

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BMW OF NORTH AMERICA, LLC,

Petitioners,

v.

NORTHSTAR SYSTEMS LLC,

Patent Owner.

U.S. Patent No. 8,478,527

Filing Date: July 5, 2011

Issue Date: July 2, 2013

Case No. IPR2023-00934

PETITION FOR *INTER PARTES* REVIEW

Table of Contents

	Page
I. INTRODUCTION	1
II. THE '527 PATENT	1
III. LEVEL OF ORDINARY SKILL IN THE ART	4
IV. CLAIM CONSTRUCTION	4
V. STATEMENT OF PRECISE RELIEF REQUESTED	4
VI. GROUND 1: CLAIMS 1-4, 7, 10-15, AND 17-19 ARE OBVIOUS OVER <i>KREITLER</i> IN VIEW OF <i>SUOMELA</i>	6
A. Overview and Motivation to Combine	6
B. Independent Claims	14
1. Claim 1	14
a. [1pre]: A method for displaying object vector indicators (“OVI”) and mapping-media content, referencing map-objects (“MO”) on an electronic map, comprising:	14
b. [1a]: obtaining a MO from a mapping service;	16
c. [1b]: determining that coordinates of the MO are not within a selected area of the electronic map;	17
d. [1c]: computing distance and travel-related information to the MO	19
e. [1d]: displaying an OVI containing the distance and travel-related information;	20
f. [1e]: receiving user input selecting the OVI	22
g. [1f]: retrieving mapping-media content associated with the selected OVI;	23

h.	[1g]: and displaying the mapping-media content.	23
2.	Claim 13	23
a.	[13pre]: An apparatus, comprising:	23
b.	[13a]: a display device configured to display a first portion of an electronic map and an object vector indicator (OVI), ...	24
c.	[13b]: wherein the OVI provides reference information for a map object (MO) which is not visible on the first portion of the electronic map;	25
d.	[13c]: a processing device, configured to:	25
e.	[13d]: receive a user input indicating selection of the OVI;	25
f.	[13e]: in response to receiving the user input, cause the display device to display media content associated with the MO.	25
3.	Claim 18	26
a.	[18pre]: An apparatus, comprising:	26
b.	[18a]: a display device configured to display a first portion of an electronic map and an object vector indicator (OVI), ...	26
c.	[18b]: wherein the OVI provides reference information for a map object (MO) which is not visible on the first portion of the electronic map;	26
d.	[18c]: a processing device, configured to:	26
e.	[18d]: identify a user selection of the OVI;	26
f.	[18e]: in response to identifying the user selection, cause the display device to display a second portion of the electronic map.	27

C.	Dependent Claims	27
1.	Claim 2: wherein the distance to the MO is computed from a center of the selected area of the electronic map.	27
2.	Claim 3: wherein the distance to the MO is computed from a location marker on the electronic map.	28
3.	Claim 4: wherein the user input comprises a voice command.....	30
4.	Claim 7: wherein the OVI comprises a graphical representation of the MO.	30
5.	Claim 10.....	32
a.	[10a]: obtaining a position of an electronic device configured to display the electronic map;	32
b.	[10b]: transmitting the position of the electronic device to a remote server;.....	32
c.	[10c]: receiving, from the remote server, the distance-and-travel information.....	33
6.	Claim 11	33
a.	[11pre]: wherein displaying the mapping-media content comprises overlaying the mapping-media content over at least a portion of the selected area of the electronic map, and wherein the method further comprises:	33
b.	[11a]: receiving user input;.....	35
c.	[11b]: in response to receiving the user input, eliminating the mapping-media content.....	35
7.	Claim 12: restoring the portion of the selected electronic map that was overlaid with the mapping-media content.	36

8.	Claim 14: wherein the reference information comprises a distance from the apparatus to the MO and an estimated time of travel.	36
9.	Claim 15: wherein the media content comprises a coupon or a sales event associated with the MO.	37
10.	Claim 17	37
a.	[17a]: wherein the MO is associated with a building, ...	37
b.	[17b]: wherein the media content comprises a floor plan of the building.	38
11.	Claim 19: wherein the MO is displayed together with the second portion of the electronic map.	38
VII.	GROUND 2: CLAIMS 9 AND 20 ARE OBVIOUS OVER <i>KREITLER</i> IN VIEW OF <i>SUOMELA</i> AND <i>MYR</i>	38
A.	Overview and Motivation to Combine.....	38
B.	Claim 9	43
1.	[9pre]: wherein computing distance-and-travel information comprises:	43
2.	[9a]: identifying a change in travel conditions	43
3.	[9b]: computing an estimated time of arrival at the MO;	44
4.	[9c]: displaying the OVI with the estimated time of arrival in response to identifying the change in travel conditions.	45
C.	Claim 20: wherein the second portion of the electronic map comprises a travel route to the MO.	45
VIII.	GROUND 3: CLAIMS 5-6, 8, 16, 26-27, AND 30 IS OBVIOUS OVER <i>KREITLER</i> IN VIEW OF <i>SUOMELA</i> AND <i>ALTMAN</i>	46
A.	Overview and Motivation to Combine.....	46

B.	Independent Claim	54
1.	Claim 26	54
a.	[26pre]: An apparatus, comprising:	54
b.	[26a]: a display device configured to display a first portion of an electronic map and an object vector indicator (OVI), ...	54
c.	[26b]: wherein the OVI provides reference information for a map object (MO) which is not visible on the first portion of the electronic map;	54
d.	[26c]: a processing device, configured to:	54
e.	[26d]: monitor a change in position of the apparatus;	54
f.	[26e]: in response to identifying the change in position, cause the display device to alter a visual characteristic of the OVI to represent a change in spatial relationship between the apparatus and the MO.	54
C.	Dependent Claims	56
1.	Claim 5	56
a.	[5a]: identifying a change in position of the MO.	56
b.	[5b]: computing a revised distance to the MO;	56
c.	[5c]: displaying the OVI with the revised distance in response to identifying the change in the position of the MO.	57
2.	Claim 6	58
a.	[6a]: identifying a change in position of an electronic device configured to display the electronic map;	58

b.	[6b]: computing a revised distance to the MO;	58
c.	[6c]: displaying the OVI with the revised distance in response to identifying the change in the position of the electronic device.....	58
3.	Claim 8: wherein the OVI comprises contact info information of the MO.....	58
4.	Claim 16: wherein the MO identifies a social networking member, and wherein the media content comprises an image of the social networking member.....	59
5.	Claim 27	60
a.	[27a]: the processing device is further configured to cause the display device to: display a position of the apparatus on the electronic map;	61
b.	[27b]: alter an angular position of the OVI with respect to the position of the apparatus and the MO.....	62
6.	Claim 30: wherein the processing device is further configured to cause the display device to alter a position of the OVI with respect to a center of the electronic map.	62
IX.	GROUND 4: CLAIMS 21-22 ARE OBVIOUS OVER <i>KREITLER</i> IN VIEW OF <i>SUOMELA</i> AND <i>RASMUSSEN</i>	63
A.	Overview and Motivation to Combine.....	63
B.	Claim 21: wherein the processing device is further configured to cause the display device to display an animated transition from the first portion to the second portion of the electronic map.	67
C.	Claim 22: wherein the animated transition comprises a series of images along a linear path of travel between the first portion and the second portion of the electronic map.....	68

X.	GROUND 5: CLAIMS 23 AND 24 ARE OBVIOUS OVER <i>KREITLER</i> IN VIEW OF <i>SUOMELA</i> , <i>RASMUSSEN</i> , AND <i>MYR</i>	68
A.	Overview and Motivation to Combine.....	69
B.	Claim 23: wherein the animated transition comprises a series of images along a predetermined route of travel between the first portion and the second portion of the electronic map.....	71
C.	Claim 24: wherein the series of images are displayed at a speed of transition that mimics real travel conditions.....	72
XI.	GROUND 6: CLAIM 25 IS OBVIOUS OVER <i>KREITLER</i> IN VIEW OF <i>SUOMELA</i> , <i>RASMUSSEN</i> , AND <i>ALTMAN</i>	72
A.	Overview and Motivation to Combine.....	72
B.	Claim 25: wherein the processing device is further configured to cause the display device to display the first portion of the electronic map after the animated transition is complete.....	75
XII.	GROUND 7: CLAIM 28 IS OBVIOUS OVER <i>KREITLER</i> IN VIEW OF <i>SUOMELA</i> , <i>ALTMAN</i> , AND <i>SCHEIBE</i>	76
A.	Overview and Motivation to Combine.....	76
B.	Claim 28: wherein the processing device is further configured to cause the display device to alter a color of the OVI to indicate a relative distance between the apparatus and the MO.	78
XIII.	GROUND 8: CLAIM 29 IS OBVIOUS OVER <i>KREITLER</i> IN VIEW OF <i>SUOMELA</i> , <i>ALTMAN</i> , AND <i>WATANABE</i>	79
A.	Overview and Motivation to Combine.....	79
B.	Claim 29: wherein the processing device is further configured to cause the display device to alter a length of a graphical vector associated with the OVI to indicate a relative distance between the apparatus and the MO.....	81
XIV.	<i>FINTIV</i> DISCRETIONARY DENIAL IS INAPPROPRIATE.....	83

XV. DISCRETIONARY DENIAL IS INAPPROPRIATE UNDER 35 U.S.C. §325(D)	83
XVI. MANDATORY NOTICES	84
A. Real Party-in-Interest	84
B. Related Matters.....	84
C. Lead and Back-Up Counsel, and Service Information	85
XVII. GROUNDS FOR STANDING.....	86
XVIII. CONCLUSION	86

TABLE OF AUTHORITIES

Page(s)

Federal Cases

<i>Apple Inc. v. Fintiv, Inc.</i> , IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020)	83, 84
<i>Becton, Dickinson & Co. v. B. Braun Melsungen AG</i> , IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017)	83, 84
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005) (en banc)	4

Federal Statutes

35 U.S.C. §102	5
35 U.S.C. §103	4
35 U.S.C. §314	83
35 U.S.C. §325	83

LIST OF EXHIBITS

Exhibit	Description
Ex. 1001	U.S. Patent No. 8,478,527
Ex. 1002	File History of U.S. Patent No. 8,478,527
Ex. 1003	Declaration of Dr. Craig Rosenberg
Ex. 1004	Curriculum Vitae of Dr. Craig Rosenberg
Ex. 1005	U.S. Patent No. 9,607,092 (“Kreitler”)
Ex. 1006	U.S. Patent No. 6,697,734 (“Suomela”)
Ex. 1007	U.S. Patent No. 6,480,783 (“Myr”)
Ex. 1008	U.S. Patent No. 8,099,109 (“Altman”)
Ex. 1009	U.S. Patent No. 7,158,878 (“Rasmussen”)
Ex. 1010	U.S. Patent App. Pub. No. 2007/0050129 (“Salmre”)
Ex. 1011	Garmin nüvi Personal Travel Assistant Quick Reference Guide (September 2005) <i>available at</i> https://pdf.crutchfieldonline.com/ImageBank/v20060207074000/Manuals/150/150NUVI350.PDF
Ex. 1012	Apple Reinvents the Phone with iPhone (January 9, 2007) <i>available at</i> https://www.apple.com/newsroom/2007/01/09Apple-Reinvents-the-Phone-with-iPhone/
Ex. 1013	GPS Goes Mainstream (December 26, 2007) <i>available at</i> https://www.npr.org/templates/story/story.php?storyId=17611103
Ex. 1014	GPS Mobile Phones to Hit the Masses in 2007 (January 25, 2007) <i>available at</i> https://www.esato.com/news/gps-mobile-phones-to-hit-the-masses-in-2007-1429

Ex. 1015	GPS-enabled Mobile Phone Invasion in 2007 (October 13, 2005) <i>available at</i> https://news.softpedia.com/news/GPS-enabled-Mobile-Phone-Invasion-in-2007-45361.shtml
Ex. 1016	U.S. Patent No. 6,252,544 (“ <i>Hoffberg</i> ”)
Ex. 1017	WIPO Publication No. 2009/055501 (“ <i>Holden</i> ”)
Ex. 1018	File History of U.S. Patent No. 8,032, 297
Ex. 1019	U.S. Patent No. 8,165,808 (“ <i>Scheibe</i> ”)
Ex. 1020	U.S. Patent No. 7,395,152 (“ <i>Watanabe</i> ”)
Ex. 1021	Accessibility of State and Local Government Websites to People with Disabilities (June 2003) <i>available at</i> https://archive.ada.gov/websites2_scrn.pdf
Ex. 1022	U.S. Patent No. 6,424,357 (“ <i>Frulla</i> ”)
Ex. 1023	Voice Command – CodeProject (Sept. 26, 2005) <i>available at</i> https://www.codeproject.com/Articles/11771/Voice-Command

I. INTRODUCTION

Petitioner, BMW of North America, LLC, requests *Inter Partes* Review of U.S. Patent No. 8,478,527 (Ex. 1001, “’527”).

The ’527 was filed on July 5, 2011, and claims priority to May 8, 2008, well after graphical mapping products were commonplace. Despite its late priority date, the ’527 claims merely generic methods for displaying map and navigation information—albeit using non-conventional terminology (like object vector indicator) that does not itself impart novelty.

The ’527 claims displaying points-of-interest (“POI”), way-points, business locations, places of interest etc. (collectively referred to herein as map-objects (“MOs”)) located beyond the displayed map area. ’527, 1:31-34. When an MO is beyond the visible map area, the method creates an object vector indicator (“OVI”) referencing the MO, comprising a graphic indicating the off-map MO’s direction and distance. *Id.*, 1:65-2:27. The OVI may also present visual media associated with the MO like a diagram, photo, audio/video, or illustration. *Id.*, 2:36-44.

But, long before 2008, mapping methods including graphical indicators for off-map POIs were well-known, as evidenced by the prior art in this Petition.

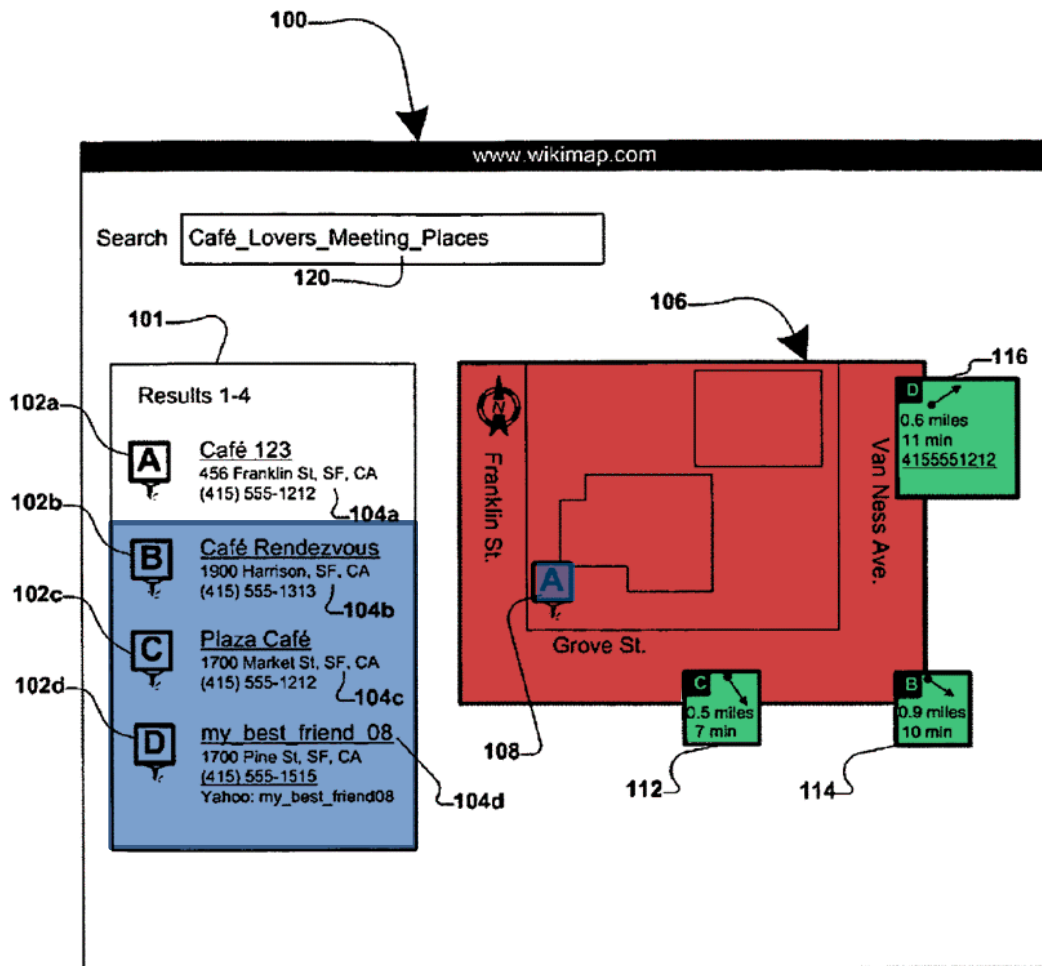
II. THE ’527 PATENT

The ’527 was filed on July 5, 2011, and claims priority to May 8, 2008.

The ’527’s claims comprise five primary steps:

- 1) Displaying a map on the display of an electronic device;
- 2) Determining an off-map POI;
- 3) Displaying a selectable object indicating the off-map POI's location;
- 4) Detecting a change in position or user input; and
- 5) Altering the display.

In the '527, a device's map-display application displays a map area. *Id.*, 3:31-34. The application identifies MOs, or specific locations, such as those resulting from a user search. *Id.*, 8:47-54, 8:60-63. The application then determines whether the MOs are within the visible map area. *Id.*, 8:66-9:7. If an MO is outside the **visible bounds of the map**, the application creates and displays **an OVI** referencing the MO. *Id.*, 9:15-18. The **OVI** is positioned on the **visible map area's** periphery and includes information such as direction, distance, and travel-time. *Id.*, 10:24-28, 10:45-47, Figs. 1, 3B, 6A, 6B, 8A.



'527, Fig. 1¹.

In some claims, a user selects an OVI and, in response, mapping-media content associated with the corresponding MO is displayed. *Id.*, 10:57-61, 11:9-23, Fig. 5B.

¹ Annotations throughout added unless noted.

III. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”) at the time of the purported invention would have had at least a bachelor’s degree in Computer or Electrical Engineering, or equivalent engineering discipline, and approximately three years’ experience in telecommunications, navigation, or geolocation systems. Additional education could substitute for professional experience, and significant work experience could substitute for formal education.

IV. CLAIM CONSTRUCTION

The Board construes claims per *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). For the purposes of this IPR, the plain meaning of each claim term can be applied. Rosenberg, 52-54.

V. STATEMENT OF PRECISE RELIEF REQUESTED

Petitioner requests review of ’527 claims 1-30 under pre-AIA §103, in view of the following prior art and grounds.

