meets Element [6B] for the same reasons the Sheha-Wollrab combination meets Element [1B], as discussed above (§VIII.D.3.a.iii).

iv. Element [6C]: said display screen includes indicia on said map representative of said first location,

[0299] Element [6C] recites essentially the same functionality as Element [1C], which recites “*said display screen includes indicia on said map representative of a first location.*” Thus, it is my opinion that the Sheha-Wollrab-Obradovich combination meets Element [6C] for the same reasons the Sheha-Wollrab combination meets Element [1C], as discussed above (§VIII.D.3.a.iv).

v. Element [6D]: said display screen includes indicia on said map representative of a second location obtained from a second wireless device, and

[0300] Element [6D] recites essentially the same functionality as Element [1D], which recites “*said display screen includes indicia representative of a second location obtained from said third wireless telephonic device.*” Thus, it is my opinion that the Sheha-Wollrab-Obradovich combination meets Element [6D] for the same reasons the Sheha-Wollrab combination meets Element [1D], as discussed above (§VIII.D.3.a.v).

vi. Element [6E]: said display screen includes a distance from said wireless telephonic device to said first location,

[0301] Element [6E] recites essentially the same functionality as Element [1E], which recites “*said display screen includes a distance from said first wireless telephonic device to said first location.*” Thus, it is my opinion that the Sheha-Wollrab-Obradovich combination meets Element [6E] for the same reasons the Sheha-Wollrab combination meets Element [1E], as discussed above (§VIII.D.3.a.vi).

vii. Element [6F]: said display screen includes a compass,

[0302] Sheha's *display screen includes a compass*, shown in FIG. 5 (which I have excerpted and annotated below) as a "North"-pointing arrow with element 31:

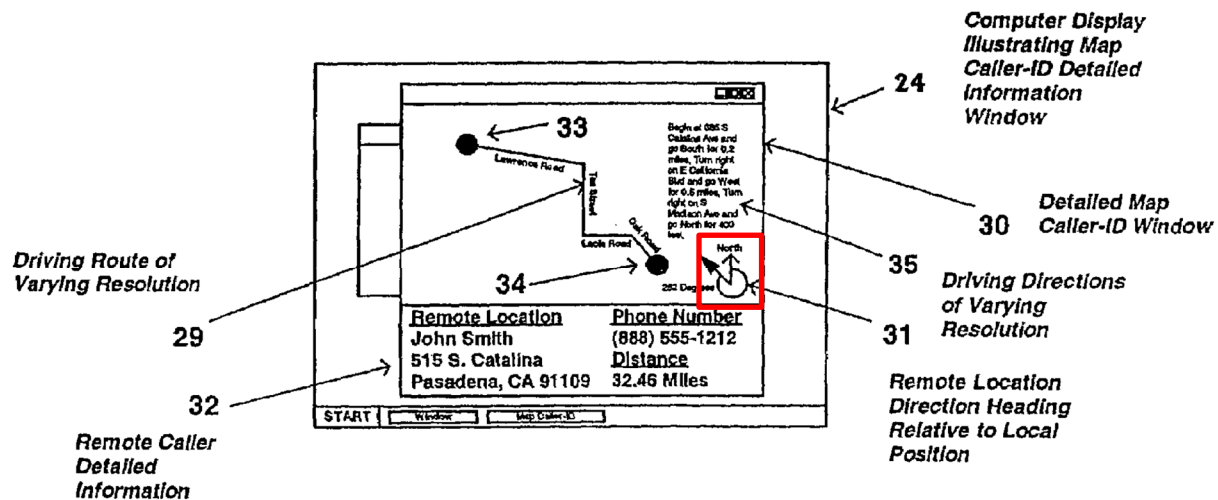


FIG. 5
Sheha, FIG. 5 (annotated)

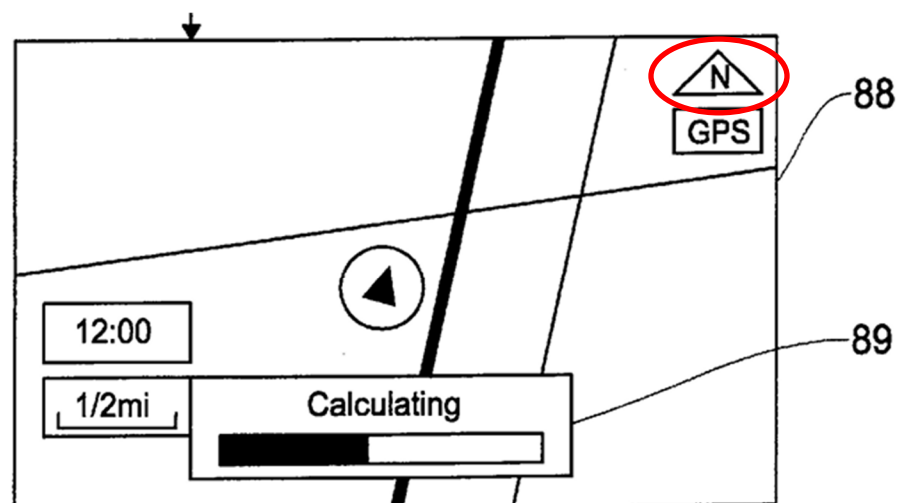
In my opinion, POSAs would have found it obvious that the illustrated "North" arrow (annotated above) would update to continue pointing north (e.g., rotate) as the mobile device changes orientation, as that was a conventional way to display a compass on a digital map. My opinion in this regard is corroborated by EX1072

(“Johnson”) at Abstract, FIGs. 2A-2D, 1:41-53, 3:56-5:20, 6:6-13, as I discussed above (§VIII.A.5.f.vii, Element [11F]).

[0303] Obradovich also teaches to display a compass, as I discussed above (§VIII.A.5.f.vii). It was also well-known, conventional background knowledge to *include a compass* in the map *display screen*. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed below.

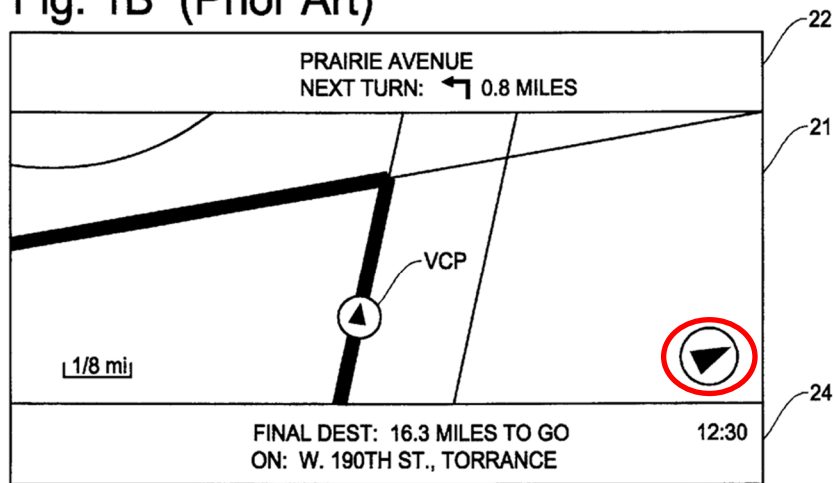
[0304] Wako (EX1025) illustrates in Figure 12C (annotated below) a display screen for a “navigation system,” which provides a graphic that POSAs would understand is a compass (annotated below) that points North. Wako, 7:25-33 (“a north pointer N...shown in the locator map screen”); *see also* Wako, FIG. 1B (annotated below to highlight a prior art display screen with a compass), 2:6-8 (“north pointer NP” is “illustrated on the display screen” of FIGs. 1A-1B).