Prior art:

Reference	Filing Date	Issue/Publication Date	Relevant Statute
U.S. Patent No. 9,607,092 (Ex. 1005, <i>Kreitler</i>)	May 25, 2005	March 28, 2017	§102(e)
U.S. Patent No. 6,697,734 (Ex. 1006, <i>Suomela</i>)	April 17, 2002	February 24, 2004	§102(b)
U.S. Patent No. 8,099,109 (Ex. 1007, <i>Altman</i>)	October 31, 2007	January 17, 2012	§102(e)
U.S. Patent No. 6,480,783 (Ex. 1008, <i>Myr</i>)	March 17, 2000	November 12, 2002	§102(b)
U.S. Patent No. 7,158,878 (Ex. 1009, <i>Rasmussen</i>)	February 5, 2005	January 2, 2007	§102(b)
U.S. Patent No. 8,165,808 (Ex. 1019, <i>Scheibe</i>)	July 17, 2007	April 24, 2012	§102(e)
U.S. Patent No. 7,395,152 (Ex. 1020, <i>Watanabe</i>)	April 4, 2006	July 1, 2008	§102(e)

Grounds:

Ground	Prior Art Combination
1	<i>Kreitler</i> in view of <i>Suomela</i> renders obvious claims 1-4, 7, 10-15, and 17-19
2	<i>Kreitler</i> in view of <i>Suomela</i> and <i>Myr</i> renders obvious claims 9 and 20

3	<i>Kreitler</i> in view of <i>Suomela</i> and <i>Altman</i> renders obvious claim 5-6, 8, 16, 26-27, and 30
4	<i>Kreitler</i> in view of <i>Suomela</i> and <i>Rasmussen</i> renders obvious claims 21-22
5	<i>Kreitler</i> in view of <i>Suomela</i> , <i>Rasmussen</i> , and <i>Myr</i> renders obvious claims 23-24
6	<i>Kreitler</i> in view of <i>Suomela</i> , <i>Rasmussen</i> , and <i>Altman</i> renders obvious claim 25
7	<i>Kreitler</i> in view of <i>Suomela</i> , <i>Altman</i> , and <i>Scheibe</i> renders obvious claim 28
8	<i>Kreitler</i> in view of <i>Suomela</i> , <i>Altman</i> , and <i>Watanabe</i> renders obvious claim 29

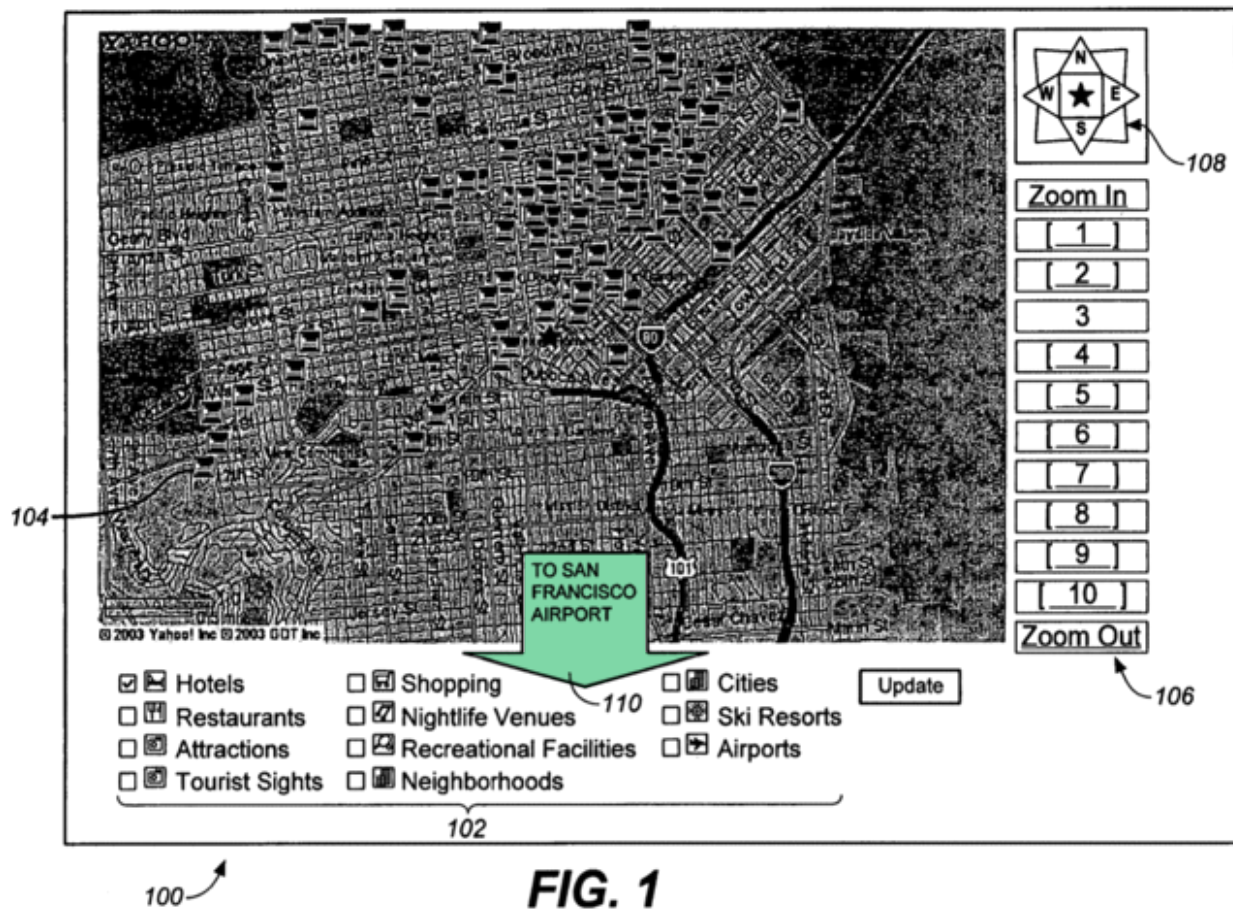
VI. GROUND 1: CLAIMS 1-4, 7, 10-15, AND 17-19 ARE OBVIOUS OVER *KREITLER* IN VIEW OF *SUOMELA*

A. Overview and Motivation to Combine

As explained above, the claims include five core steps:

- 1) Displaying a map on the display of an electronic device;
- 2) Determining an off-map location of interest;
- 3) Displaying a selectable object indicating the location of the off-map location;
- 4) Detecting a change in position or user input; and
- 5) Altering the display, e.g., displaying mapping-media content related to a selected object.

Kreitler teaches most limitations of the independent claims, including all five primary steps. Like the '527, *Kreitler* discloses presenting POIs on a map and allowing a user to obtain detailed information. *Kreitler*, 3:33-36. *Kreitler* “can display special (distinctive) icons for items that are not positioned on the map but nonetheless may be of interest” *Id.*, 6:43-49. Rosenberg, 60-61.

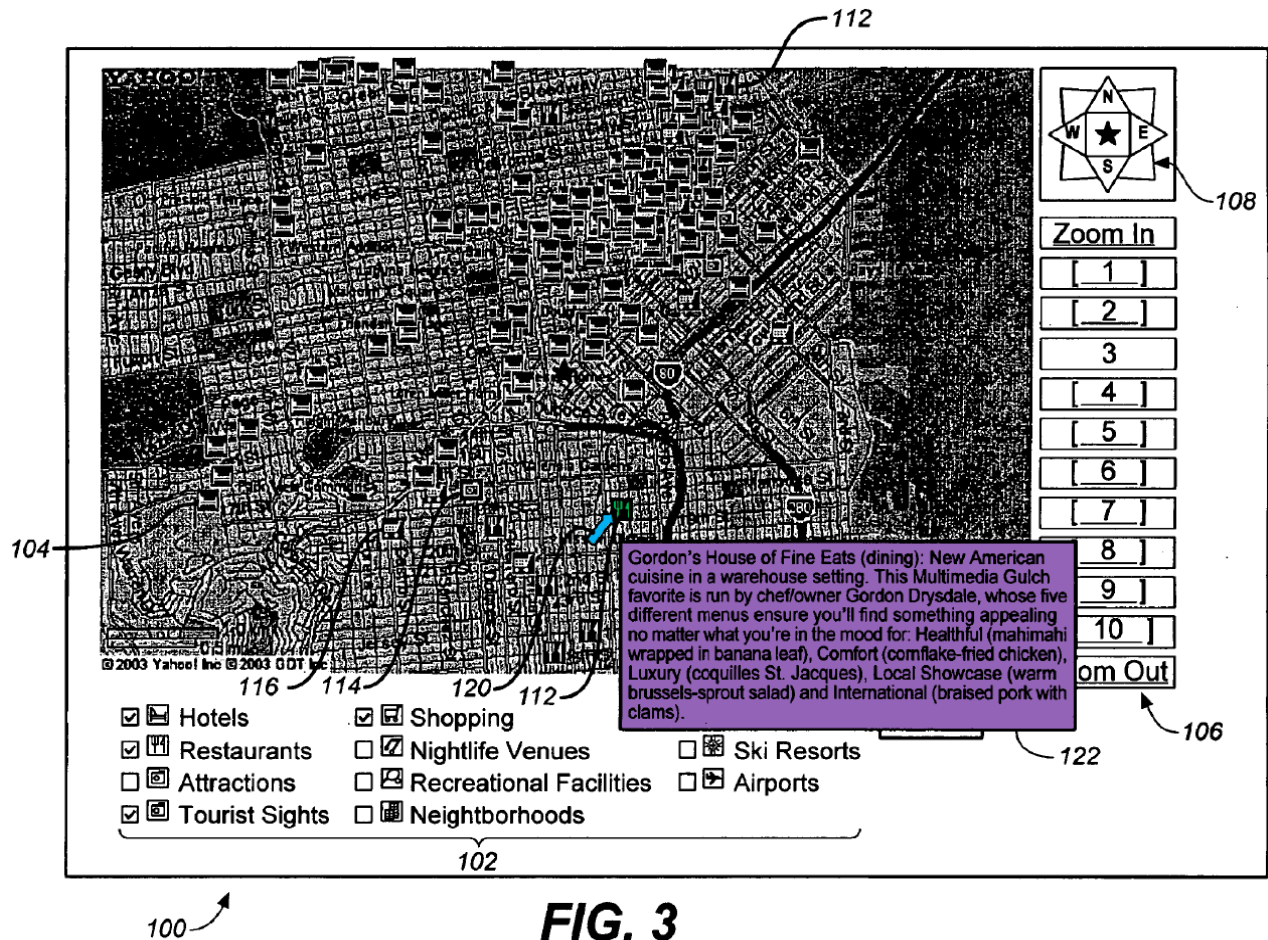


Kreitler, Fig. 1.

A user interacts by clicking the icon to “jump to a higher zoom level and re-center the map around the center of the icon,” (*id.*, 6:14-43), or the item represented by the icon, if the icon is a special icon (*id.*, 6:58-60). Furthermore,

“hovering the cursor ... over an icon allows the user to view a summarization of pertinent information about that item” in summary box 122. *Id.*, 6:14-18, Fig. 3.

Rosenberg, 62.



Kreitler, Fig. 3.

While *Kreitler* arguably does not expressly disclose (i) that the OVI contains distance-related information, (ii) that the electronic device is GPS-enabled, and (iii) object icons, *Suomela* does. Rosenberg, 63.

Suomela discloses displaying a map on a mobile device including “global positioning system (GPS) hardware 22.” *Suomela*, 2:14-15, 3:3-6, Figs. 3, 4, 6. The displayed map has two areas—a detail area and an object area. *Id.*, 2:1-5. The detail area is “located in a substantially central portion of the map” and includes details, like street names and buildings, which allow a user to follow a route. *Id.*, 2:1-13. The object area is “located in a peripheral portion of the map” and includes **objects representing geographic POIs**. *Id.*, Abstract, 2:1-13. Objects are “shown in the object area in orientations related to the detail area.” *Id.*, 2:5-6. **The objects** include indicators showing direction and distance from the center of the map to each object. *Id.*, 4:34-56. Rosenberg, 64.

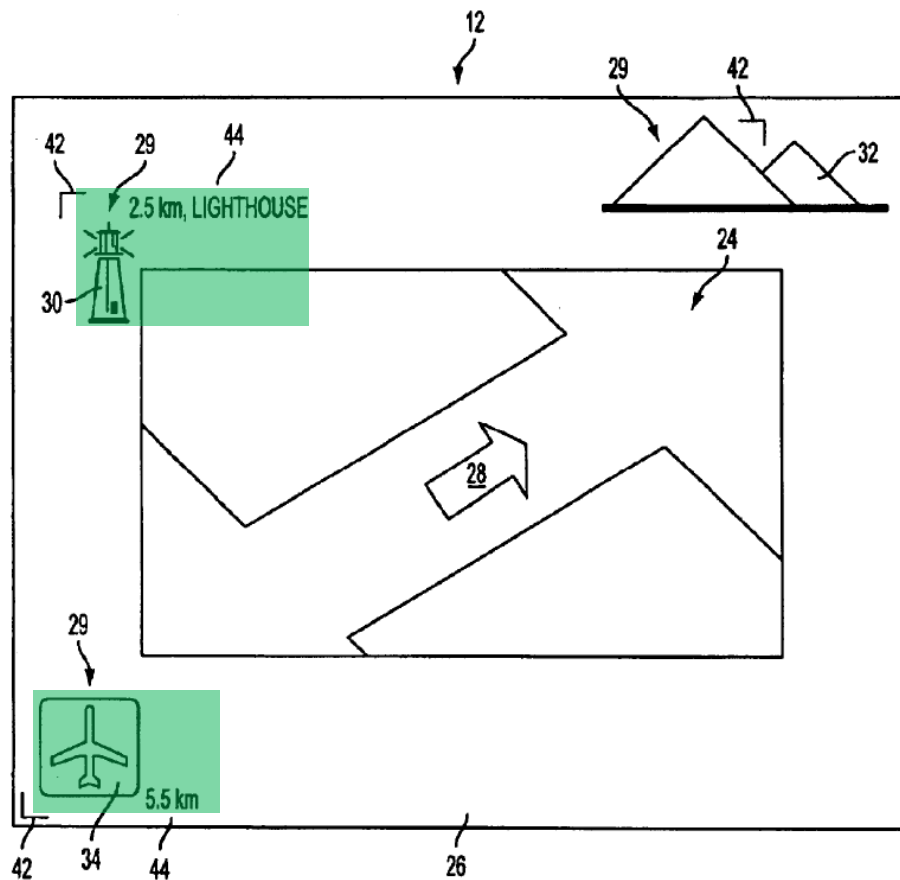


FIG. 5

Suomela, Fig. 5.

The '527, *Kreitler*, and *Suomela* are all in the field of mapping on electronic devices. All three address the known problem of displaying information about MOs outside of the visible area, with *Kreitler* and *Suomela* disclosing known solutions, the combination of which yields predictable results. Therefore, it would have been obvious for a POSITA to combine *Kreitler* and *Suomela* for a more effective and efficient navigation system showing POIs located outside of the visible map-area. Rosenberg, 65.

First, a POSITA would have found it obvious and advantageous to include distance indicators, as taught by *Suomela*, within *Kreitler*'s special icons to provide a user the distance from a position within the selected map to off-map POIs referenced by special icons. Rosenberg, 66.

A POSITA would have been motivated to modify *Kreitler*'s special icons to include distance information, as taught by *Suomela*, to provide users with distance information without needing to specifically request navigation to off-map POIs. A POSITA would have been motivated to modify *Kreitler* to select a display area based on the user's current location, as taught by *Suomela*. This would allow users to effortlessly identify the required travel distance to POIs represented by special icons and to orient themselves while "learning the layout of [a] new city." *Suomela*, 5:16-21. Rosenberg, 67.

A POSITA would have also had a reasonable expectation of success in modifying *Kreitler* to include *Suomela*'s distance indicators, which would have required only routine skill, as calculating and displaying distances between locations on electronic maps was common in the art before the date of the '527. *Kreitler* itself discloses calculating distance information to off-map POIs (*Kreitler*, 7:5-19), and displaying that information would have required only modification of the graphical display within a POSITA's skill. Accordingly, displaying calculated distance information with *Kreitler*'s special icons would have required only

conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 68.

Second, it would have been obvious to a POSITA to improve *Kreitler* with GPS capabilities, as taught by *Suomela*, to enable a user to easily and automatically track their location and identify POIs. A POSITA would have found it obvious to include *Suomela*'s use of current location to select the map area for display for the same reasons. Rosenberg, 69.

Suomela recognizes that navigational digital maps “typically take advantage of global positioning system (GPS) technology to show a user’s current location on the digital map.” *Suomela*, 1:28-30. The GPS technology “is able to continually update and monitor” the location of the user’s device, and therefore, the user can track the steps of a route between the user’s current location and the desired destination. *Id.*, 5:7-16. Rosenberg, 70.

Like *Suomela*, *Kreitler* discloses displaying electronic maps on a “mobile device including ... a PDA or cellphone.” *Kreitler*, 12:3-13. A POSITA would have been motivated to incorporate GPS capabilities, as taught by *Suomela*, in *Kreitler* to take advantage of the benefits of GPS, recognized by *Suomela*. The combination of *Kreitler* and *Suomela* would allow the user to obtain navigational information, not only between two location-based items, but also between the user’s current location and a location-based POI. In addition, the combination

would allow users to monitor their current location as they travel between two location-based items. Indeed, using a GPS in a mobile device to track current location was common well before the '527 patent, and the '527 patent does not purport to invent GPS navigation. Ex. 1011; Ex. 1013-1015; Ex. 1016, 26:35-59, 32:60-33:24 (a PDA including GPS); Ex. 1017, 11 (client devices including GPS). Rosenberg, 71.

A POSITA would have also had a reasonable expectation of success in modifying *Kreitler* to include *Suomela*'s mobile device with GPS capabilities, which would have required only routine skill, as displaying electronic maps and map items on mobile devices with GPS capabilities was common in the art before the date of the '527 patent. Ex. 1011; Ex. 1013-1015; Ex. 1016, 26:35-59, 32:60-33:24; Ex. 1017, 11; Accordingly, using a mobile device with GPS capabilities, as taught by *Suomela*, with *Kreitler* would have required only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 72.

Third, a POSITA would have found it obvious and advantageous to include object icons, taught by *Suomela*, with *Kreitler*'s special icons to orient a user "to a new city that is unfamiliar" by displaying graphical representations of items of interest not within the visible area of the map. *Suomela*, 3:60-63, 4:62-5:21. Furthermore, such a modification would improve user experience by allowing a

user to graphically determine the type of POI (e.g., lighthouse) referenced by *Kreitler*'s special icons. Rosenberg, 73.

A POSITA would have also had a reasonable expectation of success in modifying *Kreitler* to include *Suomela*'s object icons, which would have required only routine skill, as displaying map icons graphically representing landmarks was common in the art before the date of the '527 patent. *Kreitler* itself discloses icons depicting landmarks within the visible map area. *Kreitler*, 5:10-13 ("For example, hotels are displayed by icons depicting a bed."); *see also id.*, 6:60-62 (disclosing using any type of icon as special icons). Altering *Kreitler*'s special icons to include graphical representations of corresponding landmarks would have required only modification of the graphical display within a POSITA's skill. Accordingly, incorporating icons that graphically represent off-map location-based items with *Kreitler*'s special icons would have required only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 74.

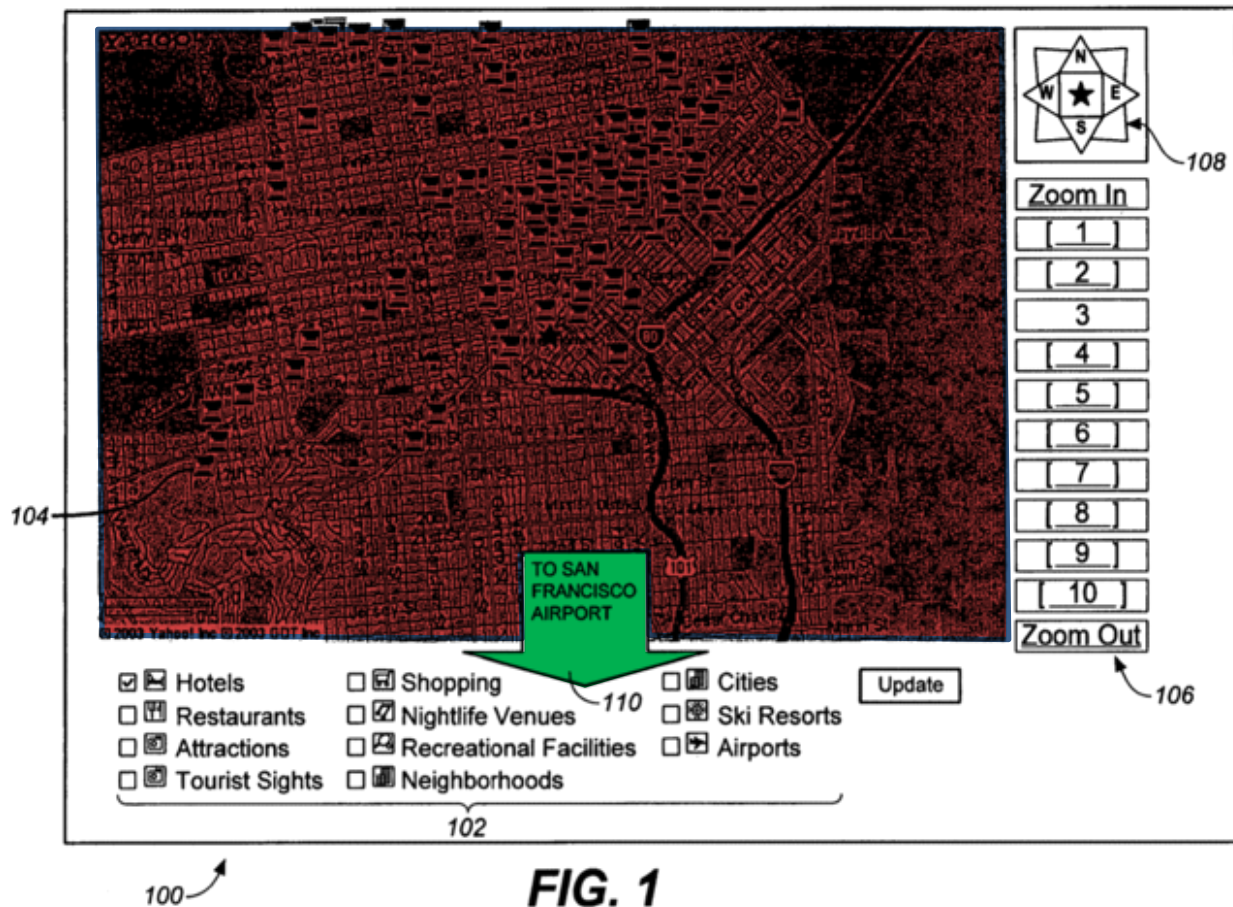
B. Independent Claims

1. Claim 1

- a. [1pre]: A method for displaying object vector indicators ("OVI") and mapping-media content, referencing map-objects ("MO") on an electronic map, comprising:**

Kreitler discloses [1pre] through displaying electronic maps including special icons (OVIs) identifying off-map POIs (MOs) and associated summary boxes showing information (mapping-media content). Rosenberg, 75.

Kreitler discloses displaying POIs (MOs) on electronic maps. *Kreitler*, 3:33-36, 12:3-12. POIs are objects or locations “that may be of interest to any person.” *Id.*, 3:37-43. Each POI is represented by an icon. *Id.*, 5:10-13. POIs positioned beyond the visible map are displayed using “special (distinctive) icons,” as illustrated below. *Id.*, 6:43-62. Rosenberg, 76.

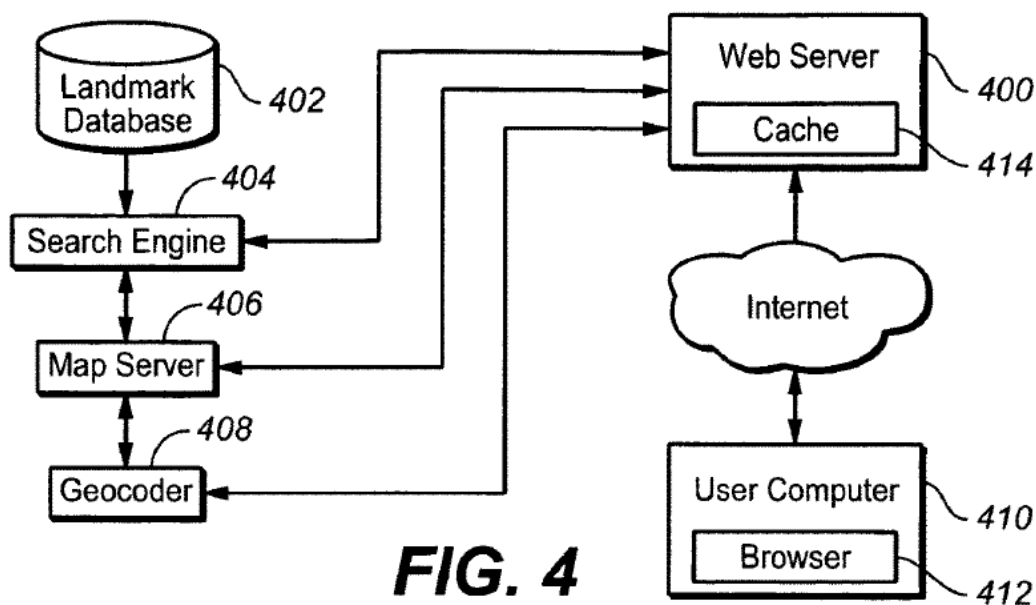


Kreitler, Fig. 1.

Kreitler also discloses **mapping-media content**. The '527 patent explains “information referenced by the OVI may include any visual media (e.g., diagram, photo, audio/video, an illustration, a wire-frame diagram etc.) associated with the MO referenced by the OVI,” such as “advertising by stores” or “photographs of [a] mall.” '527, 2:36-44. Like the '527, *Kreitler* discloses summary boxes for, e.g., hotels including “hotel name, address, room rate, or special offers . . . , and perhaps an image.” *Kreitler*, 6:15-25, 14:11-13. Rosenberg, 77.

b. [1a]: obtaining a MO from a mapping service;

Kreitler teaches [1a] because *Kreitler* discloses a “system for providing interactive maps via the Internet” that includes landmark database 402 in communication with map server 406, both of which are in communication with web server 400, which is in turn in communication with user computer 410 over the Internet. *Kreitler*, 10:25-11:8, 11:40-12:22, Fig. 4. Rosenberg, 78.



Kreitler, Fig. 4.

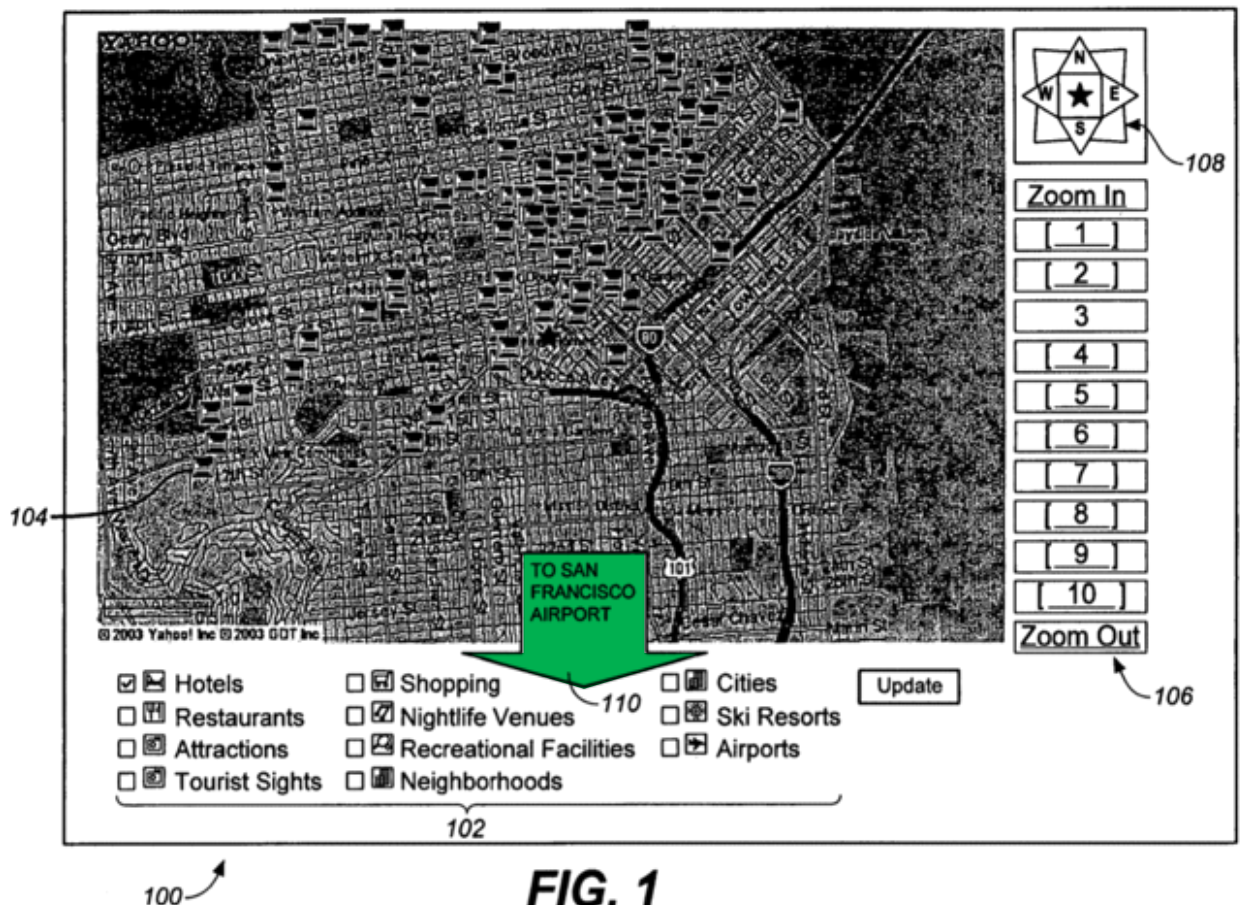
Kreitler's "[c]ontent database 402 ... contains information about different kinds of items, for example, hotels, airports, [and] restaurants" (MOs). *Id.*, 10:65-11:8. In the same system as seen in Fig. 4, *Kreitler* also discloses "the map server 406 is one developed and used by Yahoo! Maps," and, together with the additional remote elements of Fig. 1, constitutes a mapping service. *Id.*, 10:27-32. Rosenberg, 79.

- c. **[1b]: determining that coordinates of the MO are not within a selected area of the electronic map;**

Kreitler teaches [1b] by determining whether a POI is within the visible map and, if not, displaying special icons for the POI. *Kreitler*, Fig. 15, 15:48-16:17 ("a

determination is made whether the item is located within the current radius of the center of the map”); Rosenberg, 80.

Kreitler “display[s] **special (distinctive) icons** for items not positioned on the map but nonetheless may be of interest to the user.” *Kreitler*, 6:43-45. Figure 1’s **special icon 110** corresponds to “San Francisco Airport,” which was determined to be “to the south of the city” (outside the selected map-area). *Id.*, Fig. 1, 6:50-55. Rosenberg, 81.



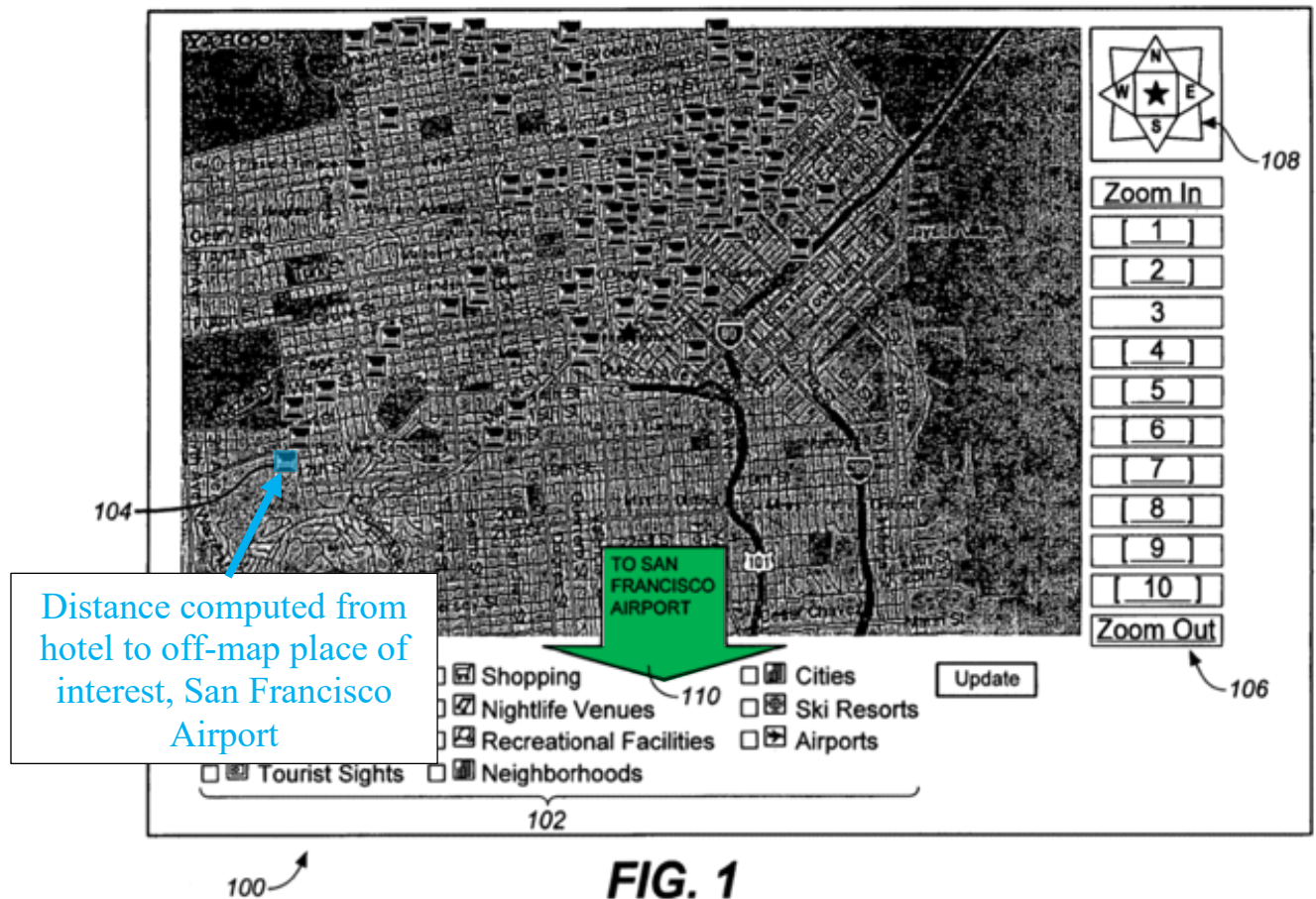
Kreitler, Fig. 1.

Kreitler “recognize[s] that this airport is close by (e.g., within 100 miles), but it doesn’t fit on the map, so the link or specific icon is displayed.” *Id.*, 6:65-7:4; Rosenberg, 82.

d. [1c]: computing distance and travel-related information to the MO

Kreitler teaches [1c] via determining navigational information including distance and direction (distance and travel-related information) to an item of interest (MO). Rosenberg, 83.

Kreitler teaches that selecting hotel 104 “would allow the user to obtain the distance of other items [(MOs)] in relation to the selected hotel” *Kreitler*, Fig. 1, 5:36-41, 6:43-45, 7:5-31; ’527, 2:18-21 (distance and direction are “information”). *Kreitler* also discloses creating and displaying a **special icon (OVI)** indicating an **off-map MO** including the direction of the MO (travel-related information). *Kreitler*, 6:51-57; ’527, 2:18-21. Figure 1 shows a special icon referencing “San Francisco Airport” configured as “an arrow icon” “that points in the general direction of San Francisco Airport.” *Kreitler*, 6:51-57; Rosenberg, 84.



Kreitler, Fig. 1.

- e. [1d]: displaying an OVI containing the distance and travel-related information;

Kreitler/Suomela renders obvious [1d].

Kreitler discloses displaying the special icon corresponding to “San Francisco Airport” at the computed location on the “south border” of the map, as shown below. *Kreitler*, Fig. 1, 6:50-55; Rosenberg, 85.

Kreitler teaches a **special icon (OVI)** indicating an **off-map MO** and “an **arrow icon**” “that points in [its] general direction” (travel-related information).

Kreitler, Fig. 1, 6:51-57; '527, 2:18-27; Rosenberg, 86.

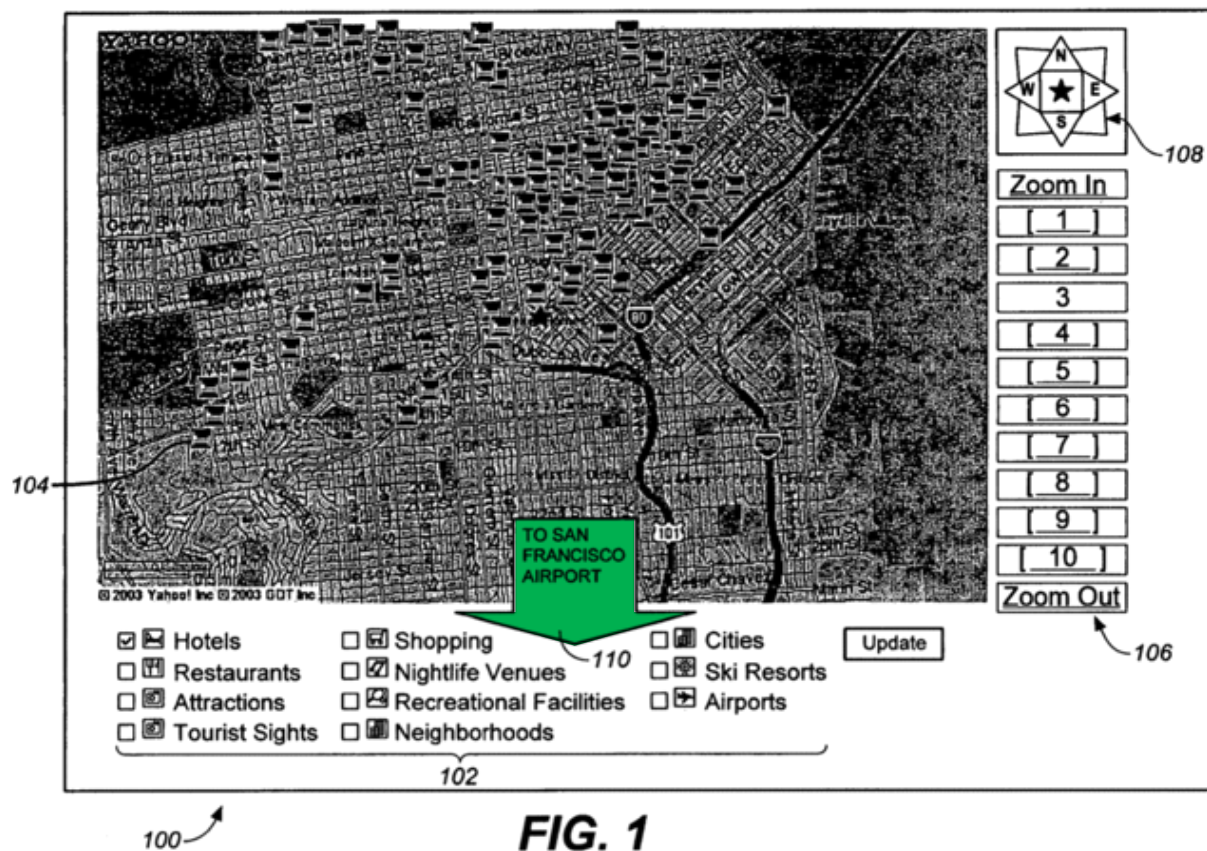


FIG. 1

Kreitler, Fig. 1.

Kreitler does not expressly disclose displaying an OVI with **distance information**, but suggests it by computing distance and driving directions, as explained for [1c] (§VI.B.1.d). *Suomela* expressly discloses displaying both distance and travel-related information. Rosenberg, 87.

Like *Kreitler*, *Suomela* discloses “a digital map” including objects “in a peripheral portion” representing off-map locations, placed according to the off-map locations’ directions. *Suomela*, Abstract, Fig. 5, 2:1-15, 4:34-41; Rosenberg, 88.

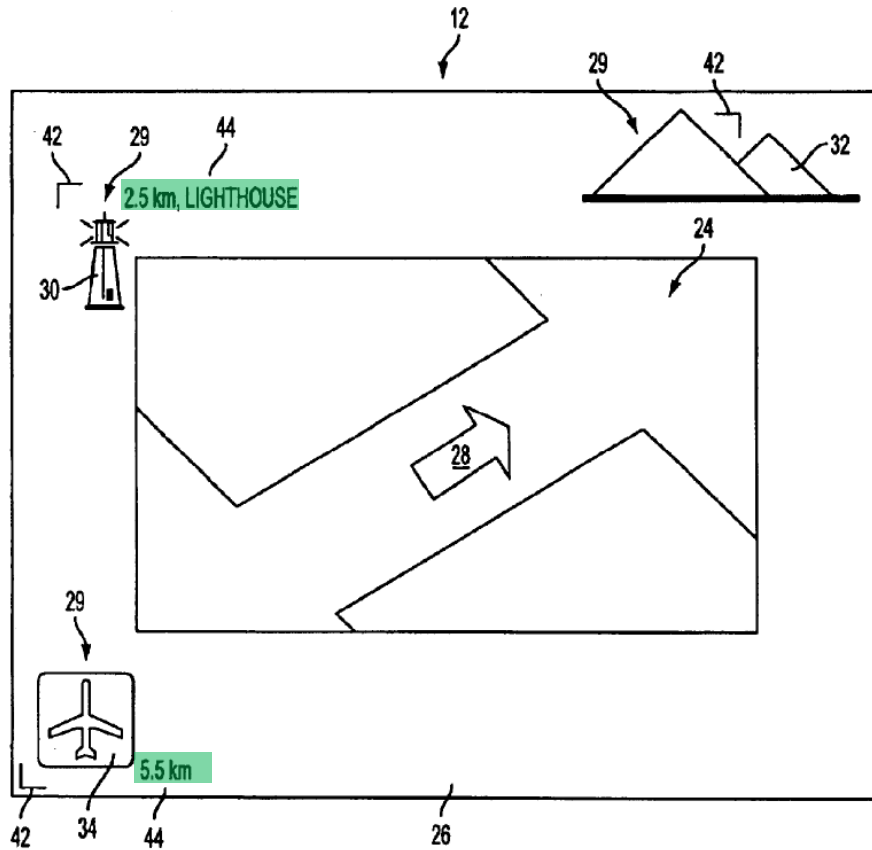


FIG. 5

Suomela, Fig. 5.

A POSITA would have been motivated to add *Suomela*’s distance and travel-related information to *Kreitler*’s OVI to provide further helpful information to a user. §VI.A; Rosenberg, 89.

f. [1e]: receiving user input selecting the OVI

Kreitler discloses [1e] via user input where the user may hover over the special icon (OVI). *Kreitler*, 6:14-18 (“hovering the cursor ... over an icon allows the user to view a summarization of pertinent information about that item”); Rosenberg, 90.

g. [1f]: retrieving mapping-media content associated with the selected OVI;

Kreitler discloses [1f] via summary boxes that include “a summarization of pertinent information about that item” (MO) when the user “hover[s] the cursor ... over an icon,” including mapping-media content, such as an “image of a room interior” of a hotel. *Kreitler*, 6:14-29; Rosenberg, 91-92.

h. [1g]: and displaying the mapping-media content.

Kreitler discloses [1g].

As explained in [1f] (§VI.B.1.g), a summary box containing pertinent information about an item (mapping-media content) is displayed. *Kreitler*, 6:15-18, 13:24-27, 13:54-59, Fig. 3; Rosenberg, 94.

2. Claim 13

a. [13pre]: An apparatus, comprising:

Kreitler discloses [13pre] by disclosing a mobile device (apparatus). *Kreitler*, 12:3-9, Fig. 4 (block diagram); Rosenberg, 95.

- b. [13a]: a display device configured to display a first portion of an electronic map and an object vector indicator (OVI),

Kreitler discloses [13a] via “generating ... a rendering of ... location-based data overlaid on the map[] and displaying the rendering on the client computer” and by displaying the special icon corresponding to “San Francisco Airport” at the computed location on the “south border” of the map, as shown below. *Kreitler*, Fig. 1, 1:43-46, 6:50-55, 12:13-16, 13:8-11; Rosenberg, 96.