Fig. 12C



Wako, FIG. 12 (annotated)

Fig. 1B (Prior Art)



Wako, FIG. 1B (annotated)

[0305] Tobin (EX1041) in Figure 1C (annotated below) shows a “graphical user interface for use with [a] user device,” with a “display screen” that shows a “compass indicator 133” (annotated below). Tobin, [0028].

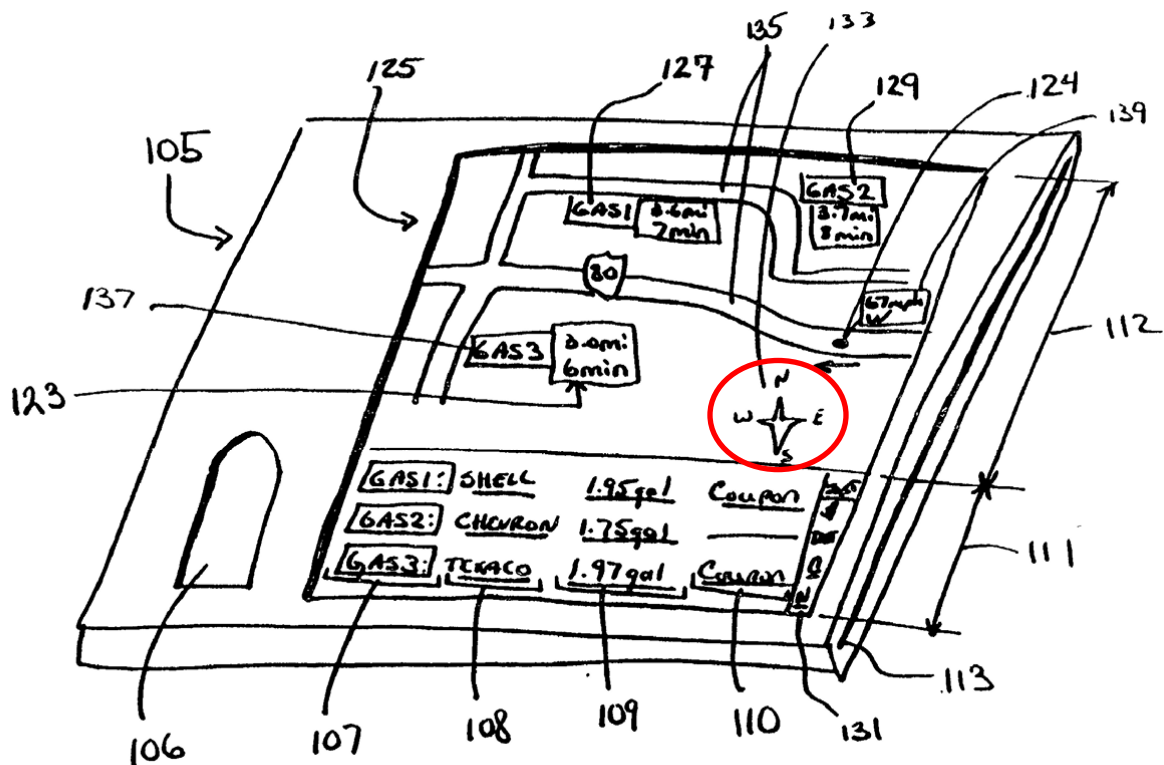


FIG. 1C

Tobin, FIG. 1C (annotated)

[0306] Thus, it is my opinion that the Sheha-Wollrab-Obradovich combination meets Element [6F].

viii. Element [6G]: said display screen includes a directional arrow representative of the direction of said first location with respect to the location of said wireless telephonic device, and

[0307] Sheha's display screen includes a directional arrow representing the direction of the remote device's location with respect to the requesting device's location. Sheha, 7:44-51, 9:30-39. The Map Caller-ID

“display[s] remote location direction heading information relative to local position information 31,” shown as *a directional arrow* pointing north-west toward the “remote location” 33 in Figure 5 (which I have annotated below). Sheha, 9:30-32.

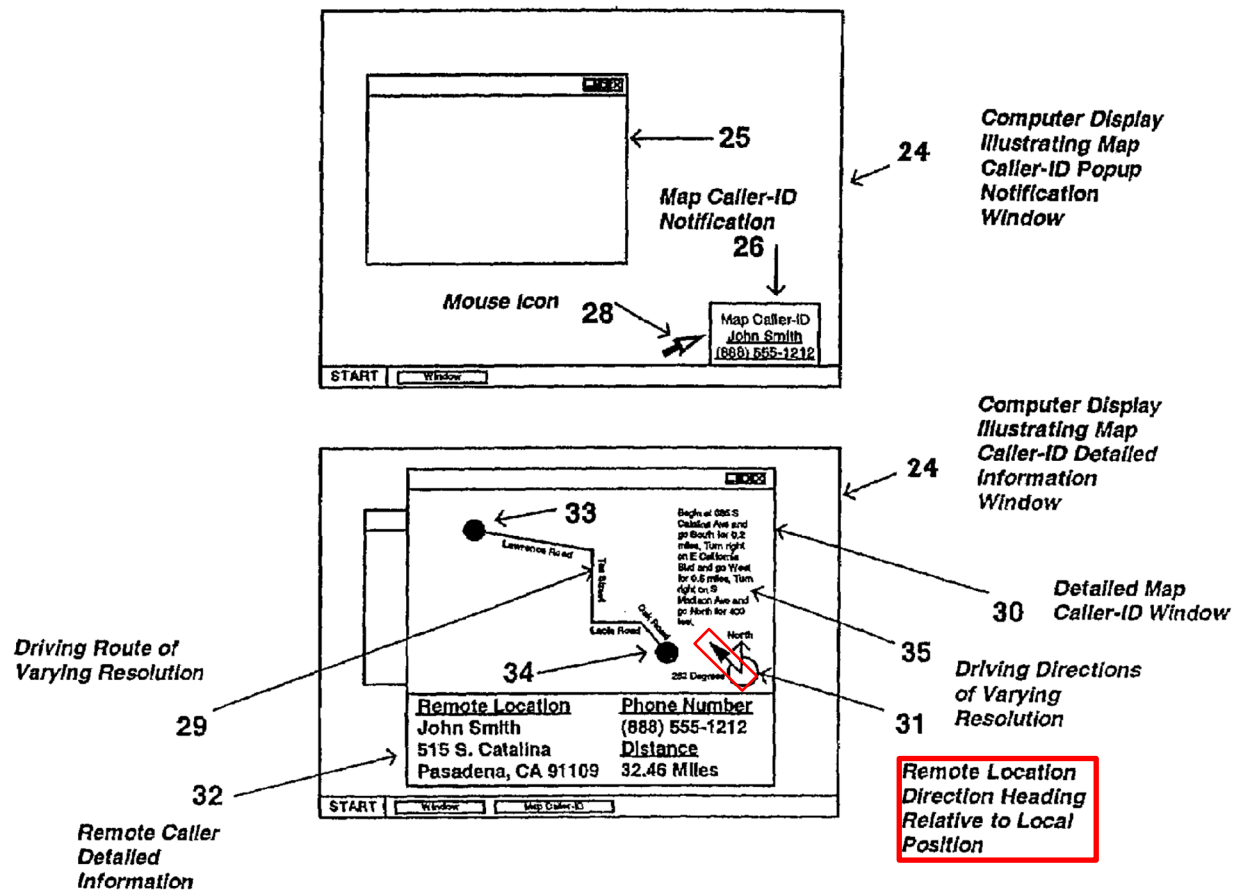


FIG. 5
Sheha, FIG. 5 (annotated)