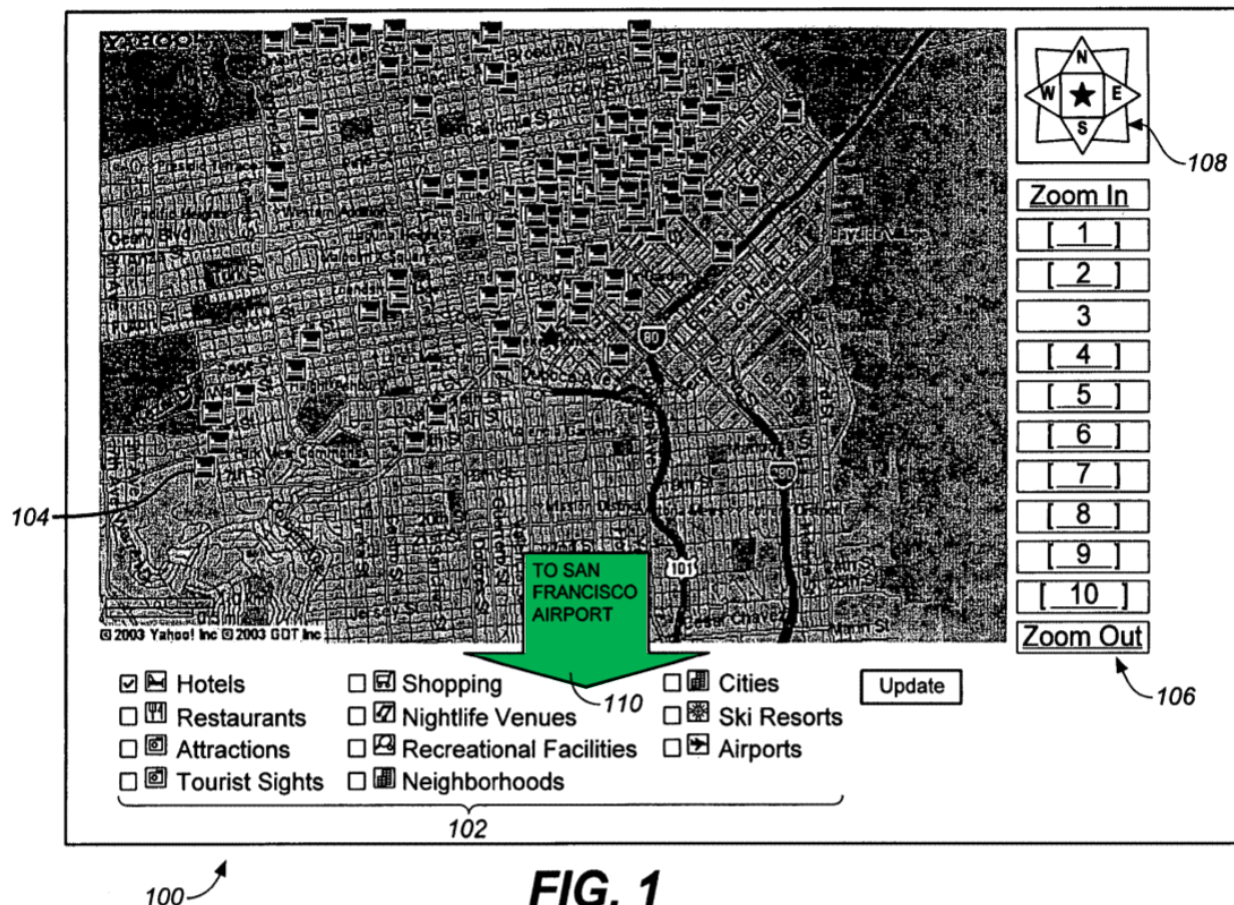


FIG. 1

Kreitler, Fig. 1.

- c. **[13b]: wherein the OVI provides reference information for a map object (MO) which is not visible on the first portion of the electronic map;**

Kreitler teaches [13b] via special icons representing POIs outside the visible map area as explained in [1b] (§VI.B.1.c). *Kreitler* discloses the OVI provides reference information for a MO, because *Kreitler*'s user selects an item to obtain navigational information including distance and driving directions to other items relative to the selected item. *Id.*, 7:5-9; '527, 2:9-13 ("In response to a user's selecting an OVI ... information referenced by the OVI may be retrieved and displayed...."); Rosenberg, 97.

- d. **[13c]: a processing device, configured to:**

Kreitler discloses [13c] via "general-purpose processor" implementing "computer program code" that performs *Kreitler*'s mapping. *Kreitler*, 25:8-19; Rosenberg, 98.

- e. **[13d]: receive a user input indicating selection of the OVI;**

Kreitler teaches [13d], as explained in [1e] (§VI.B.1.f). Rosenberg, 99.

- f. **[13e]: in response to receiving the user input, cause the display device to display media content associated with the MO.**

As explained in [1e] and [1g] (§§VI.B.1.f and VI.B.1.h), *Kreitler* discloses [13e], teaching "hovering the cursor ... over an icon" (user input) and, in response,

displaying “a summarization of pertinent information about that item” (media content associated with the MO), such as “an image of the room interior” of a hotel. *Kreitler*, 6:14-25; Rosenberg, 100.

3. Claim 18

a. [18pre]: An apparatus, comprising:

Kreitler discloses [18pre], as explained in [13pre] (§VI.B.2.a). Rosenberg, 101.

b. [18a]: a display device configured to display a first portion of an electronic map and an object vector indicator (OVI),

Kreitler discloses [18a], as explained in [13a] (§VI.B.2.b). Rosenberg, 102.

c. [18b]: wherein the OVI provides reference information for a map object (MO) which is not visible on the first portion of the electronic map;

Kreitler discloses [18b], as explained in [13b] (§VI.B.2.c). Rosenberg, 103.

d. [18c]: a processing device, configured to:

Kreitler discloses [18c], as explained in [13c] (§VI.B.2.d). Rosenberg, 104.

e. [18d]: identify a user selection of the OVI;

Kreitler discloses [18d], stating “[w]hen the user clicks on that [special] icon 110” (the OVI). *Kreitler*, 6:58-60. Unlike [1e] (§VI.B.1.f), reciting user input, [18d] refers to user selection resulting in an adjustment to the map-display as explained in [18e] (§VI.B.3.f). *Kreitler* discloses both user input (the user

“hover[s] the cursor ... over an icon”) and user selection (clicking). *Id.*, 6:14-29, 6:58-60; Rosenberg, 105-107.

- f. **[18e]: in response to identifying the user selection, cause the display device to display a second portion of the electronic map.**

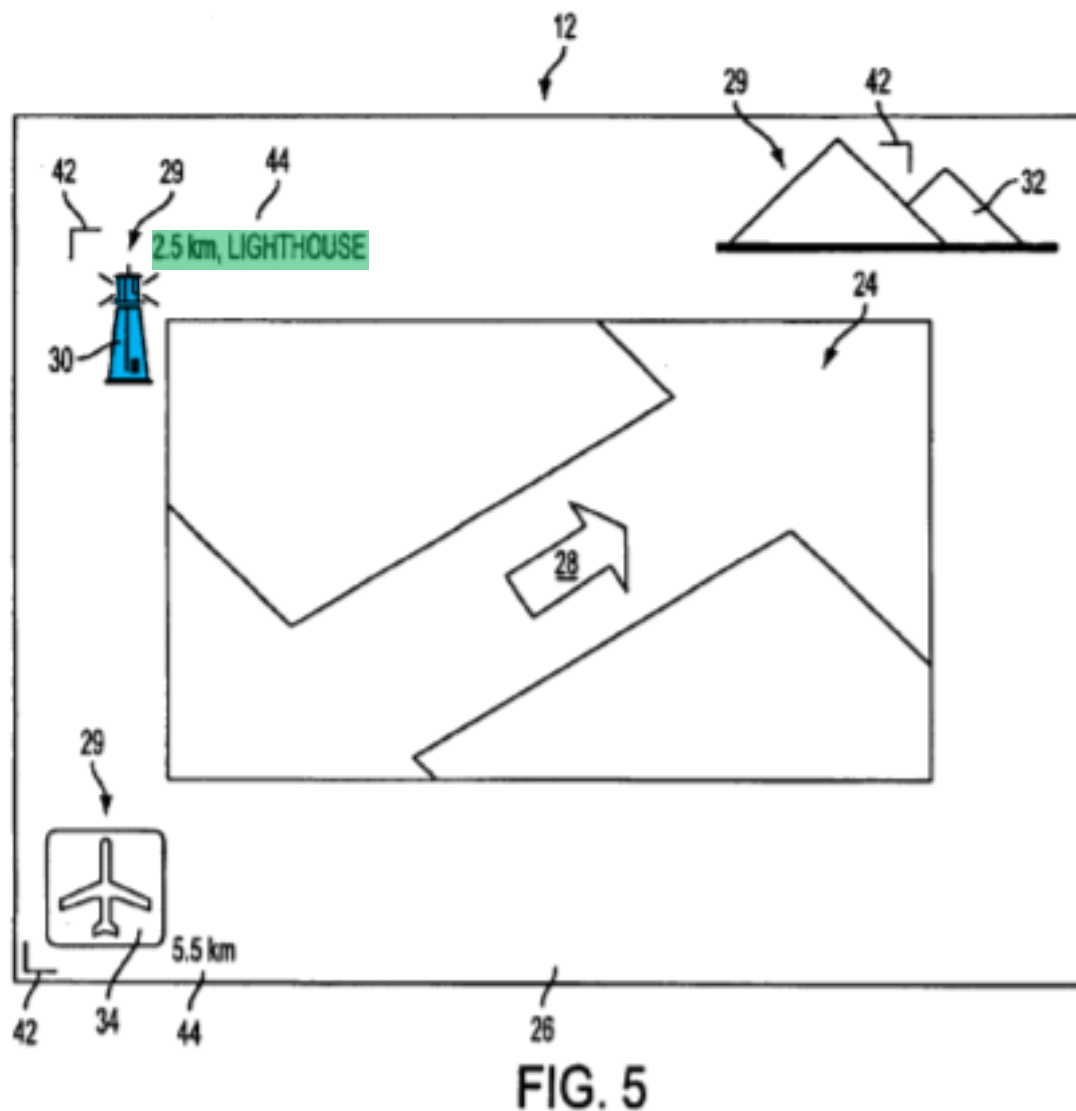
Kreitler discloses [18e] because in response to a user selecting a special icon, *Kreitler* “re-centers and resizes the map” displaying a second map portion containing the special icon’s POI “to show San Francisco Airport in the image.” *Kreitler*, 6:58-60; Rosenberg, 108.

C. Dependent Claims

- 1. **Claim 2: wherein the distance to the MO is computed from a center of the selected area of the electronic map.**

Kreitler/Suomela renders obvious claim 2.

Kreitler states “[e]ach map is defined by its center point,” *Kreitler*, 5:4-6, and *Suomela* discloses “distance indicators 44 show the distance from the center of the map or location indicator 28 to each of objects 29.” *Suomela*, 4:34-41; §VI.A; Rosenberg, 110.

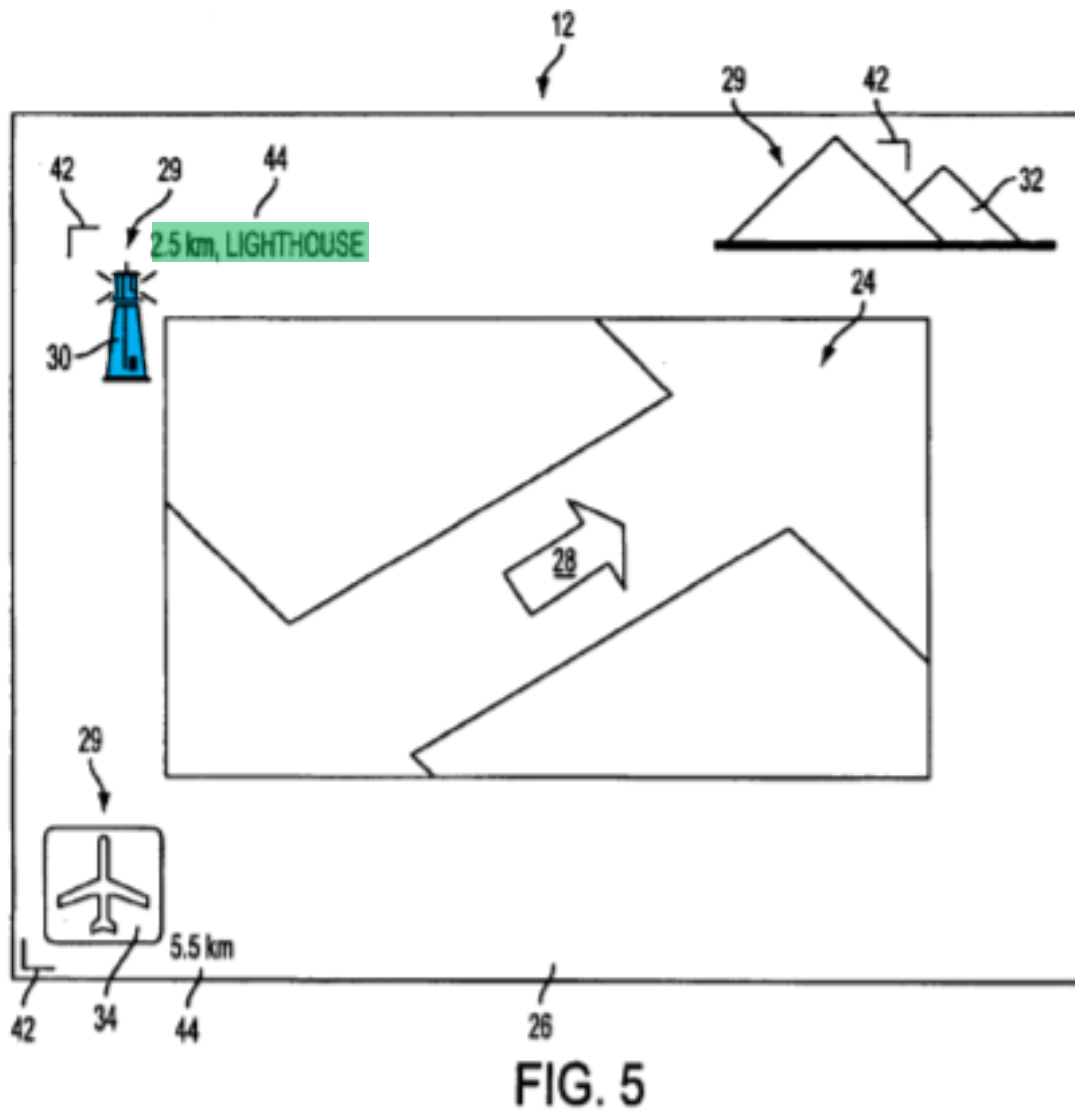


Suomela, Fig. 5.

A POSITA would have been motivated to implement *Suomela's* distance indicators that calculate distance with *Kreitler's* defined center point of each map, as explained in §VI.A. Rosenberg, 111.

- 2. Claim 3: wherein the distance to the MO is computed from a location marker on the electronic map.**

Kreitler/Suomela renders obvious claim 3 through *Suomela*'s "location indicator 28, which shows a location of interest around which the digital map is generally centered." *Suomela*, Fig. 4, 3:35-37, 4:34-41 ("distance indicators 44 show the distance from the center of the map or location indicator 28 to each of objects 29"); §VI.A; Rosenberg, 112-113.



Suomela, Fig. 5.

3. Claim 4: wherein the user input comprises a voice command.

Kreitler/Suomela renders obvious claim 4.

Kreitler discloses selection functions, including “clicking on the item or holding the cursor over the item”, “may be done using voice activation.” *Kreitler*, 17:9-11, 17:29-31; Ex. 1021 (“People who have difficulty using a computer mouse can use voice recognition software to control their computers with verbal commands.”); Ex. 1022, Abstract (“A user speaks voice commands into the microphone, with the computing device ... interprets the voice command and causes the graphical or non-graphical application to be commanded and controlled consistent with the use of a physical mouse.”); Ex. 1023 (“Voice commands allow the user to control an application by speaking commands through an audio input device rather than by using the mouse or keyboard.”); Rosenberg, 115.

4. Claim 7: wherein the OVI comprises a graphical representation of the MO.

Kreitler/Suomela renders obvious claim 7.

Suomela discloses objects displayed “in a peripheral portion of the map” represent geographical locations of interest not visible within the detailed map area. *Suomela*, Abstract, 2:1-13. The objects “include icons that each represent a geographical location.” *Id.*, 3:58-60. As shown below, “one object includes a

lighthouse icon 30 representing the geographical location where an actual lighthouse (not shown) is located.” *Id.*, 3:59-63; §VI.A; Rosenberg, 117.

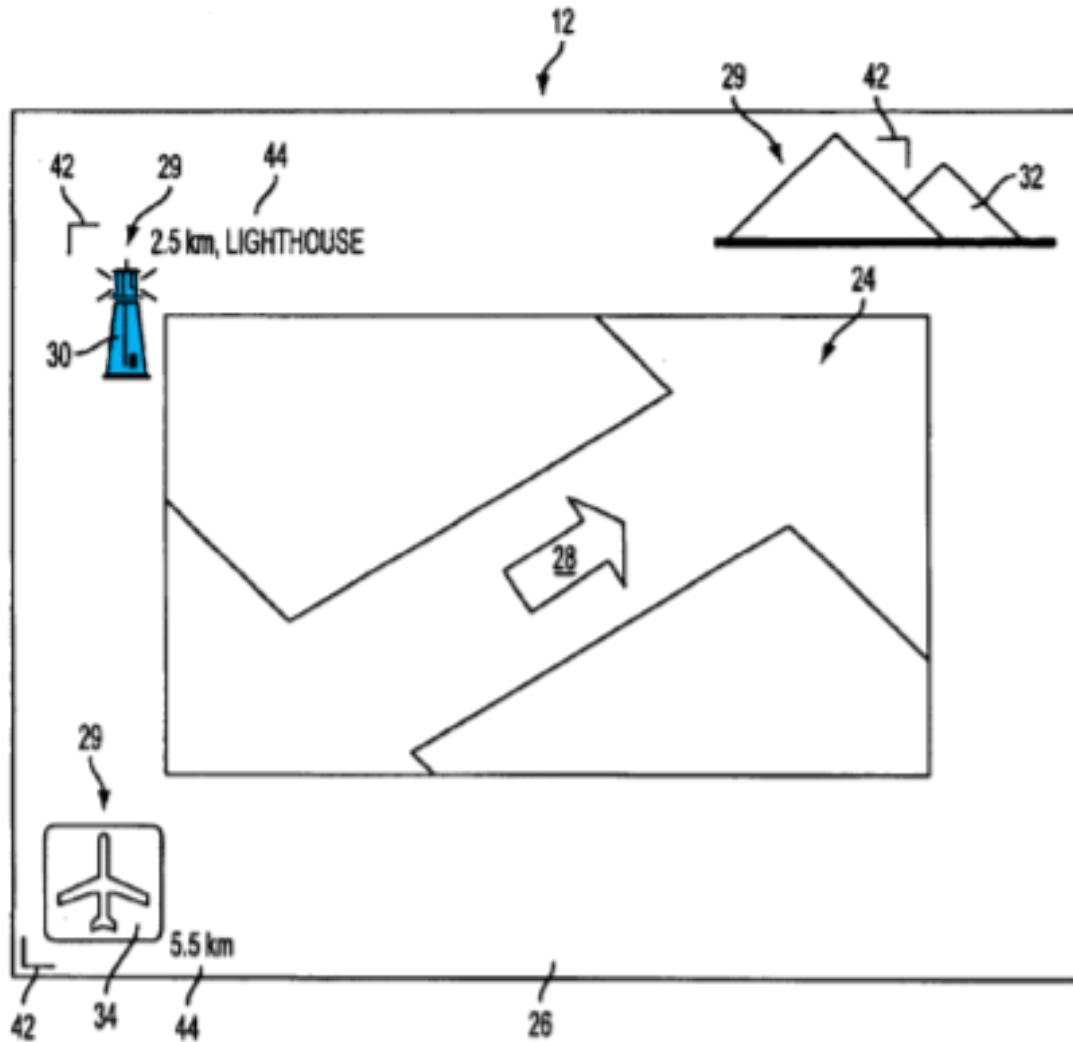


FIG. 5

Suomela, Fig. 5.

As explained in §VI.A, a POSITA would have been motivated to combine *Suomela*’s object icons with *Kreitler* and had a reasonable expectation of success in doing so. Rosenberg, 118.

5. Claim 10

a. [10a]: obtaining a position of an electronic device configured to display the electronic map;

Kreitler/Suomela renders obvious [10a].

Kreitler/Suomela renders obvious [10a] because *Suomela* “receives GPS transmissions ... [and] determine[s] current location information for mobile device 10.” *Suomela*, 3:14-17; *see also id.*, 1:27-34, 3:2-20; §VI.A; Rosenberg, 120.

b. [10b]: transmitting the position of the electronic device to a remote server;

Kreitler/Suomela renders obvious [10b].

Kreitler discloses “transmitting a map request from a client computer to a server.” *Kreitler*, 1:39-40. *Kreitler* also discloses “transmitting a map request from a first user at a first client computer to a web server, including a request for ... user-defined location-based data.” *Id.*, 1:48-51. While *Kreitler* discloses transmitting a request for user-defined location-based data to a remote server, *Kreitler* does not teach that the request includes the position of the electronic device. Rosenberg, 122.

Suomela discloses “GPS hardware 22 receives GPS transmissions ... [and] determine[s] current location information for [a] mobile device.” *Suomela*, 3:14-17; Rosenberg, 123.

A POSITA would have found it obvious to modify *Kreitler* to obtain map information centered on the *Suomela*'s GPS location in order to automate the process of location selection and provide the user with immediately useful map information. §VI.A; Rosenberg, 124-125.

c. [10c]: receiving, from the remote server, the distance-and-travel information.

Kreitler/Suomela renders obvious [10c].

As explained for [1c] (§VI.B.1.d), *Kreitler* discloses computing distance and travel-related information. This is *receive[ed] from the remote server* because *Kreitler* teaches “receiving, in the client computer, dynamic, location-based data from a content provider,” and that a “server transmits the map data from the map server to the client, and the client receives the map data.” *Kreitler*, 1:40-46, 18:21-53, Figs. 22 and 27. Further, the '527 lists “Yahoo!® Maps” as an exemplary mapping server-based mapping service, and *Kreitler* teaches that “approximate driving time between [two] points and/or the direction of a straight path connecting the two locations may” be obtained when “the locations of the two points are fed to ... Yahoo! maps” *Id.*, 7:16-30, 11:59-61 (“The search engines can be hosted locally or on remote servers”). Rosenberg, 127.

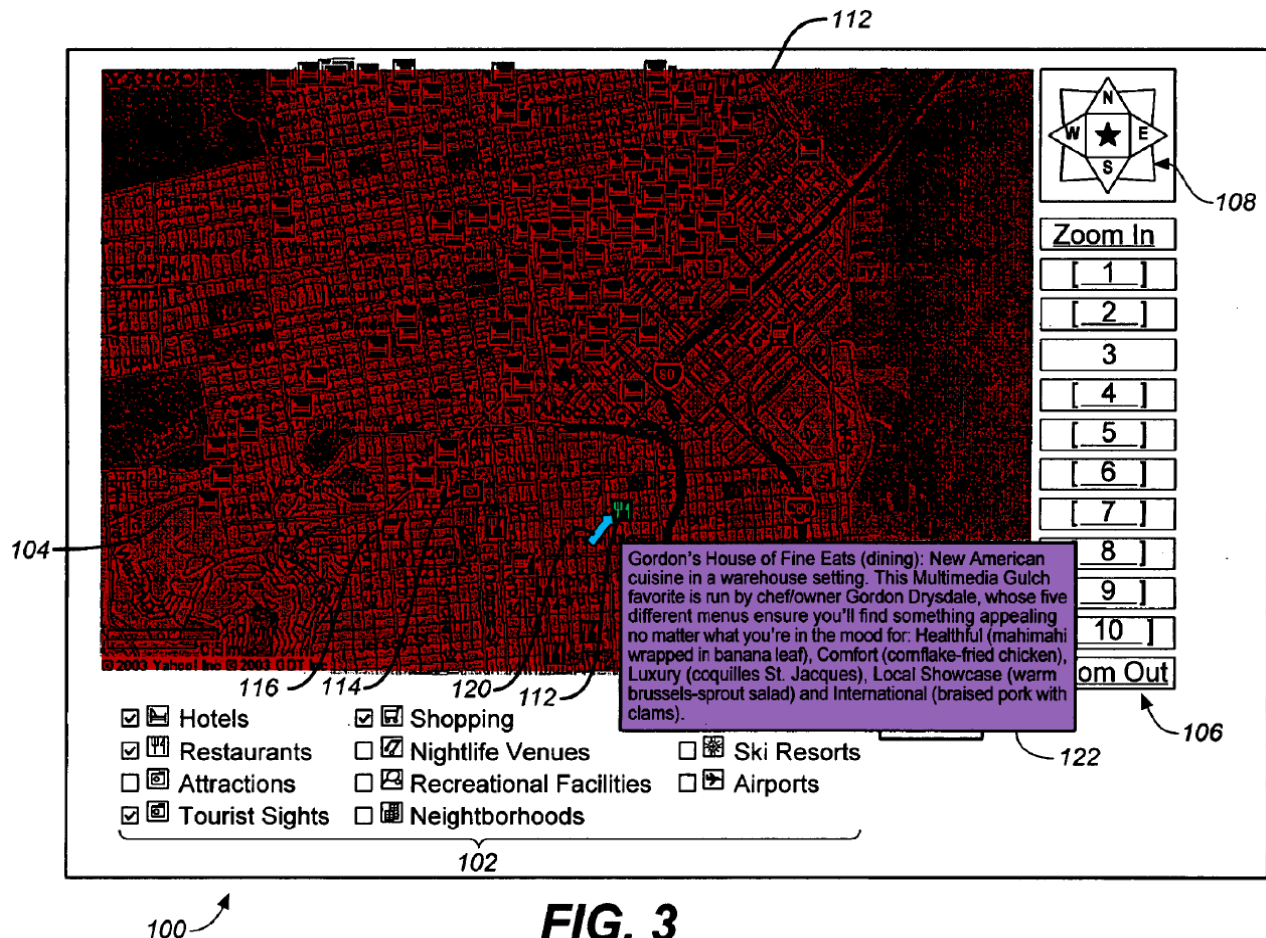
6. Claim 11

a. [11pre]: wherein displaying the mapping-media content comprises overlaying the mapping-

media content over at least a portion of the selected area of the electronic map, and wherein the method further comprises:

Kreitler/Suomela renders obvious [11pre].

As explained in [1pre] (§VI.B.1.a), *Kreitler*’s summary boxes contain ***mapping-media content***. *Kreitler*’s summary boxes are displayed over a portion of the visible map area in response to a user selection. In Figure 3, summary box 122 overlays at least a portion of map 100 in response to a “user hover[ing] cursor 120 over a restaurant icon 112.” *Kreitler*, 6:18-22. Rosenberg, 129.



Kreitler, Fig. 3.

b. [11a]: receiving user input;

Kreitler/Suomela renders obvious [11a].

As explained in [1e] (§VI.B.1.f), *Kreitler* discloses a user may hover a cursor or other pointing device over an icon causing a summary box to be displayed that provides information about a location-based item associated with the icon. The summary box “only appears when the item is selected.” *Kreitler*, 13:54-59; *see also id.*, Figs. 6-13 (illustrating summary boxes 630 overlaying a map 600 that only appear when a cursor 620 hovers over or selects an icon associated with the displayed summary box). A POSITA would have understood that *Kreitler* receives user input when a user moves a cursor away from a first location hovered over a first icon because the summary box associated with the first icon “only appears when the item is selected,” enabling the user to view other icons and summary boxes associated with those icons without obscuring the displayed map. *Id.*, 13:54-59; Rosenberg, 131.

c. [11b]: in response to receiving the user input, eliminating the mapping-media content.

Kreitler/Suomela renders obvious [11b].

As explained in [11a] (§VI.C.6.b), *Kreitler*’s summary box only appears when a user hovers over the corresponding icon and, therefore, a POSITA would

have understood that, in response to a user moving the cursor away from the icon, *Kreitler* eliminates the summary box from the display to enable the user to view other icons and summary boxes without obscuring the map. Rosenberg, 133.

7. Claim 12: restoring the portion of the selected electronic map that was overlaid with the mapping-media content.

Kreitler/Suomela renders obvious claim 12.

As explained in [11b] (§VI.C.6.c), *Kreitler*'s summary box only appears when a user hovers over the corresponding icon, and therefore a POSITA would have understood that *Kreitler* at least suggests that the summary box would be removed from the display when the user moves the cursor away from the icon. A POSITA would have also understood that *Kreitler* would restore the portion of the map previously overlaid with the summary box, because by simply moving a cursor away from the summary box, a user does not initiate a zooming, panning, or other modifying function to alter the displayed map but rather indicates a desire to return to the map as displayed before it was overlaid with the summary box. Rosenberg, 135.

8. Claim 14: wherein the reference information comprises a distance from the apparatus to the MO and an estimated time of travel.

Kreitler/Suomela renders obvious claim 14.

Kreitler discloses “hovering the cursor ... over an icon allows the user to view a summarization of pertinent information about that item.” *Kreitler*, 6:15-18. *Kreitler*’s “system may identify the distance between [] two points” and may provide “[a]dditional information such as the approximate driving time between the points.” *Id.*, 7:13-19; Rosenberg, 137.

A POSITA would have understood that, in response to the user hovering the cursor to view additional information, *Kreitler*’s summarization of pertinent information may also include the distance from the apparatus to that item (MO) or the approximate driving time from the apparatus to that item (MO). Rosenberg, 138.

9. Claim 15: wherein the media content comprises a coupon or a sales event associated with the MO.

Kreitler/Suomela renders obvious claim 15 because *Kreitler*’s summary boxes provide “pertinent information about the item[s],” including “special offers” (coupons or sales events) associated with the items. *Kreitler*, 6:14-29; Rosenberg, 139.

10. Claim 17

a. [17a]: wherein the MO is associated with a building,

Kreitler/Suomela renders obvious [17a] because *Kreitler*’s location-based items include buildings, e.g., restaurants, hotels, and airports. *Kreitler*, 3:37-47; *see*

also id., Fig. 1 (illustrating special icon referencing a location-based item, “San Francisco Airport”); Rosenberg, 140.

b. [17b]: wherein the media content comprises a floor plan of the building.

Kreitler/Suomela renders obvious [17b] because *Kreitler*’s summary boxes include “images of room interiors” and “venue or restaurant seating charts” *Kreitler*, 6:22-25, 6:41-42. A POSITA would have known that “a floor plan of a building” includes images of room interiors and seating charts, because those images allow the user to visualize the arrangement or physical features of a structure. Rosenberg, 141.

11. Claim 19: wherein the MO is displayed together with the second portion of the electronic map.

Kreitler/Suomela renders obvious claim [19] because when clicking *Kreitler*’s “San Francisco Airport” special icon, *Kreitler* “re-centers and resizes (re-zooms) the map to show San Francisco Airport [the MO] in the image” *Kreitler*, 6:58-60, 12:32-36; Rosenberg, 142.

VII. GROUND 2: CLAIMS 9 AND 20 ARE OBVIOUS OVER KREITLER IN VIEW OF SUOMELA AND MYR

A. Overview and Motivation to Combine

As explained above, *Kreitler/Suomela* renders obvious most independent claims. Dependent claims 9 and 20 include additional limitations related to identifying travel conditions, calculating a travel route, and computing travel times

along the route. While not expressly disclosed by *Kreitler* or *Suomela*, these limitations are disclosed by *Myr* and it would have been obvious to incorporate travel conditions, travel routes, and times along the route into the *Kreitler/Suomela* combination. Rosenberg, 143.

Myr discloses a real-time travel Guidance System capable of handling a driver's request for the shortest route to any destination. *Myr*, 4:49-51. With this system, the driver "can enter a request for alternative route and will receive an updated route reflecting the real-time traffic situation directly on his display panel," and this information "will also be updated by visual and audio instructions, and driver's vehicle position will be displayed dynamically on the display unit." *Id.*, 4:51-57. A driver may also enter alternate times for future trips and compare travel time estimates for the same destination and receive "an option to select a trip proposal ideally suited" for the driver's needs. *Id.*, 4:57-65; Rosenberg, 144.

First, a POSITA would have found it obvious and advantageous to include travel conditions, as taught by *Myr*, with *Suomela* and *Kreitler* based on user input, such as *Kreitler*, which "may calculate, based on the traffic information, how long is it will take for a vehicle to reach its destination, or allow comparison and selection between one of two routes based on current traffic conditions." *Kreitler*, 21:33-36; Rosenberg, 145.

A POSITA would have been motivated to modify *Kreitler*'s travel information to include travel conditions information, as taught by *Myr*, to provide the user with travel information without requiring the user to specifically request navigation to the off-map items of interest. Such a modification would allow users to effortlessly identify the travel route to POIs in order to orient themselves while “learning the layout of [a] new city.” *Suomela*, 5:16-21; Rosenberg, 146.

A POSITA would have also had a reasonable expectation of success in modifying *Kreitler* to include *Suomela* with *Myr*'s travel conditions. Such a modification would have required only routine skill, as identifying the travel conditions to display travel time information on electronic maps from one location to another was common in the art before the date of the '527 patent. *Kreitler* itself discloses calculating time and distance information to off-map locations of interest, (*Kreitler*, 7:5-19), and adding identification of travel conditions for travel time information to the display would have required only modification within a POSITA's skill. Rosenberg, 147.

Accordingly, displaying calculated travel information based on identified travel conditions with *Kreitler* and *Suomela* would have implemented only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 148.

Second, a POSITA would have found it obvious and advantageous to include the travel route, as taught by *Myr*, with *Suomela/Kreitler*, based on *Kreitler*'s teaching of "calculat[ing], based on the traffic information, how long is it [sic] will take for a vehicle to reach its destination, or allow comparison and selection between one of two routes based on current traffic conditions." *Kreitler*, 21:33-36; Rosenberg, 149.

A POSITA would have been motivated to modify *Kreitler*'s travel information to include the travel route information, as taught by *Myr*, to provide the user with travel information without requiring the user to specifically request navigation to the off-map items of interest. Such a modification would allow users to effortlessly identify the required travel route to items of interest represented to orient themselves while "learning the layout of [a] new city." *Suomela*, 5:16-21; Rosenberg, 150.

A POSITA would have also had a reasonable expectation of success in modifying *Kreitler* to include *Suomela* with *Myr*'s travel route. Such a modification would have required only routine skill, as calculating and displaying the travel route on electronic maps from one location to another was common in the art before the date of the '527 patent. *Kreitler* itself discloses calculating time and distance information to off-map locations of interest, (*Kreitler*, 7:5-19), and adding route information to the display would have required only modification of

the graphical display within a POSITA's skill. Accordingly, displaying calculated travel route information with *Kreitler* and *Suomela* would have implemented only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 151.

Third, a POSITA would have found it obvious and advantageous to include travel time, as rendered obvious by *Myr*, with indicators, as taught by *Suomela*, with *Kreitler*'s special icons to provide a user the time from a position within the selected map to off-map items of interest referenced by the special icons. Rosenberg, 152.

A POSITA would have been motivated to modify *Kreitler*'s special icons to include travel information, as taught by *Myr*, through indicators, as taught by *Suomela*, to provide the user with travel information without requiring the user to specifically request navigation to the off-map items of interest. Such a modification would allow users to effortlessly identify the required travel time to items of interest represented by the special icons and to orient themselves while "learning the layout of [a] new city." *Suomela*, 5:16-21; Rosenberg, 153.

A POSITA would have also had a reasonable expectation of success in modifying *Kreitler* to include *Suomela*'s indicators with *Myr*'s travel time. Such a modification would have required only routine skill, as calculating and displaying travel time on electronic maps from one location to another was common in the art

before the date of the '527 patent. *Kreitler* itself discloses calculating time information to off-map locations of interest, (*Kreitler*, 7:5-19), and adding that information to the display would have required only modification of the graphical display within a POSITA's skill. Accordingly, displaying calculated time information with *Kreitler*'s special icons would have implemented only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 154.

B. Claim 9

Kreitler/Suomela and *Myr* renders obvious claim 9.

1. [9pre]: wherein computing distance-and-travel information comprises:

Kreitler/Suomela render obvious [9pre], as explained in [1c] (§VI.B.1.d).

Rosenberg, 156.

2. [9a]: identifying a change in travel conditions

Kreitler/Suomela/Myr render obvious [9a].

As explained in [1c] (§VI.B.1.d), *Kreitler* discloses obtaining navigational information, including distance and driving directions to other items relative to the selected item. *Kreitler*, 7:5-6. *Kreitler* also discloses content databases 402 contain “information about different kinds of items, for example hotels, airports, restaurants, and also dynamic information such as weather conditions, traffic conditions, environmental measurements and the like.” *Id.*, 10:65-11:3. However,

Kreitler and *Suomela* do not teach travel conditions as fully detailed as in *Myr*.
Rosenberg, 158.

First, *Myr* discloses identifying changes in road conditions known in advance using the Section Travel Time Managing Algorithm. *Id.*, 9:47-64, 10:8-21. Second, *Myr* discloses identifying regular, predictable changes, like everyday slowdowns or rush hours, by collecting statistics on travel times along particular roads, types of roads, hours, or days. *Myr*, 10:3-4, 10:22-36. Third, *Myr* discloses identifying sudden unpredictable changes, such as traffic accidents, traffic congestion due to sudden and drastic changes in weather conditions, to provide “truly real time capabilities.” *Id.*, 10:5-7, 10:37-50; Rosenberg, 159.

As explained in §VII.A, a POSITA would have been motivated to add *Myr*’s identification of changed travel conditions to predict travel times to the *Kreitler/Suomela* combination. Rosenberg, 160.

3. [9b]: computing an estimated time of arrival at the MO;

Kreitler/Suomela/Myr render obvious [9b].

Kreitler also discloses computing “information such as the approximate driving time” to the MO. *Kreitler*, 7:16-17; Rosenberg, 162.

Myr discloses calculating travel routes using current travel times from a starting point to a destination point. *Myr*, 5:59-65, 6:18-19. With the calculated

travel times, a POSITA would have known to add the travel time and the starting time to compute an estimated time of arrival at the MO, simply using basic addition. As explained in §VII.A, a POSITA would have found it obvious to include the travel time calculated by *Myr* in the OVI of *Kreitler-Suomela* to compute an estimated time of arrival by simply adding the travel time with the starting time. Rosenberg, 163.

4. [9c]: displaying the OVI with the estimated time of arrival in response to identifying the change in travel conditions.

Kreitler/Suomela/Myr render obvious [9c].

As explained in [1d] (§VI.B.1.e), *Kreitler* displays the special icon corresponding to “San Francisco Airport” at the computed “south border” of the map. *Kreitler*, Fig. 1, 6:50-55. As explained in [9a] and [9b], (§§VII.B.2 and VII.B.3), *Kreitler/Suomela/Myr* renders obvious identifying the change in travel conditions and calculating a travel time. As explained in §VII.A, a POSITA would have found it obvious to add the travel time calculated by *Myr* to the starting time to display an estimated time of arrival in the OVI to provide helpful information to the user. Rosenberg, 165.

C. Claim 20: wherein the second portion of the electronic map comprises a travel route to the MO.

Kreitler/Suomela/Myr render obvious claim 20.

Kreitler discloses a second portion of the electronic map in [18e] (§VI.B.3.f). Rosenberg, 167.

Myr discloses calculating travel routes from a starting point to a destination point (the location of the MO). *Myr*, 5:59-65, 6:18-19. A POSITA would have understood that a route from the user to the MO would necessarily be comprised within the second map portion because it is centered around the MO. Rosenberg, 168.

As explained in §VII.A, a POSITA would have found it obvious to include the travel route calculated by *Myr* in the second portion of the electronic map of *Kreitler/Suomela* to allow a user to preview their anticipated travel route. Rosenberg, 169.

VIII. GROUND 3: CLAIMS 5-6, 8, 16, 26-27, AND 30 IS OBVIOUS OVER *KREITLER* IN VIEW OF *SUOMELA* AND *ALTMAN*

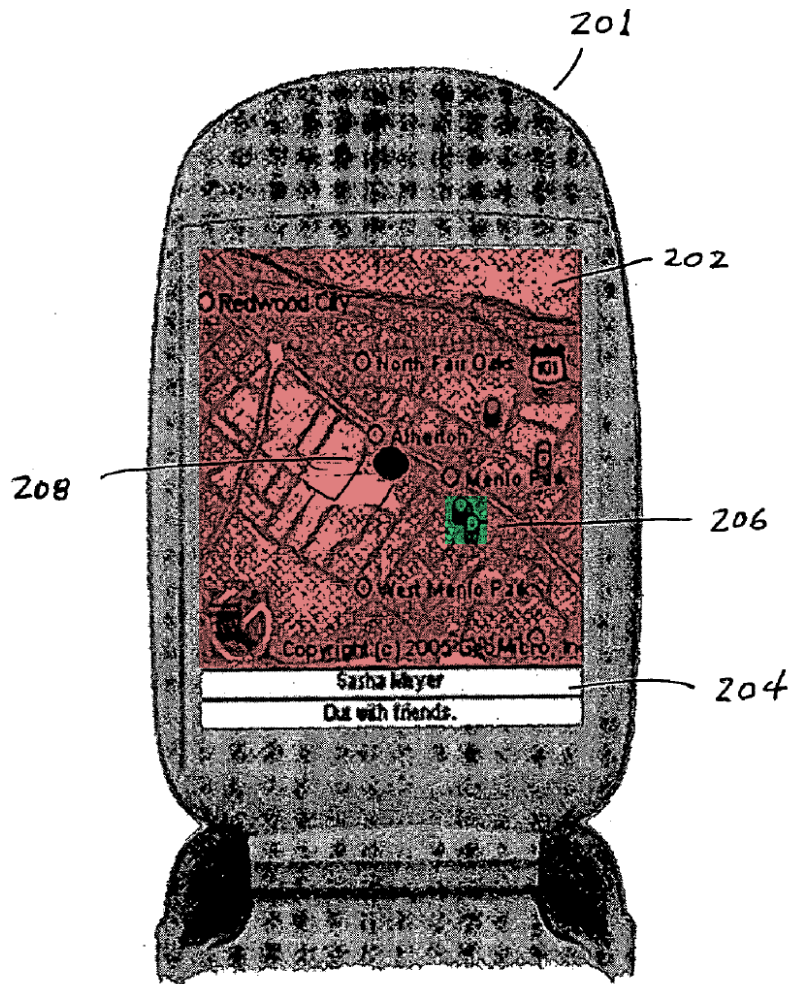
A. Overview and Motivation to Combine

In response to a change in the position of the MO or electronic device, independent claim 26 recites altering an OVI visual characteristic, dependent claims 5 and 6 recite computing OVI placement position, distance, and travel information, claim 8 recites contact information of the MO, claim 16 recites identifying and displaying an image of a social networking member, claims 27 and 30, which depend from claim 26, recite displaying a position of the apparatus or

further altering an OVI. *Kreitler* and *Suomela* do not expressly disclose these features, but *Altman* renders them obvious. It would have been obvious to incorporate computation of distance information after a change in MO position—like another user moving—and identifying another user using their image.