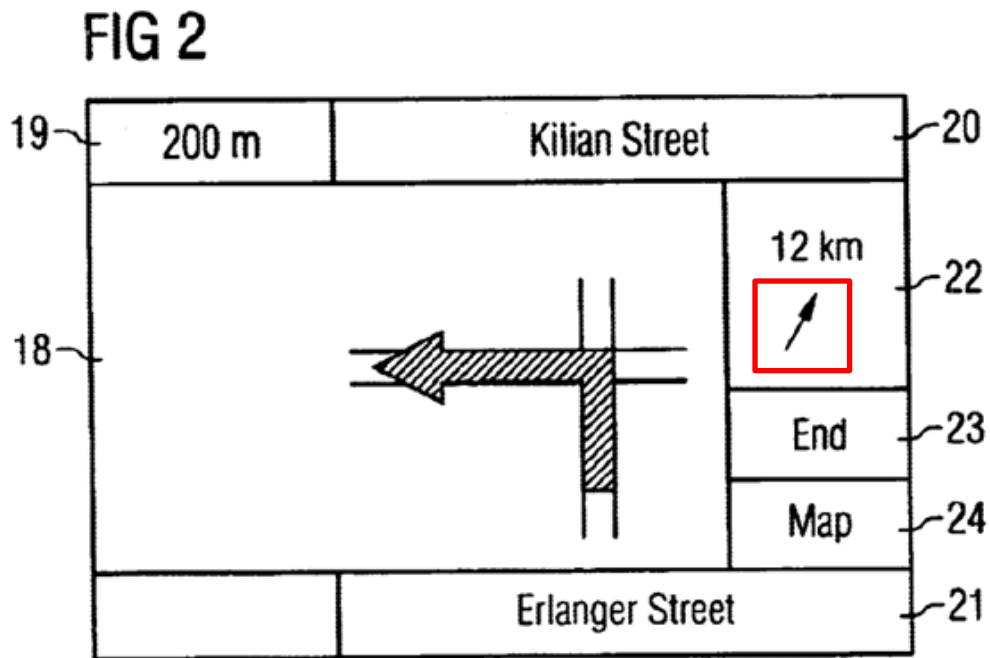
[0308] I have been informed by counsel that in a prior proceeding Mullen argued that the arrow in Sheha’s FIG. 5 points toward the caller (33), and

so, according to Mullen, Sheha does not describe displaying a “directional arrow” in the direction of the called device (34) from the perspective of the caller (33). It is my opinion that Mullen was incorrect. As I discussed above with respect to Element [1B] (§VIII.D.3.a.iii), Sheha teaches (or at minimum renders obvious) that **both** devices display a Map Caller-ID showing **both** devices’ locations, and the Map Caller-ID displayed on each device is from the perspective of that (local) device providing directions to the other (remote) device. Thus, the Map Caller-ID displayed on the calling device will have a “remote location direction heading” arrow pointing toward the called device. Additionally, as I also discussed above with respect to Element [1B] (§VIII.D.3.a.iii), Sheha teaches (or at minimum renders obvious) that in the no-call scenario, the requesting device displays a map with directions to the target device’s location, which will likewise have a “remote location direction heading” arrow pointing toward the target device.

[0309] It was also well-known, conventional background knowledge to *include* in the map *display screen a directional arrow representative of the direction of the destination with respect to* the device’s current position. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed below.

[0310] Deworetzki (EX1068) describes “a navigation system for a land vehicle having a measuring arrangement for supplying position, **direction** and/or

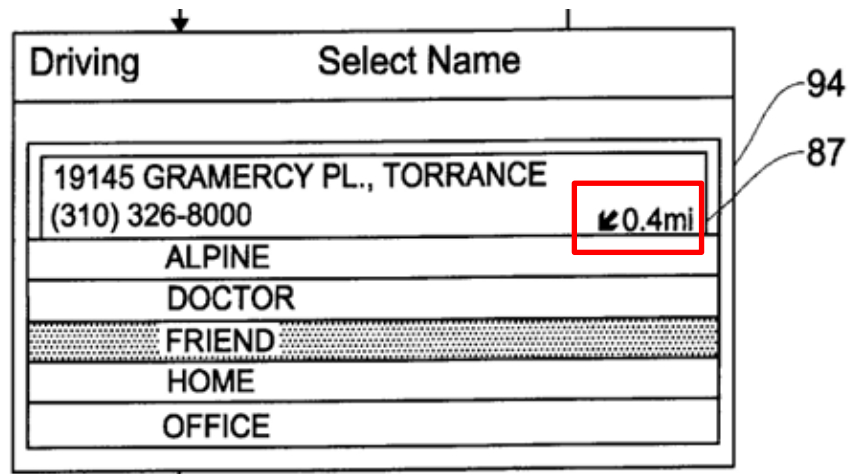
distance data.” Deworetzki, Abstract. As shown in FIG. 2 of Deworetzki (annotated below), “various information is presented to the driver in various areas of the picture” (Deworetzki, 4:55-57) including “[i]n an area 22 on the right of the picture, the distance to the destination (12 km) is shown by an **arrow** indicating the direction of the destination.” Deworetzki, 4:64-66.



Deworetzki, FIG. 2 (annotated)

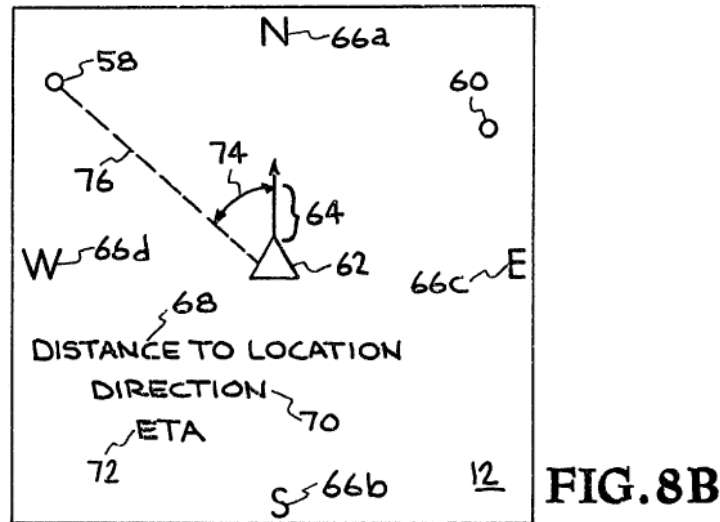
[0311] Wako (EX1025) describes a “navigation system for displaying information necessary for guiding a driver of a vehicle.” Wako, Abstract. As shown in FIG. 12B of Wako (annotated and excerpted below), “[t]he ‘Select Name’ menu 94 includes an address information box 87 which shows an address, phone number, **a direction by an arrow**, and a distance to location of the name highlighted in the name list.” Wako, 12:60-63.