Rosenberg, 170.

Altman discloses location sharing amongst users and displaying shared location information, such as other users' locations and photos on electronic maps. *Altman*, 2:1-31, 3:4, 3:53-55, 3:65-4:1, 5:57-61. *Altman* discloses viewing “on the map the respective locations of one or more other users of mobile communication devices coupled to the mobile communication device over the network.” *Id.*, 2:1-31, 3:65-4:1. *Altman* expressly states the “user can build a database of trusted friends among the one or more other users.” *Id.*, 2:8-19; Rosenberg, 171.



Altman, Fig. 2A.

“Because the users of the mobile devices are inherently transitory, a fundamental data object associated with each of the users of the mobile devices is the location of each user within a particular region.” *Id.*, 4:26-32. “As the user moves, the position of his location on the displayed map is updated in real-time or near real-time.” *Id.*, 7:30:35, 9:56-62. *Altman*’s “database 128 stores [each] user’s picture, and any other associated images,” which “can be displayed on the other user’s mobile devices to provide a visual reference for each user.” *Id.*, 5:57-61,

10:14-17 (“In this embodiment, the same location and status information 506 is displayed for each friend along with an image 508 of that person.”); Rosenberg, 172.

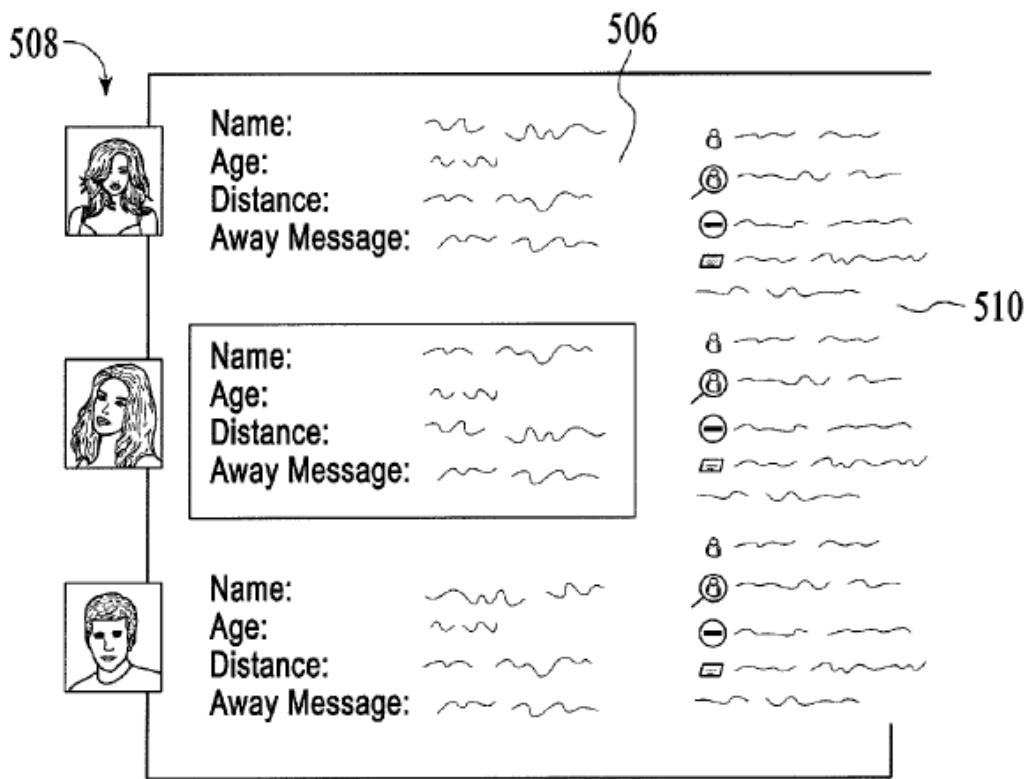


FIG.5B

Altman, Fig. 5B.

The '527, *Kreitler*, *Suomela*, and *Altman* are all in the field of mapping on electronic devices. All address the known problem of updating location information of the user or MO, with *Kreitler/Suomela/Altman* disclosing known solutions for multiple users in real-time, the combination of which yields predictable results. Therefore, it would have been obvious for a POSITA to

combine *Kreitler* and *Suomela* to allow users to track their friends' locations in real-time, obtain information on how far away a friend is, and obtain information on how to travel to meet them. Rosenberg, 173.

First, a POSITA would have found it obvious and advantageous to include real-time updated information of the location and distance of the mobile communication device and users, as taught by *Altman*, within *Kreitler/Suomela*. *Kreitler* specifically teaches map “items could include dynamic location based information such as ... the position of a vehicle.” *Kreitler*, 3:47-51, 22:10-14. *Suomela* discloses “[a] mobile device 10 is able to continually update and monitor its location via GPS hardware 22.” *Suomela*, 5:7-9, 5:13-22. Therefore, a POSITA would have found including *Altman*'s real-time updated information of the location and distance of the mobile communication device and users within *Kreitler/Suomela* to be obvious. Rosenberg, 174.

A POSITA would have been motivated to modify *Kreitler/Suomela* to include real-time information of the location and distance of the mobile communication device and users as taught by *Altman*, because such a modification would allow users to identify the location of and distance from POIs in real-time as the mobile communication device or user moves. Such a modification would allow users to effortlessly obtain relative location information to the POIs. Rosenberg, 175.

A POSITA would have also had a reasonable expectation of success in modifying the OVI in *Kreitler/Suomela* to include *Altman*'s real-time updated information of the location and distance of the mobile communication device and users to represent travel information in real-time to and from POIs. Such a modification would have required only routine skill, because including real-time information of the location and distance of the mobile communication device and users was known in the art before the date of the '527 patent. *Kreitler/Suomela* already disclose a mobile device that is able to continually update and monitor its location and distance and including real-time updated information of the location and distance of the mobile communication device and users would have required only modification of the graphical display within a POSITA's skill. Accordingly, including real-time updated information of the location and distance of the mobile communication device and users to provide real-time information on POIs with *Kreitler/Suomela* would have been implemented using only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 176.

Second, a POSITA would have found it obvious and advantageous to accommodate images of users as taught by *Altman*, within *Kreitler/Suomela*. Having images of other users in *Kreitler/Suomela* would allow for users to easily track friends and recall each friend's face if they had forgotten what their friend

looked like. Adding users' images would broaden the utility of *Kreitler/Suomela* and incorporate a valuable feature. Rosenberg, 177.

A POSITA would have been motivated to include images of other users in a social network, as taught by *Altman*, to help the user recall the face of their friend and identify which friend is which. Such a modification would allow users to effortlessly identify other users or friends, as *Altman* recognizes. Rosenberg, 178.

A POSITA would have reasonably expected success in modifying *Kreitler/Suomela* with *Altman*'s images of other users. Such a modification would have required only routine skill because *Kreitler*, as combined with *Suomela*, already calculates and displays travel information and also already contemplates a system with multiple users, each of which uses a GPS-enabled mobile device that displays the user's own location on a map. *Kreitler*, 4:16-19, 7:5-19; *Suomela*, 1:27-30. Incorporating images of other users or friends in a social network would use the same location calculation and display method already taught by *Kreitler-Suomela*. Displaying the images of other users would require only routine skill to adjust the display—simple software modifications. Such modification would have required conventional and routine skill applied as a POSITA would have readily understood and expected to succeed. Rosenberg, 179.

Third, a POSITA would have found it obvious and advantageous to include contact information, as taught by *Altman*, to *Kreitler/Suomela*'s OVI. Rosenberg, 180.

A POSITA would have been motivated to modify *Kreitler/Suomela* to include phone number information, as taught by *Altman*, because such a modification would allow users to contact the POIs. Such a modification would allow users to effortlessly obtain contact information to contact the POIs, for example, to determine if the POI is available. Rosenberg, 181.

A POSITA would have also had a reasonable expectation of success in modifying the OVI in *Kreitler/Suomela* to include *Altman*'s phone number to represent contact information for POIs. Such a modification would have required only routine skill, because including a phone number information was known in the art before the date of the '527 patent. *Kreitler/Suomela* already discloses an OVI to represent distance and travel-related information, and including a phone number to the OVI would have required only modification of the graphical display within a POSITA's skill. Accordingly, including the phone number to an OVI to provide contact information on POIs with *Kreitler/Suomela*'s OVI that already displays distance and travel-related information would have been implemented using only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 182.

B. Independent Claim

1. Claim 26

a. [26pre]: An apparatus, comprising:

Kreitler discloses [26pre], as explained in [13pre] (§VI.B.2.a). Rosenberg, 183.

b. [26a]: a display device configured to display a first portion of an electronic map and an object vector indicator (OVI),

Kreitler discloses [26a], as explained in [13a] (§VI.B.2.b). Rosenberg, 184.

c. [26b]: wherein the OVI provides reference information for a map object (MO) which is not visible on the first portion of the electronic map;

Kreitler discloses [26b], as explained in [13b] (§VI.B.2.c). Rosenberg, 185.

d. [26c]: a processing device, configured to:

Kreitler discloses [26c], as explained in [13c] (§VI.B.2.d). Rosenberg, 186.

e. [26d]: monitor a change in position of the apparatus;

Kreitler/Suomela renders obvious [26d].

Suomela discloses “mobile device 10 is able to continually update and monitor its location via GPS hardware 22.” *Suomela*, 5:7-9, 5:13-22; Rosenberg, 188.

f. [26e]: in response to identifying the change in position, cause the display device to alter a visual characteristic of the OVI to represent a

**change in spatial relationship between the
apparatus and the MO.**

Kreitler/Suomela/Altman renders obvious [26e].

Altman discloses “mobile communication device 1202 displays the status information for a number of friends” (MOs), including the continually updated distance between the device and the friends obtained, e.g., by polling the mobile device to determine changes in its location. *Altman*, 10:1-5, 18:17-22, 20:33-39; Rosenberg, 190.

As combined with *Kreitler/Suomela*, a POSITA would have understood that change in position of the user’s mobile communication device is a change in position of the apparatus. A POSITA would have also understood that the updated display area with updated distance information based on a change in position between the mobile communication device and the user’s friend is the altered visual characteristic of the OVI to represent a change in distance or a change in spatial relationship between the apparatus and the MO. Rosenberg, 191.

As explained in §VIII.A, it would have been obvious to a POSITA to implement *Altman*’s real-time update of mobile communication device location within *Kreitler/Suomela*. A POSITA would have been motivated to combine *Altman*’s real-time update of distance between the mobile communication device and the user’s friend with the *Kreitler/Suomela* OVI. Rosenberg, 192.

C. Dependent Claims

1. Claim 5

a. [5a]: identifying a change in position of the MO.

Kreitler/Suomela/Altman renders obvious [5a].

Altman discloses other users (MOs) are displayed, updated in real-time, as the other user (MO) moves. *Altman* states, “[e]ach user who desires to interact with other users in the system using this data utilizes the location-based social network manager process 112” that allows users to view other users’ (MOs) current location based on updated information generated by a new location of the user (MO). *Altman*, 4:32-34, 11:1-13, 20:3-15; Rosenberg, 194.

As combined with *Kreitler/Suomela*, if another user (MO) were off-map, a POSITA would have understood that the system would display a special icon (OVI) representing the off-map user (MO) and adjust that special icon as the off-map user (MO) changes position. As explained in §VIII.A, it would have been obvious to a POSITA to implement *Altman*’s real-time update on the location of other users within *Kreitler/Suomela*. Rosenberg, 195.

b. [5b]: computing a revised distance to the MO;

Kreitler/Suomela/Altman renders obvious [5b].

As explained in [1c] (§VI.B.1.d), *Kreitler* discloses computing navigational information between two items. *Kreitler* and *Suomela* do not expressly disclose computing a revised distance to the MO, but *Altman* does. Rosenberg, 197.

Altman discloses “a user update on a mobile communication device ... as a friend changes location” and an information table with the “distance to the user” from the user’s friends. *Altman*, 20:31-45, Figs. 5A and 12. A POSITA would have understood that the updated distance information in the information table as a friend changes location is the revised distance from the user to the user’s friend (MO). Rosenberg, 198.

As explained in §VIII.A, it would have been obvious to a POSITA to implement *Altman*’s real-time update on the location of other users within *Kreitler-Suomela*. Rosenberg, 199.

c. [5c]: displaying the OVI with the revised distance in response to identifying the change in the position of the MO.

Kreitler/Suomela/Altman renders obvious [5c].

As explained regarding [1d] (§VI.B.1.e), *Kreitler/Suomela*’s OVIs display MO distance information. Rosenberg, 201.

As explained in [5a] and [5b] (§§VIII.C.1.a and VIII.C.1.b), *Altman* discloses “[t]he display area 1204 of mobile communication device 1202 displays the status information for a number of friends ... as a friend [(MO)] changes

location,” which includes the “distance to the user.” *Altman*, 20:31-45, Fig. 12; Rosenberg, 202.

As explained in §VIII.A, it would have been obvious to a POSITA to modify *Kreitler/Suomela*’s OVI distance indication to include *Altman*’s real-time distance updating, and POSITA would have had a reasonable expectation of success in doing so. Rosenberg, 203.

2. Claim 6

- a. [6a]: identifying a change in position of an electronic device configured to display the electronic map;**

Kreitler/Suomela/Altman renders obvious [6a], as explained in [26d] (§VIII.B.1.e). Rosenberg, 204.

- b. [6b]: computing a revised distance to the MO;**

Kreitler/Suomela/Altman renders obvious [6b], as explained in [5b] (§VIII.C.1.b). Rosenberg, 205.

- c. [6c]: displaying the OVI with the revised distance in response to identifying the change in the position of the electronic device.**

Kreitler/Suomela/Altman renders obvious [6c], as explained in [5c] (§VIII.C.1.c). Rosenberg, 206.

3. Claim 8: wherein the OVI comprises contact information of the MO.

Kreitler/Suomela/Altman renders obvious claim 8.

Altman discloses a “location-based social network manager [that] stores and provides access to sometimes sensitive personal identification information (PII) of a user to a network of people” which “may include information about the user (e.g., ... mobile phone number ...).” *Altman*, 10:22-31; ’527, 6:57-64 (“For example, the contact information 312 may be a phone number”); Rosenberg, 208.

As combined with *Kreitler/Suomela*, a POSITA would have understood that the mobile phone number stored in the location-based social network manager is the contact information for the MO referenced by the OVI. Rosenberg, 209.

As explained in §VIII.A, a POSITA would have been motivated to combine *Altman*’s contact information with *Kreitler/Suomela* and also would have had a reasonable expectation of success in doing so. Rosenberg, 210.

4. Claim 16: wherein the MO identifies a social networking member, and wherein the media content comprises an image of the social networking member.

Kreitler/Suomela/Altman renders obvious claim 16.

Altman discloses a location-based social network manager where a user can view “on the map the respective locations of one or more other users of mobile communication devices coupled to the mobile communication device over the network.” *Altman*, 2:1-31, 3:65-4:1. *Altman* expressly states the “user can build a database of trusted friends among the one or more other users.” *Id.*, 2:8-19. *Altman* further states that the “user provided database 128 [that] stores graphic information

related to each user, such as the user's picture, and any other associated images”
and teaches displaying remote users' images. *Id.*, Fig. 5B, 5:57-60; Rosenberg,
212.

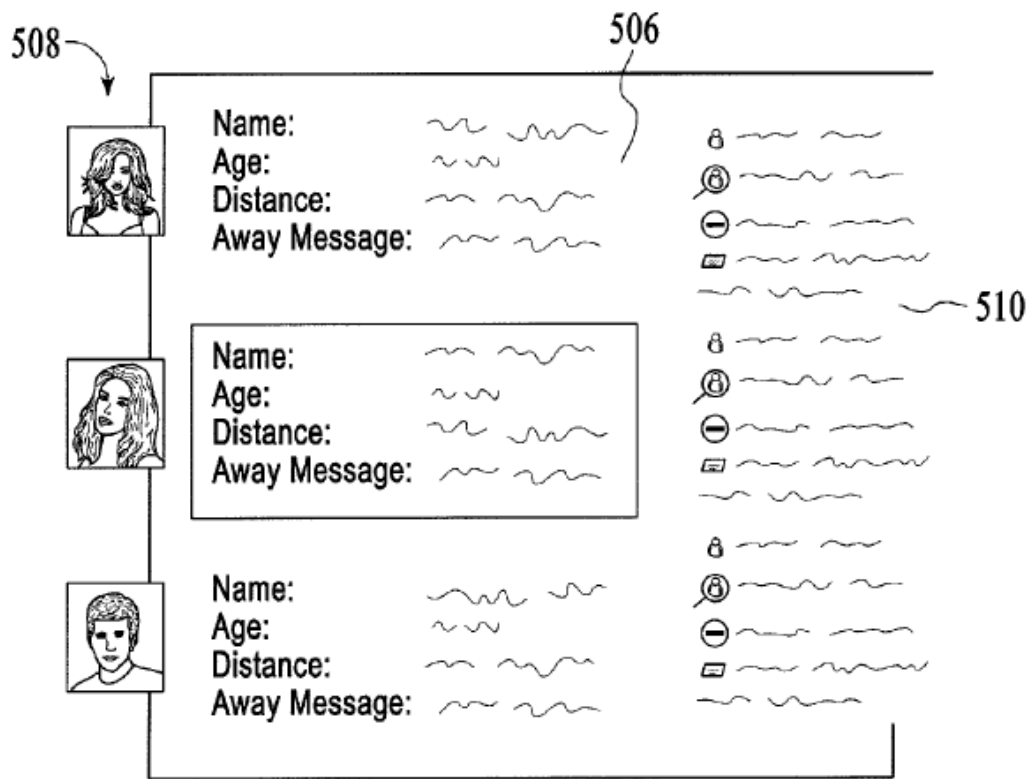


FIG.5B

Altman, Fig. 5B.

As explained in §VIII.A, it would have been obvious to a POSITA to
implement *Altman*'s social networking member with an image within
Kreitler/Suomela. Rosenberg, 213.

5. Claim 27

- a. [27a]: the processing device is further configured to cause the display device to: display a position of the apparatus on the electronic map;

Kreitler/Suomela/Altman renders obvious claim [27a] because *Suomela* discloses a “[You Are Here \(YAH\) indicator](#)” 28 that “indicates the direction of travel and current location of the mobile device as determined using GPS hardware 22.” *Suomela*, 3:35-43; Rosenberg, 214.

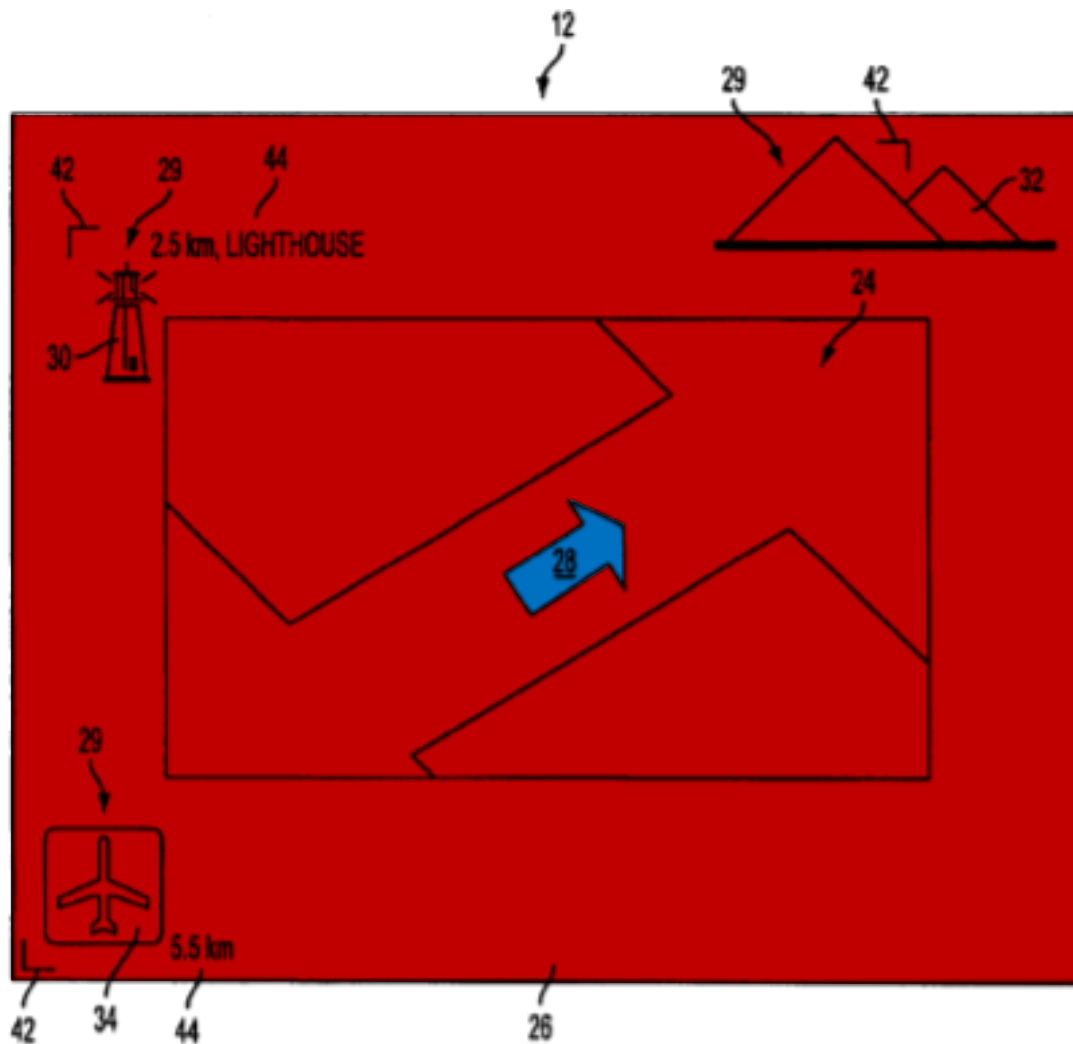


FIG. 5

Suomela, Fig. 5.

As explained in §VI.A, a POSITA would have been motivated to modify *Kreitler*'s mobile computing device to include GPS hardware in communication with a processor to track and display an indicator of a mobile device's current location, as taught by *Suomela*, to allow a user of the mobile device to monitor their current location as they travel along a route between two location-based items. Rosenberg, 215.

- b. [27b]: alter an angular position of the OVI with respect to the position of the apparatus and the MO.**

Kreitler/Suomela/Altman renders obvious claim [27b], as explained in claim 5 (§VIII.C.1). Rosenberg, 216-217.

- 6. Claim 30: wherein the processing device is further configured to cause the display device to alter a position of the OVI with respect to a center of the electronic map.**

Kreitler/Suomela/Altman renders obvious claim [30], as explained in claim 5 (§VIII.C.1). Rosenberg, 218.

Suomela discloses objects representing geographic locations of interest not visible within the detailed map area are positioned relative to the center of the displayed map. *Suomela*, 2:26-30 ("If his home is a great distance away such that it is not within the current map view and scales, a permanent object representing his

home may be continuously shown in its proper orientation or alignment with the center of the map.”). Accordingly, a POSITA would have understood that *Kreitler/Suomela/Altman*’s processor alters the position of the object with respect to the center of the displayed map when it determines that the position of the off-map location of interest has changed relative to the updated position of the mobile device. Rosenberg, 219.

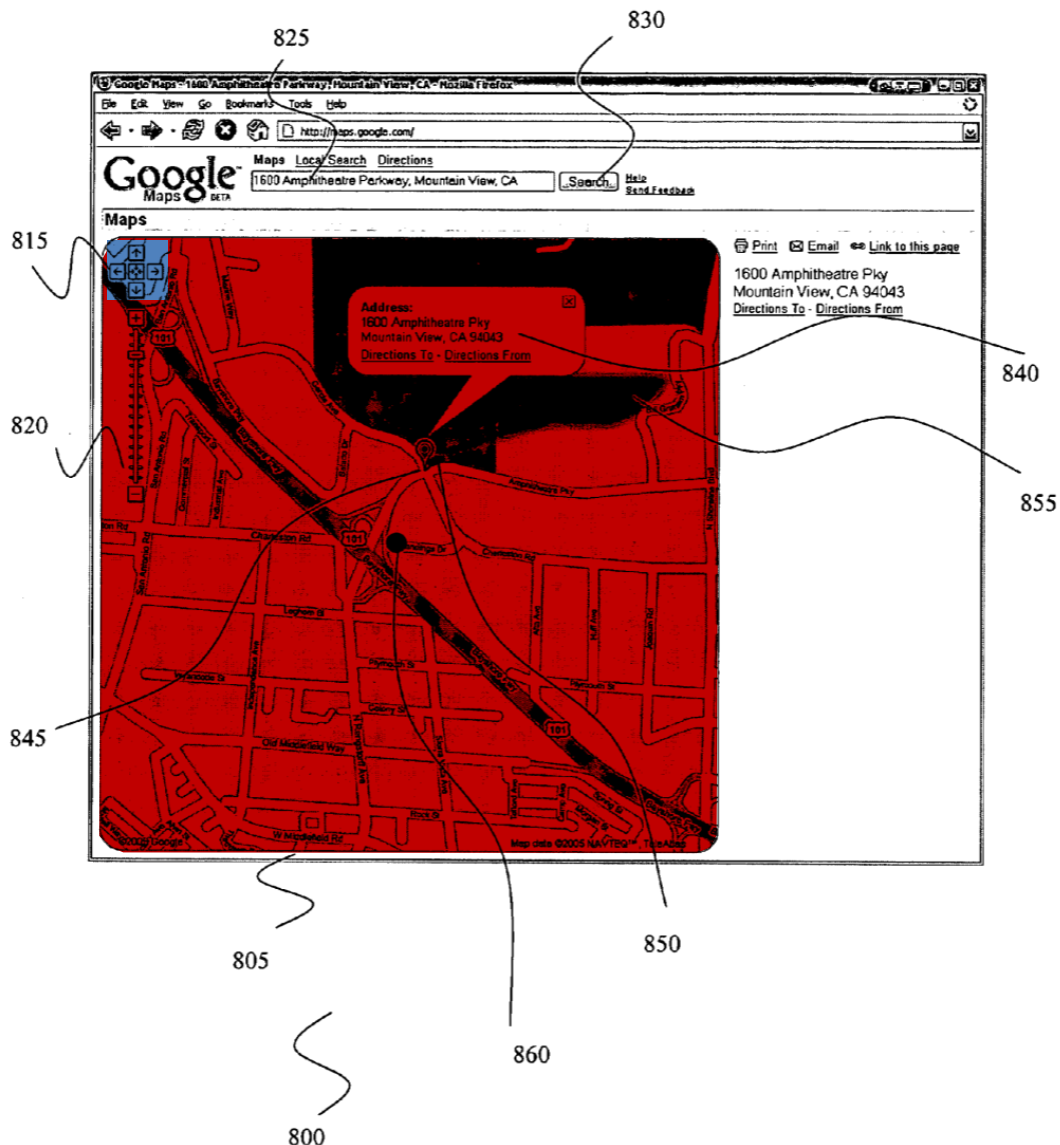
IX. GROUND 4: CLAIMS 21-22 ARE OBVIOUS OVER *KREITLER* IN VIEW OF *SUOMELA* AND *RASMUSSEN*

A. Overview and Motivation to Combine

Dependent claims 21 and 22 further recite animating the map’s pan/zoom. While not expressly disclosed by *Kreitler* or *Suomela*, these limitations are taught by *Rasmussen*, and it would have been obvious to incorporate *Rasmussen*’s animation/panning within *Kreitler/Suomela* because *Kreitler* discloses zooming and panning but stops short of teaching the technical details of how to make such an adjustment. *Kreitler*, 5:23-26 (teaching “zooming and panning around”), 5:41-45, 19:20-22. A POSITA would have looked to other graphical user interface references that disclose technical details for adjusting a map-display, like *Rasmussen*. Rosenberg, 220.

Rasmussen discloses a digital mapping system using a tiling approach for displaying digital maps. *Rasmussen*, 3:13-21, 3:25-42, 6:21-48. *Rasmussen* teaches

“map image panning operations” that present a transition from one map view to a new map view “as a smooth[], animated pan.” *Id.*, 20:59-66. A user may initiate panning operations using “arrow-labeled pan buttons” displayed on the map (*id.*, 8:54-57) or by “‘clicking on’ or otherwise selecting a specific portion of map image 805 [which] causes the selected location to pan to the center of the map image 805.” *Id.*, 8:54-57, 9:3-10; Rosenberg, 221.



Rasmussen, Fig. 8.

The '527, *Kreitler*, *Suomela*, and *Rasmussen* are all in the field of mapping on electronic devices to show travel-related information. The '527, *Kreitler*, and *Rasmussen* address the known problem of calculating and displaying panning a map from one map view to another, with *Kreitler/Suomela/Rasmussen* disclosing known solutions, the combination of which yields predictable results. Therefore, it would have been obvious for a person of ordinary skill in the art to combine *Rasmussen* with *Kreitler* and *Suomela* for smooth panning operations from one map view to another. Rosenberg, 222.

A POSITA would have found it obvious to include an animated transition from one map view to another map view, taught by *Rasmussen*, with *Kreitler/Suomela*'s mapping system to "present a smooth pan along contiguous map imagery." *Rasmussen*, 21:37-39. To present the smooth pan, a POSITA would have been motivated to implement *Rasmussen*'s method of determining a path by calculating the change in pixel coordinates in both the x and y directions with the linear equation " $(dx, dy) = (x, y) - (x^1, y^1)$ " and iteratively "mov[ing] the tile grid [of the map] by an offset of $(dx, dy)/n$ and display[ing] the resulting frame" to include an animation with "map image panning operations." *Rasmussen*, 20:59-22:5, Figs. 17-21; Rosenberg, 223.

A POSITA would have been motivated to modify *Kreitler/Suomela* to display an animated transition, taught by *Rasmussen*, to provide “a smoother, animated pan,” (*Rasmussen*, 20:60-66), when a user selects a specific portion of the map, (*id.*, 9:3-10), as this merely provides additional implementation details beyond *Kreitler*’s teaching of “allow[ing] the user to navigate around the map by zooming and panning around.” *Kreitler*, 5:23-24. A POSITA would also have been motivated to modify *Kreitler/Suomela*’s mapping system to include a path between a determined MO and an approximate center of the first area of the map and to display a second portion to include an animation to improve the overall user experience of the *Kreitler/Suomela* system and allow for the pans to be “presented smoothly” using the process taught in *Rasmussen*. *Rasmussen*, 21:63-22:5; Rosenberg, 224.

A POSITA would have had a reasonable expectation of success in modifying *Kreitler/Suomela* to include *Rasmussen*’s animated transition from one map view to another map view and including a path and an animation. Such a modification would have required only routine skill, as implementing *Rasmussen*’s steps to define a path along which to incrementally pan a map from one map view to another map view, including a path between a determined MO and an approximate center of the first area of the map, and displaying a second portion to include an animation was common in the art before the date of the ’527 patent.

Rasmussen, 21:63-22:5. *Kreitler* itself discloses panning a map from one map area to another map area, (*Kreitler*, 6:58-60), and adding the panning operations, taught by *Rasmussen*, would have required only a routine modification of the instructions executed by *Kreitler*'s processor, which would have been well within a POSITA's skill. Accordingly, modifying *Kreitler/Suomela* to animate the transition from the first to second portions of the electronic map when a user selects a specific maps portion (an off-map entity information indicator control) or the map movement controls would have implemented only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 225.

B. Claim 21: wherein the processing device is further configured to cause the display device to display an animated transition from the first portion to the second portion of the electronic map.

Kreitler/Suomela/Rasmussen renders obvious claim 21. Rosenberg, 226.

Kreitler discloses re-centering and resizing the map. *Kreitler*, 6:58-60.

However, *Kreitler* and *Suomela* do not expressly disclose animating transitions. Rosenberg, 227.

Rasmussen states "from one map view (x, y, z) to a new map view (x', y', z[']) ... should be animated over n frames" *Rasmussen*, 20:60-66, 7:60-64

(“scripts may be used to smoothly animate the transition from the old to the new map view”), 22:6-9; Rosenberg, 228.

As explained in §IX.A, a POSITA would have been motivated to modify *Kreitler* to incorporate *Rasmussen*’s animated transition for a better user experience and would have had a reasonable expectation of success in doing so. Rosenberg, 229.

C. Claim 22: wherein the animated transition comprises a series of images along a linear path of travel between the first portion and the second portion of the electronic map.

Kreitler/Suomela/Rasmussen renders obvious claim 22.

Rasmussen discloses panning from one map view (first map portion) (x, y) to a new map view (second map portion) (x^1, y^1) via animating over n frames (series of images) along a predetermined path via the linear equation “ $(dx, dy)=(x, y)-(x^1, y^1)$,” repeatedly “mov[ing] the [map’s] tile grid by an offset of $(dx, dy)/n$ and display[ing] the resulting frame.” *Rasmussen*, 20:62-66, 21:19-21, 21:28-30, Figs. 17-21; Rosenberg, 231.

As explained in §IX.A, a POSITA would have been motivated to modify *Kreitler* to incorporate *Rasmussen*’s transition implementation details and would have had a reasonable expectation of success in doing so. Rosenberg, 232.

X. GROUND 5: CLAIMS 23 AND 24 ARE OBVIOUS OVER KREITLER IN VIEW OF SUOMELA, RASMUSSEN, AND MYR

A. Overview and Motivation to Combine

Claims 23 and 24 depend from claims 21 (Ground 4) and 23, respectively, and further recite animating and panning (disclosed by *Rasmussen*) along a travel route and at a speed of transition mimicking real travel conditions. While not expressly disclosed by *Kreitler/Suomela/Rasmussen* (Ground 4), these additional limitations are taught by *Myr*'s travel routes and estimated travel times, which would have been obvious to incorporate within *Kreitler/Suomela/Rasmussen*. Rosenberg, 233.

The '527, *Kreitler*, *Suomela*, *Rasmussen*, and *Myr* are all in the field of mapping on electronic devices to show travel-related information. All five address the known problem of calculating and displaying travel information, with *Kreitler/Suomela/Rasmussen/Myr* disclosing known solutions, the combination of which yields predictable results. Therefore, it would have been obvious for a person of ordinary skill in the art to further modify *Kreitler/Suomela/Rasmussen* to include *Myr*'s calculation of shortest-distance routes and estimated travel times when panning along a predetermined route to allow a user to have a more realistic preview of their anticipated travel route. Rosenberg, 234.

A POSITA would have been motivated to modify and had a reasonable expectation of success in modifying *Kreitler/Suomela/Rasmussen* to include *Myr*'s travel route information (including travel time estimates) for the reasons in §VII.A

and because users desire to understand their anticipated travel route, especially “on unfamiliar roads.” *Myr*, 2:18-21 (“the optimal route found is communicated to the driver and displayed on the vehicle’s computer screen featuring the digital map”), 3:20-25 (after “receiving a request from a driver for a shortest route ... the optimal route is communicated to the driver”); *Rasmussen*, 19:63-66 (“additional information beyond the fundamental map image (e.g., driving routes, specific locations) can be drawn as overlays and placed on top of a map”); Rosenberg, 235.

A POSITA would have also had a reasonable expectation of success in modifying *Kreitler/Suomela/Rasmussen* to include *Myr*’s travel route information (including travel time estimates). Such a modification would have required only routine skill, as route calculation and time estimation were common in the art before the date of the ’527 patent. *Kreitler* itself discloses calculating time and distance information to off-map locations of interest, (*Kreitler*, 7:5-19), and *Rasmussen* discloses panning between two locations, (*Rasmussen*, 20:59-66), and panning along a route to mimic or preview the expected travel route and speed would have required only modification within a POSITA’s skill. Rosenberg, 236.

Accordingly, displaying calculated travel information based on identified travel conditions with *Kreitler* and *Suomela* would have implemented only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 237.

B. Claim 23: wherein the animated transition comprises a series of images along a predetermined route of travel between the first portion and the second portion of the electronic map.

Kreitler/Suomela/Rasmussen/Myr renders obvious claim 23.

Rasmussen discloses panning from one map view (first map portion) (x, y) to a new map view (second map portion) (x^1, y^1) via animating over n frames (series of images) along a predetermined path via the linear equation “ $(dx, dy) = (x, y) - (x^1, y^1)$,” repeatedly “mov[ing] the [map’s] tile grid by an offset of $(dx, dy)/n$ and display[ing] the resulting frame.” *Rasmussen*, 20:62-66, 21:19-21, 21:28-30, Figs. 17-21; Rosenberg, 239.

Myr discloses calculating the shortest route between two points. *Myr*, 4:49-51, 5:59-61, 7:3-6; Rosenberg, 240.

A POSITA would have understood that where the shortest distance is along a straight travel path (e.g., road), the route of travel calculated by *Myr* would be the same as *Rasmussen*’s linear panning path. Accordingly, a POSITA would have understood that *Kreitler/Suomela/Rasmussen/Myr* teaches ***wherein the animated transition comprises a series of images along a predetermined route of travel between the first portion and the second portion of the electronic map.*** Rosenberg, 241.

A POSITA would have been motivated to add *Myr*'s shortest route calculation to *Kreitler/Suomela/Rasmussen*'s panning to assist the user in accurately previewing their planned route. §X.A; Rosenberg, 242.

C. Claim 24: wherein the series of images are displayed at a speed of transition that mimics real travel conditions.

Kreitler/Suomela/Rasmussen/Myr renders obvious claim 24.

Rasmussen teaches that during a pan “it may be necessary to pause for some time period between frames” (images). *Rasmussen*, 21:30-31; Rosenberg, 244.

Myr discloses estimating travel times using information including “[r]egular predictable changes like everyday slowdowns in rush hours” *Myr*, 2:41-42, 9:47-10:50 (estimated travel time accounts for “statistical travel times based on which the corresponding empirical speed coefficients may be calculated”); Rosenberg, 245.

A POSITA would have found it obvious to modify *Kreitler/Suomela/Rasmussen*'s inter-frame delays to reflect expected real-world conditions, including “everyday slowdowns” as taught by *Myr*, (*Myr*, 10:3-4), which would assist the user in accurately previewing their planned route. §X.A; Rosenberg, 246.

XI. GROUND 6: CLAIM 25 IS OBVIOUS OVER *KREITLER* IN VIEW OF *SUOMELA*, *RASMUSSEN*, AND *ALTMAN*

A. Overview and Motivation to Combine

Claim 25 depends from claim 21 (Ground 4) and further recites configuring to cause the display device to display the first portion of the map after the animated transition is complete. While not expressly disclosed by *Kreitler/Suomela/Rasmussen* (Ground 4), displaying the first portion of the map after the animated transition is complete is taught by *Altman*. Rosenberg, 247

Altman discloses a location-based social network manager process amongst users and displaying the shared location information on electronic maps. *Altman*, 2:1-31, 3:4, 3:53-55, 3:65-4:1, 5:57-61. *Altman* also discloses “[s]crolling and scaling functions for control of the displays on [] the mobile device ... that can be used in conjunction ... the location-based social network manager process.” *Id.*, 16:64-17:2. *Altman*’s “display process may utilize various smart mechanisms for panning, zooming, scaling, ... [and] may utilize an automatic zoom out mechanism ... when a user pans off a screen” to “[t]hen display [and] then zoom[] back to the original zoom level when the user stops panning.” *Id.*, 16:64-17:2; Rosenberg, 248.

The ’527, *Kreitler*, *Suomela*, *Rasmussen*, and *Altman* are all in the field of mapping on electronic devices to show travel-related information. All five address the known problem of calculating and displaying travel information, with *Kreitler/Suomela/Rasmussen/Altman* disclosing known solutions, the combination of which yields predictable results. Therefore, it would have been obvious for a person of ordinary skill in the art to combine *Altman* with

Kreitler/Suomela/Rasmussen to display the first portion of the map after the animated transition is complete. Rosenberg, 249.

A POSITA would have found it obvious and advantageous to alter the display to include displaying the first portion of the map again after the animated transition is complete, as taught by *Altman*, to *Kreitler/Suomela/Rasmussen*'s animated transition. Rosenberg, 250.

A POSITA would have been motivated to modify *Kreitler/Suomela/Rasmussen* to display the first portion of the map after the animated transition is complete, as taught by *Altman*, because such a modification would allow users to effortlessly revert back to their original map image without having the user search again for their original map image. Rosenberg, 251.

A POSITA would have also had a reasonable expectation of success in modifying the OVI in *Kreitler/Suomela/Rasmussen* to include *Altman*'s display to include displaying the first portion of the map again after the animated transition is complete. Such a modification would have required only routine skill, because displaying the first portion of the map again after the animated transition is complete was known in the art before the date of the '527 patent.