Fig. 12B



Wako, FIG. 12B (annotated and excerpted)

[0312] Mura-Smith (EX1067) discloses a mobile device that “display navigation information” on a “display screen,” which includes various information including “Distance to Destination” – which “is the distance ‘as the crow flies...to a selected location” – and “Direction” – which “recites the direction in which the portable unit 10 is heading.” Mura-Smith, 8:45-57, FIG. 8B (copied below). Mura-Smith’s display screen further display “a dotted line 76 [that] extends...to the selected location or destination” and “indicates the most expedient path as the crow flies to the destination” and “[c]ross track error indicia 74,” which “indicates the difference between the current heading...and the most expedient heading indicated by the dotted line.” Mura-Smith, 8:57-9:2.



Mura-Smith, FIG. 8B

Thus, it is my opinion that the Sheha-Wollrab-Obradovich combination meets Element [6G].

- ix. **Element [6H]: a determination is operable to be made to provide on said wireless telephonic device for a travel time from said first location to said wireless telephonic device.**

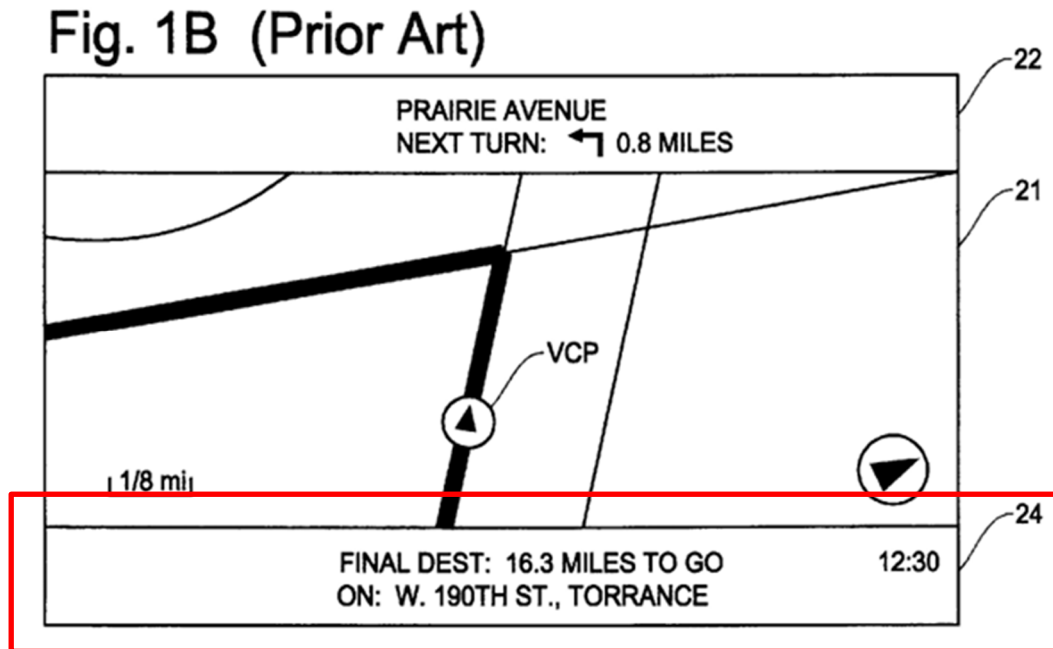
[0313] Sheha discloses “providing real-time location information, maps, routing, and direction finding.” Sheha, 1:16-22. Further, Sheha discloses providing “the calculation of position and route information, such as driving directions, as well as the ability to provide azimuth, elevation, altitude, altitude difference, line-of-sight (LOS) distance, and curved earth LOS distance measurements, between the local and remote positions calculated from the position information.” Sheha, 3:29-37. A POSA would have known this information could be used to calculate a travel time and would have been motivated to provide a

travel time as being standard navigational information a user would be interested in.

[0314] To the extent Sheha does not expressly disclose determining a travel time, Obradovich discloses determining and displaying a travel time between locations. Obradovich, 2:60-63, 22:55-65; FIG. 47. Obradovich states “[t]he PCD therefore is able to make use of the traffic speed information and the distance information to determine travel times for the various route and route alternative segments. Real time calculation and *display* of segment *travel times* accordingly allows the PCD user to accurately determine and estimate travel times to particular destinations over a plurality of different roads and road segments.” Obradovich, 22:47-54. “[T]he process determines travel times for each of the route segments; and the route as a whole.” Obradovich, 22:62-65, 8:18-22 (“arrival time estimates can be included.”). A POSA would have been motivated to include determination and display of the travel time from the requesting device to the location of the target device with reasonable expectation of success to improve the quality of available navigation information to the requestor. *Supra* §VIII.E.1.

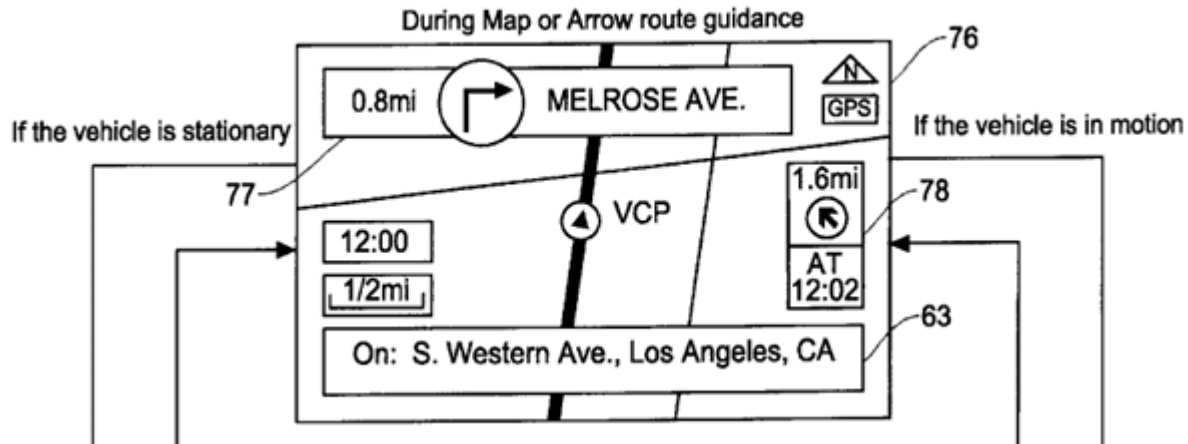
[0315] It was also well-known, conventional background knowledge to *include* in the map *display screen* “an estimated *time* to reach the final destination.” Wako, 2:12-34. My testimony regarding POSAs’ background knowledge in this regard is corroborated by several references, as discussed below.

[0316] Wako (EX1025), in its background section, discloses as prior art “an information box 24 at the bottom of the *display screen* includes information regarding...an estimated *time* to reach the final destination,” as shown in Wako’s Figure 1B (annotated below). Wako, 2:12-34, FIG. 1B (annotated below).



Wako, FIG. 1B (annotated)

[0317] Wako similarly describes a “route guidance screen 76 further includ[ing] an information box 78 which shows a distance to the final destination and an anticipated time to reach the final destination,” as shown in Wako’s Figure 7 (excerpted below). Wako, 9:8-28, FIG. 7 (excerpted below).



Wako, FIG. 7 (excerpt)

[0318] Tobin (EX1041) describes a “graphical user interface for use with user device 105.” Tobin, [0028], FIG. 1C (below). Tobin describes “the distance and *time* information particular to each service vendor is shown in a small data box adjacent to the service vendor logo. For example, data box 123 displays the real-time *time* and distance information for service vendor 137, which is a Texaco™ station. The time information displays the estimated remaining travel *time*, calculated by dividing the approximate distance separating the Texaco™ station from user device 105 by the speed of user device 105.” Tobin, [0028], FIG. 1C.

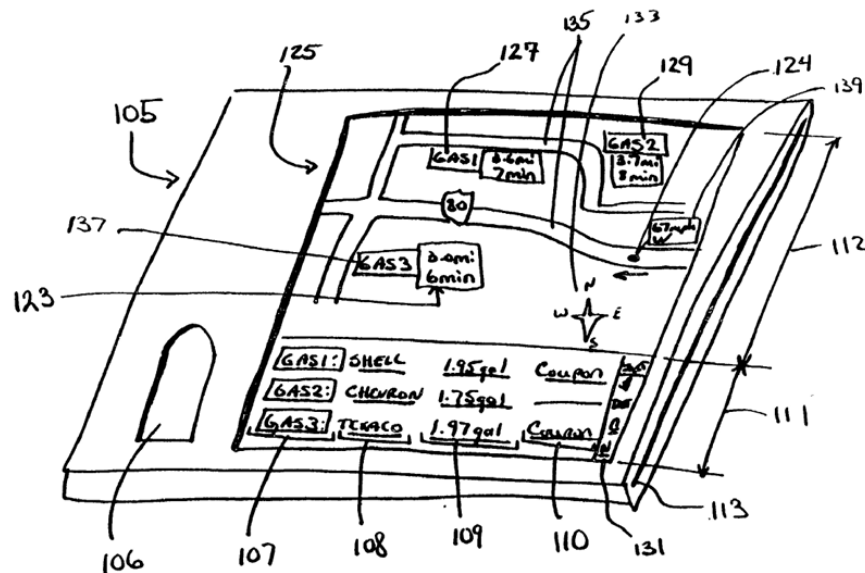


FIG. 1c
Tobin, FIG. 1C

[0319] I have been informed by counsel that in a prior proceeding Mullen argued that POSAs would not have incorporated the allegedly complex “travel time” system of Obradovich that involves remotely-positioned “condition reporting devices” sending information to an allegedly unique device that Obradovich calls the “PCD,” or “Personal Communication Device.” It is my opinion that Mullen’s argument was incorrect. The combination of Sheha’s and Obradovich’s teachings need not use “a unique device that Obradovich calls the ‘PCD’”—POSAs would have understood Sheha’s mobile devices to be capable of providing travel time with only modified data and computer programming well within the POSA’s skill. And POSAs would have understood that applying to Sheha’s system Obradovich’s general teaching to display a travel time for the route

from the mobile device to the destination need not bodily incorporate all details of specific ways Obradovich discloses to perform the travel-time computation. Other obvious implementation options for determining travel time were background knowledge for POSAs, including, e.g., estimating the travel time by simply dividing the route distance by the speed the mobile device is traveling. My testimony regarding POSAs' background knowledge in this regard is corroborated by several references, as discussed below.

[0320] Tobin (EX1041) describes showing “real-time distance and time information” to “service vendors” and “the real-time speed and direction 139 of user device 105.” Tobin, [0028]. Tobin describes that “the distance and time information particular to each service vendor is shown” and “[t]he time information displays the estimated remaining travel time, calculated by dividing the approximate distance separating the [vendor] from user device 105 by the speed of user device 105.” Tobin, [0028].

[0321] Mura-Smith (EX1067) describes “display[ing] navigational information in text form on display screen 12”, which includes “‘ETA’ (estimated time of arrival)”. Mura-Smith, 8:45-50. Mura-Smith describes that “ETA information 72 estimates the time it will take portable unit 10 to reach the selected location based upon the speed at which portable unit 10 is currently traveling.” Mura-Smith, 8:54-57.

[0322] Additionally, even if Obradovich’s specific implementation using “condition reporting devices” at “points along the streets and highways” to report “traffic speed” to the mobile device were used in the combination “to accurately determine and estimate travel times” (Obradovich, 22:42-54), POSAs would have had motivation to do so to determine the travel time “accurately,” and would have reasonably expected success because Obradovich teaches how to do so.

[0323] Thus, it is my opinion that the Sheha-Wollrab-Obradovich combination meets Element [6H].

b. Claim 11

[0324] Sheha-Wollrab-McDonnell-Obradovich meets the elements of claim 11 for the reasons I discuss below.

i. Preamble [11PRE]: A system comprising:

[0325] Like claim 1, claim 11’s preamble only recites “A system comprising.” 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 Sheha-Wollrab-Obradovich meets the preamble. Claim 11 recites a system with several elements that are essentially the same elements as recited in claim 1. Thus, Sheha-Wollrab-Obradovich meets Element [11PRE] for the same reasons I discussed above in relation to Element [1PRE] (*see supra* §VIII.D.3.a.i). As

explained in this section below, in my opinion a POSA would have understood that Sheha-Wollrab-Obradovich meets all limitations of claim 11 of the '218 patent.

ii. Element [11A]: a wireless device operable to provide a display screen after a request from said wireless telephonic device for access to a first location of a first wireless device,

[0326] Element [11A] recites essentially the same functionality recited in Element [1A], which recites, *inter alia*, “a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred.” Thus, it is my opinion that Sheha-Wollrab-Obradovich meets Element [11A] for the same reasons Sheha-Wollrab meets Element [1A], as discussed above (§VIII.D.3.a.ii), where Element [1A]’s “*first wireless telephonic device*” corresponds to Element [11A]’s “*wireless device*” and “*said wireless telephonic device*,” and Element [1A]’s “*second telephonic wireless device*” corresponds to Element [11A]’s “*first wireless device*.”

iii. Element [11B]: wherein said display screen includes a map from the perspective of said wireless device,

[0327] Element [11B] recites essentially the same functionality recited in Element [1B]. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets Element [11B] for the same reasons Sheha-Wollrab meets Element [1B], as

discussed above (§VIII.D.3.a.iii), where Sheha’s map showing the displaying device’s location is *from the perspective of said wireless device*.

iv. Element [11C]: said display screen includes indicia on said map representative of said first location,

[0328] Element [11C] recites essentially the same functionality recited in Element [1C]. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets Element [11C] for the same reasons Sheha-Wollrab meets Element [1C], as I discussed above (§VIII.D.3.a.iv).

v. Element [11D]: said display screen includes indicia on said map representative of a second user according to a second location obtained from a second wireless device, and

[0329] Element [11D] recites essentially the same functionality recited in Element [1D]. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets Element [11D] for the same reasons Sheha-Wollrab meets Element [1D], as I discussed above (§VIII.D.3.a.v), where Element [1D]’s “*third wireless telephonic device*” corresponds to Element [11D]’s “*second wireless device*”.

vi. Element [11E]: said display screen includes a distance from said wireless telephonic device to said first location,

[0330] Element [11E] recites essentially the same functionality recited in Element [1E]. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets

Element [11E] for the same reasons Sheha-Wollrab meets Element [1E], as I discussed above (§VIII.D.3.a.vi).

vii. Element [11F]: said display screen includes a compass,

[0331] Element [11F] recites essentially the same functionality recited in Element [6F]. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets Element [11F] for the same reasons Sheha-Wollrab-Obradovich meets Element [6F], as discussed above (§VIII.E.2.a.vii).

viii. Element [11G]: said display screen includes an address of said first location, and

[0332] Element [11G] recites essentially the same functionality recited in Element [1F]. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets Element [11G] for the same reasons Sheha-Wollrab meets Element [1F], as I discussed above (§VIII.D.3.a.vii).

ix. Element [11H]: said display screen includes a travel time based on at least the first location and the location of said wireless telephonic device.

[0333] Element [11H] recites essentially the same functionality recited in Element [6H]. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets Element [11H] for the same reasons Sheha-Wollrab-Obradovich meets Element [6H], as I discussed above (§VIII.E.2.a.ix).

- c. **Claim 7: The system of claim 6, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location.**

[0334] Claim 7 recites essentially the same functionality recited in Element [1A]. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets claim 7 for the same reasons Sheha-Wollrab meets Element [1A], as I discussed above (§VIII.D.3.a.ii).

- d. **Claim 8: The system of claim 6, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location and said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.**

[0335] Claim 8 recites essentially the same functionality recited in Element [1A] and claim 3. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets claim 8 for the same reasons Sheha-Wollrab meets Element [1A] and claim 3, as discussed above (§VIII.D.3.a.ii, §VIII.D.3.b).

- e. **Claim 9: The system of claim 6, wherein said first wireless device associates a first permission with said first location to permit said wireless telephonic device to access said first location and said second wireless device associates a second permission with said second location to permit said wireless telephonic device to access said second location.**

[0336] Claim 9 recites essentially the same functionality recited in Element [1A] and claim 4. Thus, it is my opinion that Sheha-Wollrab-Obradovich

meets claim 9 for the same reasons Sheha-Wollrab meets Element [1A] and claim 4, as discussed above (§VIII.D.3.a.ii, §VIII.D.3.c).

- f. **Claim 12: The system of claim 11, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location.**

[0337] Claim 12 recites essentially the same functionality recited in Element [1A]. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets claim 12 for the same reasons Sheha-Wollrab meets Element [1A], as I discussed above (§VIII.D.3.a.ii).

- g. **Claim 13: The system of claim 11, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location and said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.**

[0338] Claim 13 recites essentially the same functionality recited in Element [1A] and claim 3. Thus, it is my opinion that Sheha-Wollrab-Obradovich meets claim 13 for the same reasons Sheha-Wollrab meets Element [1A] and claim 3, as I discussed above (§VIII.D.3.a.ii, §VIII.D.3.b).

- h. Claim 14: The system of claim 11, wherein said first wireless device associates a first permission with said first location to permit said wireless telephonic device to access said first location and said second wireless device associates a second permission with said second location to permit said wireless telephonic device to access said second location.**

[0339] Claim 14 recites essentially the same functionality recited in Element [1A] and claim 4.

[0340] Thus, it is my opinion that Sheha-Wollrab-Obradovich meets claim 14 for the same reasons Sheha-Wollrab meets Element [1A] and claim 4, as I discussed above (§VIII.D.3.a.ii, §VIII.D.3.c).

F. Ground 6: Claims 2, 5, 10, and 15 are Unpatentable over Sheha in view of Wollrab, Obradovich, and McDonnell

1. McDonnell (EX1042)

[0341] McDonnell teaches “obscuring the location of a mobile entity to a specified accuracy level.” McDonnell, Abstract. A “user of a mobile entity can limit the accuracy of location data provided.” McDonnell, 8:5-7, 8:30-45. For example, “the accuracy of the location data is decreased” if it was originally “higher tha[n] the specified accuracy limit.” McDonnell, 9:24-36, 8:46-9:39. The user can “specif[y] an accuracy limit” for a particular recipient of the user’s location. McDonnell, 8:30-38.

2. Discussion of the Sheha-Wollrab-Obradovich-McDonnell Combination

[0342] A POSA would have been motivated to modify the Sheha-Wollrab-Obradovich system based on Obradovich and/or McDonnell to specify different access levels and rights for location information. Sheha, Obradovich, and McDonnell each describe sharing location information and allowing a user to set access rights specifying who has access and the type of information that can be accessed. Sheha, 11:55-12:1; Obradovich, 26:29-49; McDonnell, 6:47-55, 8:30-45. Thus, a POSA would have been familiar with assigning access rights to various types of information and motivated to include the ability to set access rights for different types of location information to give users more versatility and specificity when assigning rights to other users. For example, a user wanting to control not only who has access to their location information, but also what type of location information users can access, would have been motivated to incorporate the security level index and security settings in Obradovich into Sheha's privacy settings.

[0343] Additionally, a POSA would have been motivated to use the functionality allowing a user to establish different limits on the accuracy of location information provided to different requesters as described in McDonnell to provide location information at different levels of precision. McDonnell explains that, in some cases, "because of privacy concerns, the user of the mobile entity

does not want the service system to know his/her location with a high degree of accuracy and accordingly specifies an accuracy limit.” McDonnell, 8:30-36. A POSA would have been motivated to use the protections described in McDonnell, for example, to authorize another user to obtain his/her location information without providing the exact location.

[0344] A POSA would have reasonably expected success incorporating the security/privacy functionalities described in Obradovich and McDonnell into Sheha’s system as it would have required only routine and conventional programming to update Sheha’s privacy configuration options. Because Sheha’s system is configured to receive location information from wireless devices, a POSA would have reasonably expected success implementing security index functionality as described in Obradovich and location obscuring functionality as described in McDonnell.

3. Mapping of Sheha-Wollrab-Obradovich-McDonnell Combination to Claims 2, 5, 10, and 15

- a. Claim 2: The system of claim 1, wherein said permission includes several location access rights, wherein each one of said several location access rights are associated with different location resolutions.**

[0345] Sheha describes different amounts of permission a mobile device may provide “to prevent or limit other calling devices from obtaining position information.” Sheha, 5:38-41. Privacy settings “can include allowance of

position information transfers only when a voice or video connection is established and/or only with the device owner's permission” and “allowing any remote device to request position information for any specified amount of time.” Sheha, 5:41-46, 10:20-26. Additionally, Sheha teaches that different specificity of location information can be obtained and shared. Sheha, 15:54-57 (“position information includes one of graphical mapping information, GPS information, longitudinal and latitudinal information, altitude information, and address information.”), 16:4-6 (“location of the caller is one of a metropolitan area, a state within the United States of America, and an international political territory.”).

[0346] To the extent Sheha does not expressly disclose *several location access rights associated with different location resolutions*, this would have been obvious based on Obradovich and/or McDonnell. Obradovich teaches that a mobile device user may provide varying levels of access to items of information, including geographic location information, by assigning “security level indexes for each item of information” and specifying “which security level index each such other individual should be provided.” Obradovich, 26:29-36. McDonnell teaches to allow a mobile device user to obscure its location information to a specified accuracy level before sending it to a requesting party. McDonnell, Abstract, 6:44-52, 8:30-45. In McDonnell’s system, when the mobile entity sends its location data to the service system, it specifies “an accuracy limit,”

which the service system then sends to the decryption entity to “reliably limit the accuracy of the location data it returns to the level specified by the mobile entity.”

McDonnell, 8:30-53, 8:60-9:44, FIGs. 7-8.

[0347] Given that Sheha’s system contemplates limiting location sharing to other devices, a POSA aware of Obradovich’s security level index and McDonnell’s accuracy limiting capabilities would have been motivated to incorporate such functionality into Sheha’s system to allow a user to have more control over what location information is shared with others. For example, a POSA would have been motivated to customize the level of specificity of information such that exact location information can be shared with immediate family and/or close friends while less accurate information is provided to coworkers or service provider contacts. McDonnell, 3:1-16, 8:30-45, 9:45-55. A POSA would have reasonably expected success in doing so as I discussed above (§VIII.F.2).

b. Claims 5, 10, and 15

[0348] As I discussed above (§VIII.F.3.a, claim 2), Sheha describes different amounts of permission a mobile device may provide to another mobile device to access its location information, and those permissions include *several access levels*. Sheha, 5:37-45, 10:20-26. POSAs would have understood that, by preventing or limiting the users that can access a device’s location information, a

device has created multiple access levels (those allowed to access and those prevented from accessing) for a location.

[0349] Sheha describes access levels beyond these two. The privacy settings “can include allowance of position information transfers only when a voice or video connection is established and/or only with the device owner's permission” and “allowing any remote device to request position information for any specified amount of time.” Sheha, 5:41-46; *see also id.*, 10:20-26. Thus, Sheha discloses that the mobile device’s permission may include different access levels, such as transferring location information at any time, transferring location information “only when a voice or video connection is established,” “for the duration of the call,” or “only for a given period of time,” and not transferring location information. Sheha, 5:9-14, 5:37-46, 10:20-26.

[0350] Additionally, as I discussed above (§VIII.F.3.a, claim 2), a POSA would have been motivated and reasonably expected success to implement Sheha to allow users to specify a level of position accuracy that a requester is allowed to receive when requesting the user’s location, as described in McDonnell and Obradovich, both of which teach to allow users to specify different access levels for different requestors as discussed above (§VIII.A.3, §§VIII.F.1-2). Each accuracy limit in McDonnell and each security level in Obradovich corresponds to a different access level. Thus, Sheha in view of McDonnell and/or Obradovich

allows a user (e.g., via the *first wireless device* in claims 10 and 15) to associate any number of access levels with its location and particular requesting devices, and one of the access levels permits a requesting device to access the *first location*.

G. Ground 7: Claims 16-19 are Unpatentable over Sheha in view of Song

1. Discussion of the Sheha-Song Combination

[0351] As I discussed above (§VIII.C.1), Song teaches that the same user may have more than one device and/or share devices with other users. POSAs would have been motivated and reasonably expected success based on Song's teachings to implement Sheha's system so the same user uses the same login information on each device he/she uses, to consistently access that user's account data and avoid having to unnecessarily remember multiple logins. Based on Song's teachings, POSAs would also have been motivated and reasonably expected success to receive the user's login information locally to identify the user on each device he/she uses in Sheha's system, to ensure that the user only accesses data and functionality that he/she is authorized to access, and to allow for authenticating a user when the remote server is offline/unavailable and/or when the wireless device has a poor network connection.

2. Mapping of the Sheha-Song Combination to Claims 16-19

a. Claim 16

i. Preamble [16PRE]: A system comprising:

[0352] Sheha discloses a *system* as I discussed above (§VIII.D.3.a.i, Element [1PRE]). Sheha-Song meets [16PRE] for the same reason.

ii. Element [16A]: a first device operable to identify a user identification on said first device by receiving a login and password from said first device,

[0353] Sheha describes that “user identification information” is received by the ODAS and “every telephone account user has a *username and password*,” which “correlates both the origin and destination telephone *users’ identifications* to verify if the user is signed-on to the ODAS” and can be used according to “authentication and authorization protocols [to] establish that a user is genuine.” Sheha, 8:38-50. Thus, Sheha describes *identifying a user identification by receiving a login and password from said first device*.

[0354] In Sheha’s system, the *first device’s* user “is logged on to [the] wireless...device,” and then signs on to the ODAS to be “verified by the networked server’s authentication and authorization protocol procedures.” Sheha, 5:26-29. Therefore, before the *user identification* is identified at the ODAS, it is first identified by the *first device* via the *login and password*.

[0355] Additionally, Song’s teachings incorporated in Sheha-Song (*supra* §VIII.G.1) “cache[] in the personal device” a “device record” that includes sufficient “login information” including *login and password* to “use the locally stored information for authorization and verification” in “situations where the...server...is not available,” meeting Element [16A]. Song, 11:1-52, 5:48-55, 8:18-9:45, FIG. 3; *see supra* §VIII.C.1, §VIII.C.3.a.ii.

[0356] Thus, it is my opinion that Sheha-Song meets Element [16A].

iii. Element [16B]: a first location is operable to be recorded of said user identification, based on a location of said first device after said user identification is identified on said first device,

[0357] Sheha’s *first device* determines its *first location* and provides it to the ODAS for *recording of said user identification*. Sheha, 2:25-29, 4:66-5:2, 6:57-59, 10:5-6, 10:48-50, 11:15-37, 8:31-52 (“user identification information...is also sent to the ODAS” for “authentication and authorization protocols”), 9:61-10:4 (“the system verifies, by using authorization and authentication protocols, if the user” is “signed-on to the system” and then can “request the location of the mobile device”), 3:4-13 (“a unique identification token...can be used...utilizing authentication and authorization procedures, in order to determine position information and to pass that information between...users or...devices”).

[0358] As I discussed above (§VIII.G.2.a.ii, Element [16A]), *said user identification is identified on said first device* before the device interacts with the ODAS as discussed above.

[0359] Thus, it is my opinion that Sheha-Song meets Element [16B].

iv. Element [16C]: a first map provided from the perspective of said first location and is operable of being displayed on said first device,

[0360] Sheha-Song discloses Element [16C] for the reasons I discussed above that Sheha-Wollrab meets Element [1B] in Ground 4 (§VIII.D.3.a.iii). Thus, Sheha-Song meets Element [16C] for the same reasons.

v. Element [16D]: said first location is operable to be provided to a third device not associated with said user identification,

[0361] As I discussed above (§VIII.D.3.a.ii, Element [1A] in Ground 4), the *first location is operable to be provided to a third device* of a different user who is *not associated with said user identification*. Thus, it is my opinion that Sheha-Song meets Element [16D].

vi. Element [16E]: said user identification is operable to be identified on a second device by receiving said login and password from a second device,

[0362] As I discussed above (§VIII.C.1, §VIII.G.1), Song's teachings in Sheha-Song authenticate the same user to access their own data from more than one device, such that *said user identification is operable to be identified on a*

second device, using the same *login and password*, meeting Element [16E]. Song, 5:48-63 (“both the personal device 14 and other personal devices 14 may be selectively utilized to receive login information”), 8:18-47, 9:30-40, 11:48-52, 14:57-15:3, 15:49-56, FIG. 3; *see supra* §VIII.C.3.a.vi (Element [16E] in Ground 3). Thus, it is my opinion that Sheha-Song meets Element [16E].

vii. Element [16F]: a second location is operable to be recorded of said user identification based on a second location of said second device after said user identification is identified on said second device,

[0363] When the *first device’s* user is using the *second device*, that device’s *second location is operable to be recorded of* that user’s *user identification after said user identification is identified on said second device*, the same way that I discussed above (§VIII.G.2.a.iii, Element [16B]; §VIII.D.3.a.ii, Element [1A] in Ground 4). *See also supra* §VIII.G.2.a.vi (Element [16E]). Thus, it is my opinion that Sheha-Song meets Element [16F].

viii. Element [16G]: a second map provided from the perspective of said second location and is operable of being displayed on said second device,

[0364] The *second device* can display a *second map provided from the perspective of said second location*, the same way that I discussed above (§VIII.G.2.a.iv, Element [16C]; §VIII.D.3.a.iii, Element [1B] in Ground 4). Thus, it is my opinion that Sheha-Song meets Element [16G].

ix. Element [16H]: said first location and said second location are different,

[0365] As I discussed above (§VIII.C.3.a.ix, Element [16H] in Ground 3), POSAs would have understood that when a *first device* user switches to a *second device*, it may be a *different* location. *See* Song, 14:22-30 (example where user switches devices when “leav[ing] the office” and moves to a different location), 1:47-52 (similar). Thus, it is my opinion that Sheha-Song meets Element [16H].

x. Element [16I]: and said second location is operable to be provided a said third device not associated with said user identification.

[0366] The *second location is operable to be provided* to the other user’s *third device* in the same way that I discussed above (§VIII.G.2.a.v, Element [16D]; §VIII.D.3.a.ii, Element [1A] in Ground 4). Thus, it is my opinion that Sheha-Song meets Element [16I].

b. Claim 17: The system of claim 16, wherein said first device includes a first positioning system, said second device includes a second positioning system, said third device includes a third positioning system, said first location is determined, at least in part, based on said first positioning system, and said second location is determined, at least in part, based on said second positioning system.

[0367] Each of Sheha’s devices can determine its location using “an onboard *positioning*” system such as GPS. Sheha, 10:5-16. For example, in the

mobile-to-mobile scenario, each mobile device uses its own positioning system to determine its location. Sheha, 11:3-17. Thus, it is my opinion that Sheha-Song meets claim 17.

- c. **Claim 18: The system of claim 16, wherein said first location is provided to said third device based on an access permission of said first location to said third device provided by said identified user on said first device.**

[0368] For the reasons that I discussed above (§VIII.D.3.a.ii, Element [1A] in Ground 4), the *first location is provided to said third device based on an access permission* the user provides on the *first device*. Thus, it is my opinion that Sheha-Song meets claim 18.

- d. **Claim 19: The system of claim 16, wherein said first location is recorded on a server remote to said first device, second device, and third device.**

[0369] As I discussed above (§VIII.G.2.a.iii, Element [16B]), the *first location is recorded on* Sheha's ODAS, which is *a server remote to* the users' devices as I discussed above (§VIII.D.3.b, claim 3 in Ground 4). Thus, it is my opinion that Sheha-Song meets claim 19.

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: 11-15-2024



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 system comprising:
[1A] a first wireless telephonic device operable to provide a display screen after a request to locate a second wireless telephonic device from said first wireless telephonic device has occurred and after a confirmation that said first wireless telephonic device has been given a permission by said second telephonic wireless device to locate said second telephonic wireless device,
[1B] wherein said display screen includes a map provided with respect to the location of said first wireless telephonic device,
[1C] said display screen includes indicia on said map representative of a first location,
[1D] said display screen includes indicia representative of a second location obtained from said third wireless telephonic device,
[1E] said display screen includes a distance from said first wireless telephonic device to said first location, and
[1F] said display includes an address associated with said first location.
Claim 2
The system of claim 1, wherein said permission includes several location access rights, wherein each one of said several location access rights are associated with different location resolutions.
Claim 3
The system of claim 1, wherein said permission is stored on a server remote to said second wireless telephonic device, said third wireless telephonic device, and said first wireless telephonic device.
Claim 4
The system of claim 1, wherein said third wireless device associates a second permission with said second location to permit said first wireless telephonic device to access said second location.
Claim 5

The system of claim 1, wherein said permission of said second wireless telephonic device is associated with one of several access levels with said first location, said one of said several access levels permits said first wireless telephonic device to access said first location.

Claim 6

[6PRE] A system comprising:

[6A] a wireless telephonic device operable to provide a display screen after a request from said wireless telephonic device for access to a first location of a first wireless device,

[6B] wherein said display screen includes a map provided from a perspective of said wireless telephonic device,

[6C] said display screen includes indicia on said map representative of said first location,

[6D] said display screen includes indicia on said map representative of a second location obtained from a second wireless device, and

[6E] said display screen includes a distance from said wireless telephonic device to said first location,

[6F] said display screen includes a compass,

[6G] said display screen includes a directional arrow representative of the direction of said first location with respect to the location of said wireless telephonic device, and

[6H] a determination is operable to be made to provide on said wireless telephonic device for a travel time from said first location to said wireless telephonic device.

Claim 7

The system of claim 6, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location.

Claim 8

The system of claim 6, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location and said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.

Claim 9
The system of claim 6, wherein said first wireless device associates a first permission with said first location to permit said wireless telephonic device to access said first location and said second wireless device associates a second permission with said second location to permit said wireless telephonic device to access said second location.
Claim 10
The system of claim 6, wherein said first wireless device associates one of several access levels with said first location, said one of said several access levels permits said wireless telephonic device to access said first location.
Claim 11
[11PRE] A system comprising:
[11A] a wireless device operable to provide a display screen after a request from said wireless telephonic device for access to a first location of a first wireless device,
[11B] wherein said display screen includes a map from the perspective of said wireless device,
[11C] said display screen includes indicia on said map representative of said first location,
[11D] said display screen includes indicia on said map representative of a second user according to a second location obtained from a second wireless device, and
[11E] said display screen includes a distance from said wireless telephonic device to said first location,
[11F] said display screen includes a compass,
[11G] said display screen includes an address of said first location, and
[11H] said display screen includes a travel time based on at least the first location and the location of said wireless telephonic device.
Claim 12
The system of claim 11, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to access said first location.
Claim 13
The system of claim 11, wherein said first wireless device associates a permission with said first location to permit said wireless telephonic device to

access said first location and said permission is stored on a server remote to said first wireless device, said second wireless device, and said wireless telephonic device.

Claim 14

The system of claim 11, wherein said first wireless device associates a first permission with said first location to permit said wireless telephonic device to access said first location and said second wireless device associates a second permission with said second location to permit said wireless telephonic device to access said second location.

Claim 15

The system of claim 11, wherein said first wireless device associates one of several access levels with said first location, said one of said several access levels permits said wireless telephonic device to access said first location.

Claim 16

[16PRE] A system comprising:

[16A] a first device operable to identify a user identification on said first device by receiving a login and password from said first device,

[16B] a first location is operable to be recorded of said user identification, based on a location of said first device after said user identification is identified on said first device,

[16C] a first map provided from the perspective of said first location and is operable of being displayed on said first device,

[16D] said first location is operable to be provided to a third device not associated with said user identification,

[16E] said user identification is operable to be identified on a second device by receiving said login and password from a second device,

[16F] a second location is operable to be recorded of said user identification based on a second location of said second device after said user identification is identified on said second device,

[16G] a second map provided from the perspective of said second location and is operable of being displayed on said second device,

[16H] said first location and said second location are different, and

[16I] said second location is operable to be provided a said third device not associated with said user identification.

Claim 17

The system of claim 16, wherein said first device includes a first positioning system, said second device includes a second positioning system, said third device includes a third positioning system, said first location is determined, at least in part, based on said first positioning system, and said second location is determined, at least in part, based on said second positioning system.

Claim 18

The system of claim 16, wherein said first location is provided to said third device based on an access permission of said first location to said third device provided by said identified user on said first device.

Claim 19

The system of claim 16, wherein said first location is recorded on a server remote to said first device, second device, and third device.