Kreitler/Suomela/Rasmussen already disclose panning a map with an animated transition from a first portion to a second portion of the electronic map, so displaying the first portion of the map again after the animated transition is

complete would have required only modification of the graphical display within a POSITA's skill. Accordingly, displaying the first portion of the map again after the animated transition is complete with *Kreitler/Suomela/Rasmussen*'s animated transition would have been implemented using only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 252.

B. Claim 25: wherein the processing device is further configured to cause the display device to display the first portion of the electronic map after the animated transition is complete.

Kreitler/Suomela/Rasmussen/Altman renders obvious claim 25.

Altman discloses display processes for panning maps. For example, when “a user pans off a screen” in a smart pan and zoom feature, *Altman* discloses displaying that screen and “then zoom[ing] back to the original zoom level when the user stops panning.” *Altman*, 17:3-10; Rosenberg, 254.

A POSITA would have understood *Kreitler/Suomela/Rasmussen* in further view of *Altman* to render obvious displaying the first portion of the map again after the animated transition is complete. Rosenberg, 255.

As explained in §XII.A, a POSITA would have been motivated to add *Altman*'s display to include displaying the first portion of the map again after the animated transition is complete to *Kreitler/Suomela/Rasmussen*. Rosenberg, 256.

XII. GROUND 7: CLAIM 28 IS OBVIOUS OVER *KREITLER* IN VIEW OF *SUOMELA*, *ALTMAN*, AND *SCHEIBE*

A. Overview and Motivation to Combine

Claim 28 depends from claim 26 (Ground 3) and further recites altering the OVI color to indicate relative distance between the apparatus and the MO. While not expressly disclosed by *Kreitler/Suomela/Altman* (Ground 3), altering a color of the OVI is taught by *Scheibe*. Rosenberg, 257.

Scheibe discloses a map-interface showing POIs relative to a user-defined geographic area, where variations in color represent POI locations within the geographic area. POIs “being represented by the color overlay may be specified or constrained by the user to select points of interest of particular interest to the user.” *Scheibe*, 3:65-4:1. For example, “users may specify or constrain points of interest [to] include ... a specific distance from a user-defined location.” *Id.*, 4:8-14; Rosenberg, 258.

The ’527, *Kreitler*, *Suomela*, *Altman*, and *Scheibe* are all in the field of mapping on electronic devices to show travel-related information. All five address the known problem of calculating and displaying travel information, with *Kreitler/Suomela/Altman/Scheibe* disclosing known solutions, the combination of which yields predictable results. Therefore, it would have been obvious for a person of ordinary skill in the art to combine *Scheibe* with

Kreitler/Suomela/Altman to provide the user with straightforward means to judge the distance of an MO. Rosenberg, 259.

A POSITA would have found it obvious and advantageous to alter the OVI to include altering OVI color to show a specific distance from a user-defined location, as taught by *Scheibe*, to *Kreitler/Suomela*'s OVI. Rosenberg, 260.

A POSITA would have been motivated to modify *Kreitler/Suomela/Altman* to include altering the visual characteristic of OVIs with a color overlay based on a specific distance from a POI as taught by *Scheibe*, because such a modification would allow users to identify POIs based on distance from the user-defined location. Such a modification would allow users to effortlessly identify the relative distance from the user-defined location to POIs, which “would be readily discernible by the user simply by looking at the map interface.” *Scheibe*, 4:6-8; Rosenberg, 261.

A POSITA would have also had a reasonable expectation of success in modifying the OVI in *Kreitler/Suomela/Altman* to include *Scheibe*'s color overlay alteration to represent POIs based on a specific distance from a user-defined location. Such a modification would have required only routine skill because altering the color on electronic maps based on a specific distance from a user-defined location was known in the art before the date of the '527 patent.

Kreitler/Suomela/Altman already disclose altering a visual characteristic of the

OVI to represent a change in spatial relationship, and altering the color to the OVI through a color overlay would have required only modification of the graphical display within a POSITA's skill. Accordingly, altering an OVI to include a color to indicate a specific distance from a user-defined location with *Kreitler/Suomela/Altman*'s OVI that is already altered based on a change in position of an apparatus and represents a change in spatial relationship between the apparatus and an MO would have been implemented using only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 262.

B. Claim 28: wherein the processing device is further configured to cause the display device to alter a color of the OVI to indicate a relative distance between the apparatus and the MO.

Kreitler/Suomela/Altman/Scheibe renders obvious claim 28.

As explained in [26c] (§VIII.B.1.f), *Kreitler/Suomela/Altman* renders obvious altering an OVI visual characteristic in response to a change in position. Rosenberg, 264.

Scheibe discloses POIs “represented by the color overlay may be specified or constrained by the user to select points of interest of particular interest to the user.” *Scheibe*, 3:65-4:1. For example, “users may specify or constrain points of

interest [to] include ... a specific distance from a user-defined location.” *Id.*, 4:8-14; Rosenberg, 265.

A POSITA would have understood *Kreitler/Suomela/Altman* in further view of *Scheibe* to render obvious altering the OVI color based on an updated distance between the user and the MO. Rosenberg, 266.

As explained in §XII.A, a POSITA would have been motivated to add *Scheibe*’s distance-based color alteration to *Kreitler/Suomela/Altman*. Rosenberg, 267.

XIII. GROUND 8: CLAIM 29 IS OBVIOUS OVER *KREITLER* IN VIEW OF *SUOMELA*, *ALTMAN*, AND *WATANABE*

A. Overview and Motivation to Combine

Claim 29 depends from claim 26 (Ground 3) and further recites altering a graphical vector to indicate a relative distance between the apparatus and the MO. While not expressly disclosed by *Kreitler/Suomela/Altman* (Ground 3), altering a length of a graphical vector is taught by *Watanabe*. Rosenberg, 268.

Watanabe discloses a “navigation system [that] identif[ies] a current position and the direction of a route” by “display[ing] an arrow.” *Watanabe*, 2:8-27.

Watanabe also discloses “[a]djusting the length of the arrow when the arrow-head reaches a guide point,” including the destination (MO). *Id.*, 9:48-49. *Watanabe* states “length L of the arrow α may be dynamically changed based on a situation of

guiding along the route β .” *Id.*, 9:50-51. More specifically, *Watanabe* discloses “when the arrowhead reaches the destination on the route β , the length of the arrow α is adjusted so that the arrowhead will be locked at the destination ..., and the length of the arrow α is gradually decreased along with the shift of a current position.” *Id.*, 9:64-10:3; Rosenberg, 269.

The ’527, *Kreitler*, *Suomela*, *Altman*, and *Watanabe* are all in the field of mapping on electronic devices to show travel-related information. All five address the known problem of calculating and displaying travel information, with *Kreitler/Suomela/Altman/Watanabe* disclosing known solutions, the combination of which yields predictable results. Therefore, it would have been obvious for a POSITA to combine *Watanabe*’s alteration of the length of the arrow with *Kreitler/Suomela/Altman*’s OVI for a more effective and efficient navigation system to show a specific distance from the user to the MO. Rosenberg, 270.

A POSITA would have been motivated to modify *Kreitler/Suomela/Altman* to include altering the visual characteristic of OVIs by altering the length of the OVI based on a specific distance from a POI as taught by *Watanabe*, because such a modification would allow users to identify POIs based on distance from the user-defined location. Such a modification would allow users to effortlessly identify the relative distance from the user to POIs, “making it possible to identify a current position ... without the necessity of moving a line of vision.” *Watanabe*, 2:4-7,

2:33-35. Moreover, a “user who sees the arrow would readily grasp a sense of a distance.” *Id.*, 2:50-51; Rosenberg, 271.

A POSITA would have also had a reasonable expectation of success in modifying the OVI in *Kreitler/Suomela/Altman* to include *Watanabe*’s alteration of the length of the arrow to represent POIs based on a specific distance from a user-defined location. Such a modification would have required only routine skill, because altering the length of the arrow on electronic maps based on a specific distance from a user vehicle to the MO was known in the art before the date of the ’527 patent. *Kreitler/Suomela/Altman* already disclose altering a visual characteristic of the OVI to represent a change in spatial relationship, and altering the length of the OVI would have required only a modification of the graphical display within a POSITA’s skill. Accordingly, altering the length of the arrow to indicate a specific distance from a user-defined location with *Kreitler/Suomela/Altman*’s OVI, that is already altered based on a change in position of an apparatus and represents a change in spatial relationship between the apparatus and an MO, would have been implemented using only conventional systems and methods in ways a POSITA would have readily understood and expected to succeed. Rosenberg, 272.

B. Claim 29: wherein the processing device is further configured to cause the display device to alter a length of a

graphical vector associated with the OVI to indicate a relative distance between the apparatus and the MO.

Kreitler/Suomela/Altman/Watanabe renders obvious claim 29.

As explained in [26e], *Kreitler/Suomela/Altman* renders obvious altering a visual characteristic of the OVI by updated the distance between the apparatus and an MO in response to a change in position. Rosenberg, 274.

Watanabe discloses “[a]djusting the length of the arrow when the arrow-head reaches a guide point” or MO, where the “length L of the arrow α may be dynamically changed based on a situation of guiding along the route β .” *Id.*, 9:48-51. *Watanabe* discloses “when the arrowhead reaches the destination [or MO] on the route β , the length of the arrow α is adjusted so that the arrowhead will be locked at the destination ..., and the length of the arrow α is gradually decreased along with the shift of a current position.” *Id.*, 9:64-10:3; Rosenberg, 275.

A POSITA would have understood that an arrow is a graphical vector, and further that *Kreitler/Suomela/Altman* in further view of *Watanabe* render obvious altering graphical vector length based on an updated distance between the user and the MO. Rosenberg, 276.

As explained in §XIII.A, a POSITA would have been motivated to add *Watanabe*’s distance-based alteration of arrow length to *Kreitler/Suomela/Altman*. Rosenberg, 277.

XIV. *FINTIV* DISCRETIONARY DENIAL IS INAPPROPRIATE

At this time, no factors articulated in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5-6 (PTAB Mar. 20, 2020), weigh in favor of non-institution under §314(a) because no trial date has been set in the parallel litigation.

XV. DISCRETIONARY DENIAL IS INAPPROPRIATE UNDER 35 U.S.C. §325(D)

Denial of institution under §325 would be improper based on a weighing of the factors in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017). None of the cited references in this Petition were before the Office during prosecution. *See generally* Ex. 1002. And the asserted references and combinations thereof are materially different and not cumulative of the prior art cited during examination of the application leading to the '527 patent. During prosecution of the '527 patent, the Examiner only issued a double-patenting rejection. Ex. 1002, 66. In the '527 patent's parent application, No. 12/151,827 (U.S. Patent No. 8,032, 297), the Examiner relied on a single reference, U.S. Patent App. Pub. No. 2007/0050129 ("*Salmre*," Ex. 1010). Ex. 1018, 89-90. There, the Examiner found that *Salmre* did not disclose "receiving user input selecting the OVI"; "displaying a secondary area of the electronic map, wherein the secondary area is a region of the electronic map centered approximately around the MO"; and "displaying the MO approximately at

the center of the secondary area,” which were added by amendment. *Id.*, 66, 74; *see also id.*, 55-59 (allowing the claims following the amendment).

The prior art references relied on here were not considered during prosecution, because *Salmre* is not at issue here, no references were relied upon for a rejection during prosecution of the ’527 patent, and the prior art references relied on here are materially different from and not cumulative of the references considered in the parent application at least because they teach claim elements identified as “allowable” during prosecution, including, “receiving user input selecting the OVI”; “displaying a secondary area of the electronic map, wherein the secondary area is a region of the electronic map centered approximately around the MO”; and “displaying the MO approximately at the center of the secondary area,” as explained in the grounds above. There is thus little to no overlap to arguments during prosecution. *Becton*, Paper 8 at 23-24.

XVI. MANDATORY NOTICES

A. Real Party-in-Interest

The real parties-in-interest are BMW of North America, LLC, and Bayerische Motoren Werke AG.

B. Related Matters

To the best of Petitioner’s knowledge, the ’527 patent has been or is involved in at least the following district court litigations, of which the latest three cases are currently active:

Name	Number	Court	Filed
<i>NorthStar Systems LLC v. Bayerische Motoren Werke AG</i>	2-22-cv-00496	EDTX	Dec. 27, 2022
<i>NorthStar Systems LLC v. Hyundai Motor Company et al</i>	2-22-cv-00495	EDTX	Dec. 23, 2022
<i>NorthStar Systems LLC v. Volkswagen AG</i>	2-22-cv-00486	EDTX	Dec. 22, 2022
<i>NorthStar Systems LLC v. TCT Mobile Int’l Ltd.</i>	2:20-cv-00383	EDTX	Dec. 15, 2020
<i>NorthStar Systems LLC v. Kyocera Corp.</i>	2:20-cv-00384	EDTX	Dec. 15, 2020
<i>NorthStar Systems LLC v. Shenzhen OnePlus Science & Tech. Co., Ltd.</i>	2:20-cv-00385	EDTX	Dec. 15, 2020
<i>NorthStar Systems LLC v. ZTE Corp.</i>	2:20-cv-00386	EDTX	Dec. 15, 2020

C. Lead and Back-Up Counsel, and Service Information

Lead Counsel	Back-Up Counsel
Lionel M. Lavenue (Reg. No. 46,859) lionel.lavenue@finnegan.com Finnegan, Henderson, Farabow, Garrett, & Dunner LLP 1875 Explorer Street, Suite 800, Reston, VA 20190-6023 Tel.: 571-203-2750	Kara A. Specht (Reg. No. 69,560) kara.specht@finnegan.com Finnegan, Henderson, Farabow, Garrett & Dunner LLP 271 17th Street, NW, Suite 1400 Atlanta, GA 30363-6209 Tel: 404-653-6400 Fax: 404-653-6444 Matthew Berntsen (Reg. No. 80,343) matthew.berntsen@finnegan.com

	Finnegan, Henderson, Farabow, Garrett & Dunner LLP Two Seaport Lane, Boston, MA 02210-2001 Tel: 617-646-1618
--	--

Petitioner consents to e-mail service at BMW-NorthStar-
IPRs@finnegan.com.

XVII. GROUNDS FOR STANDING

Petitioner certifies the '527 patent is available for IPR, and Petitioner is not barred or estopped from requesting IPR on the grounds identified in this Petition.

XVIII. CONCLUSION

Petitioner requests the Board institute IPR and cancel claims 1-30 as unpatentable.

Date: May 26, 2023

Respectfully Submitted,

/Lionel M. Lavenue/
Lionel M. Lavenue, Lead Counsel
Reg. No. 46,859

CLAIMS APPENDIX

1. **[preamble]** A method for displaying object vector indicators (“OVI”) and mapping-media content, referencing map-objects (“MO”) on an electronic map, comprising:
 - [1a]** obtaining a MO from a mapping service;
 - [1b]** determining that coordinates of the MO are not within a selected area of the electronic map;
 - [1c]** computing distance and travel-related information to the MO;
 - [1d]** displaying an OVI containing the distance and travel-related information;
 - [1e]** receiving user input selecting the OVI;
 - [1f]** retrieving mapping-media content associated with the selected OVI; and
 - [1g]** displaying the mapping-media content.
2. The method of claim 1, wherein the distance to the MO is computed from a center of the selected area of the electronic map.
3. The method of claim 1, wherein the distance to the MO is computed from a location marker on the electronic map.
4. The method of claim 1, wherein the user input comprises a voice command.
5. **[preamble]** The method of claim 1, further comprising:
 - [5a]** identifying a change in position of the MO;

- [5b] computing a revised distance to the MO; and
- [5c] displaying the OVI with the revised distance in response to identifying the change in the position of the MO.
6. [preamble] The method of claim 1, further comprising:
- [6a] identifying a change in position of an electronic device configured to display the electronic map;
- [6b] computing a revised distance to the MO; and
- [6c] displaying the OVI with the revised distance in response to identifying the change in the position of the electronic device.
7. The method of claim 1, wherein the OVI comprises a graphical representation of the MO.
8. The method of claim 1, wherein the OVI comprises contact info information of the MO.
9. [preamble] The method of claim 1, wherein computing distance-and-travel information comprises:
- [9a] identifying a change in travel conditions;
- [9b] computing an estimated time of arrival at the MO; and
- [9c] displaying the OVI with the estimated time of arrival in response to identifying the change in travel conditions.

10. **[preamble]** The method of claim 1, wherein computing distance-and-travel information comprises:
 - [10a]** obtaining a position of an electronic device configured to display the electronic map;
 - [10b]** transmitting the position of the electronic device to a remote server;
 - and
 - [10c]** receiving, from the remote server, the distance-and-travel information.
11. **[preamble]** The method of claim 1, wherein displaying the mapping-media content comprises overlaying the mapping-media content over at least a portion of the selected area of the electronic map, and wherein the method further comprises:
 - [11a]** receiving user input; and
 - [11b]** in response to receiving the user input, eliminating the mapping-media content.
12. The method of claim 11, further comprising restoring the portion of the selected electronic map that was overlaid with the mapping-media content.
13. **[preamble]** An apparatus, comprising:
 - [13a]** a display device configured to display a first portion of an electronic map and an object vector indicator (OVI),

[13b] wherein the OVI provides reference information for a map object (MO) which is not visible on the first portion of the electronic map; and

[13c] a processing device, configured to:

[13d] receive a user input indicating selection of the OVI; and

[13e] in response to receiving the user input, cause the display device to display media content associated with the MO.

14. The apparatus of claim 13, wherein the reference information comprises a distance from the apparatus to the MO and an estimated time of travel
15. The apparatus of claim 13, wherein the media content comprises a coupon or a sales event associated with the MO.
16. The apparatus of claim 13, wherein the MO identifies a social networking member, and wherein the media content comprises an image of the social networking member.
17. **[preamble]** The apparatus of claim 13,
[17a] wherein the MO is associated with a building, and
[17b] wherein the media content comprises a floor plan of the building.
18. **[preamble]** An apparatus, comprising:
[18a] a display device configured to display a first portion of an electronic map and an object vector indicator (OVI),

[18b] wherein the OVI provides reference information for a map object (MO) which is not visible on the first portion of the electronic map; and

[18c] a processing device, configured to:

[18d] identify a user selection of the OVI; and

[18e] in response to identifying the user selection, cause the display device to display a second portion of the electronic map.

19. The apparatus of claim 18, wherein the MO is displayed together with the second portion of the electronic map.
20. The apparatus of claim 18, wherein the second portion of the electronic map comprises a travel route to the MO.
21. The apparatus of claim 18, wherein the processing device is further configured to cause the display device to display an animated transition from the first portion to the second portion of the electronic map.
22. The apparatus of claim 21, wherein the animated transition comprises a series of images along a linear path of travel between the first portion and the second portion of the electronic map.
23. The apparatus of claim 21, wherein the animated transition comprises a series of images along a predetermined route of travel between the first portion and the second portion of the electronic map.

24. The apparatus of claim 23, wherein the series of images are displayed at a speed of transition that mimics real travel conditions.
25. The apparatus of claim 21, wherein the processing device is further configured to cause the display device to display the first portion of the electronic map after the animated transition is complete.
26. **[preamble]** An apparatus, comprising:
 - [26a]** a display device configured to display a first portion of an electronic map and an object vector indicator (OVI),
 - [26b]** wherein the OVI provides reference information for a map object (MO) which is not visible on the first portion of the electronic map; and
 - [26c]** a processing device, configured to:
 - [26d]** monitor a change in position of the apparatus; and
 - [26e]** in response to identifying the change in position, cause the display device to alter a visual characteristic of the OVI to represent a change in spatial relationship between the apparatus and the MO.
27. **[preamble]** The apparatus of claim 26,
 - [27a]** wherein the processing device is further configured to cause the display device to: display a position of the apparatus on the electronic map; and

[27b] alter an angular position of the OVI with respect to the position of the apparatus and the MO.

28. The apparatus of claim 26, wherein the processing device is further configured to cause the display device to alter a color of the OVI to indicate a relative distance between the apparatus and the MO.
29. The apparatus of claim 26, wherein the processing device is further configured to cause the display device to alter a length of a graphical vector associated with the OVI to indicate a relative distance between the apparatus and the MO.
30. The apparatus of claim 26, wherein the processing device is further configured to cause the display device to alter a position of the OVI with respect to a center of the electronic map.

CERTIFICATION UNDER 37 C.F.R. §42.24(d)

Pursuant to 37 C.F.R. §42.24(a)(1)(i), the undersigned hereby certifies that the foregoing PETITION FOR *INTER PARTES* REVIEW contains 13,948 words, excluding the parts of this Petition that are exempted under 37 C.F.R. §42.24(a), as measured by the word-processing system used to prepare this paper.

/Lionel M. Lavenue/
Lionel M. Lavenue, Lead Counsel
Reg. No. 46,859

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§42.6(e) and 42.105(a), the undersigned certifies that on May 26, 2023, a copy of the foregoing **Petition for *Inter Partes* Review, Petitioner's Power Of Attorney And Designation Of Lead And Backup Counsel, and Exhibits 1001-1023** were served by Priority Overnight FedEx on the correspondence address of record indicated in the Patent Office's Patent Center system for U.S. Patent No. 8,478,527:

Jialin Zhong
FABRICANT LLP
411 Theodore Fremd Avenue,
Suite 206 South
Rye, NY 10580

Date: May 26, 2023

By: /Daniel E. Doku/
Danie E. Doku
Litigation Legal Assistant
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP