

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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GOOGLE LLC,  
Petitioner,

v.

AGIS SOFTWARE DEVELOPMENT LLC,  
Patent Owner.

Patent No. 9,408,055  
Filing Date: April 24, 2015  
Issue Date: August 2, 2016

Inventor: Malcolm K. Beyer, Jr.  
Title: METHOD TO PROVIDE AD HOC AND PASSWORD  
PROTECTED DIGITAL AND VOICE NETWORKS

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**PATENT OWNER'S NOTICE OF APPEAL**  
Case No. IPR2018-01080

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Pursuant to 35 U.S.C. §§ 141 and 142 and 37 C.F.R. §§ 90.2 and 90.3, Patent Owner AGIS Software Development LLC (“AGIS” or “Patent Owner”) hereby provides notice that it appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision entered December 2, 2019 (Paper 31) and from all underlying orders, decisions, rulings, and opinions regarding U.S. Patent No. 9,408,055 (the “’055 patent”) in Case No. IPR2018-01080. This notice is timely under 37 C.F.R. § 90.3, having been filed within 63 days after the date of the Final Written Decision.

For the limited purpose of providing the Director with the information requested in 37 C.F.R. § 90.2(a)(3)(ii), Patent Owner anticipates that the issues on appeal may include, but are not limited to: the Board’s claim constructions, its application of those constructions, its obviousness determinations including that claims 1, 2, 5–7, 14, 15, 17, 21–25, 27, 28, 30, 32–34, 36, 37, 40–43, 45, 49, and 54 of the ’055 patent are unpatentable under 35 U.S.C. § 103; the findings, rulings and conclusions supporting or relating to those determinations; the constitutionality of the appointments of Administrative Patent Judges Trevor M. Jefferson, Christa P. Zado, and Kevin C. Trock under U.S. Const. art. II, § 2, cl. 2. in view of *Arthrex v. Smith & Nephew*, No. 18-2140 (Fed. Cir. 2019); and any other issues decided adversely to Patent Owner in any orders, decisions, rulings, or opinions in IPR2018-01080.

Simultaneous with this submission, three (3) copies of this Notice of Appeal are being filed with the Clerk of the United States Court of Appeals for the Federal Circuit and being submitted electronically through the Court's CM/ECF system, together with the requisite fee in the amount of \$500.00. In addition, a copy of this Notice of Appeal is being filed with the Patent Trial and Appeal Board and served upon counsel of record for Google LLC.

Respectfully submitted,

Dated: February 3, 2020

*/Vincent J. Rubino, III/*  
Vincent J. Rubino, III (Reg. No. 68,594)  
Lead Counsel for Patent Owner  
**BROWN RUDNICK LLP**  
7 Times Square  
New York, NY 10036  
Telephone: 212-209-4800  
Facsimile: 212-209-4801  
Email: vrubino@brownrudnick.com

Peter Lambrianakos (Reg. No. 58,279)  
Enrique W. Iturralde (Reg. No. 72,883)  
Backup Counsel for Patent Owner  
**BROWN RUDNICK LLP**  
7 Times Square  
New York, NY 10036  
Tel: 212-209-4800  
Fax: 212-209-4801  
Email: plambrianakos@brownrudnick.com  
Email: eiturralde@brownrudnick.com

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Case IPR2018-01080  
Patent 9,408,055 B2

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Before TREVOR M. JEFFERSON, CHRISTA P. ZADO, and  
KEVIN C. TROCK, *Administrative Patent Judges*.

TROCK, *Administrative Patent Judge*.

JUDGMENT  
Final Written Decision  
Determining All Claims Unpatentable  
*35 U.S.C. § 318(a)*

## I. INTRODUCTION

We have authority to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision issues pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed herein, we determine that Google LLC (“Petitioner”) has shown, by a preponderance of the evidence, that claims 1, 2, 5–7, 14, 15, 17, 21–25, 27, 28, 30, 32–34, 36, 37, 40–43, 45, 49, and 54 (the “challenged claims”) of U.S. Patent No. 9,408,055 B2 (Ex. 1001, “the ’055 patent”) are unpatentable. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

### A. Procedural History

Petitioner filed a request for *inter partes* review of the challenged claims of the ’055 patent. Paper 2 (“Pet.”). AGIS Software Development, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Petitioner filed an authorized Reply to the Preliminary Response. Paper 8.

On December 4, 2018, the Board entered a decision instituting an *inter partes* review of all claims and all grounds presented in the Petition. Paper 9 (“Inst. Dec.”).

After institution, Patent Owner filed a Response to the Petition. Paper 15 (“PO Resp.”). Petitioner thereafter filed a Reply to Patent Owner’s Response. Paper 19 (“Reply”). Patent Owner filed a Sur-reply to Petitioner’s Reply. Paper 21 (“Sur-reply”). An oral hearing was held on Sept. 6, 2019. A transcript of the hearing is included in the record. Paper 29 (“Tr.”).

IPR2018-01080

Patent 9,408,055 B2

*B. Related Proceedings*

Petitioner advises that the '055 patent has been asserted in several district court cases in the Eastern District of Texas, namely, *AGIS Software Development LLC v. Huawei Device USA Inc.*, TXED-2-17-cv-00513, filed June 21, 2017; *AGIS Software Development LLC v. HTC Corporation*, TXED-2-17-cv-00514, filed June 21, 2017; *AGIS Software Development LLC v. LG Electronics, Inc.*, TXED-2-17-cv-00515, filed June 21, 2017; *AGIS Software Development LLC v. Apple Inc.*, TXED-2-17-cv-00516, filed June 21, 2017; and *AGIS Software Development LLC v. ZTE Corporation*, TXED-2-17-cv-00517, filed June 21, 2017. Pet. 76.

Patent Owner further advises that the '055 patent and related patents are the subject of various filings requesting *inter partes* review. Paper 4, 2–3 (*see* table identifying *inter partes* review case numbers).

*C. The '055 Patent*

The '055 patent specification (the “Specification”) generally concerns rapidly establishing an ad hoc network of devices (e.g., smartphones, PDAs, or personal computers) with users, such as first responders, and logging onto a network using the network’s name and security key (a common “password” for everyone). Ex. 1001, Title, Abs, 10:55–57 (devices sign in with “the same ad hoc event name and password”). Once logged on, the users’ devices exchange each other’s location information via a remote server, and each participant’s location is displayed as a user-selectable symbol correctly positioned on an interactive display of a georeferenced map. *Id.* at 6:47–7:40; Fig. 1. Users may communicate or send data to another user by selecting the user’s symbol and the desired action. *Id.*

Figure 1 of the '055 patent is set out below.

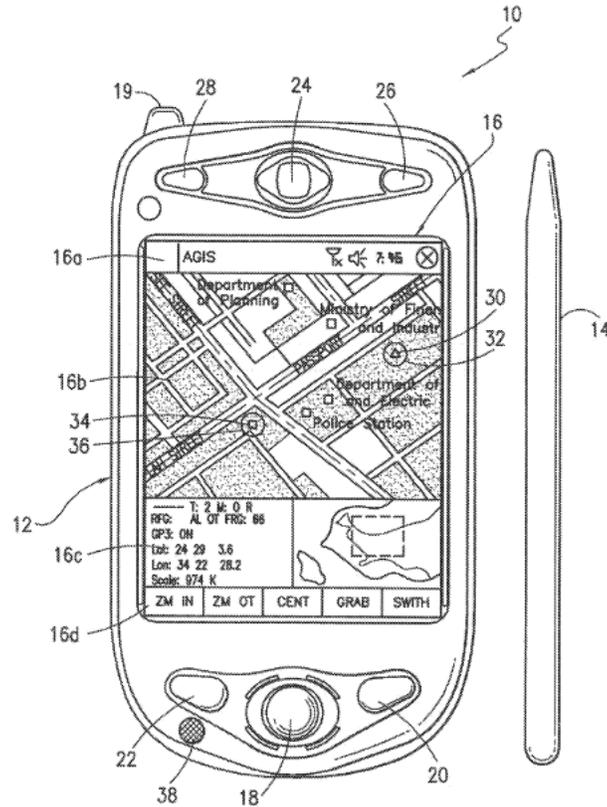


FIG. 1

Figure 1, shown above, depicts a user's digital device 10 (cellular phone/PDA/GPS) having a touch screen 16 displaying a geographical map 16b with georeferenced entities 30, 34. *Id.* at 5:21–42, 6:49–65.

#### D. Challenged Claims

Claims 1, 28, 41, and 54 are the independent challenged claims. Claims 1, 28, and 41 are substantially similar, but differ in that claim 1 recites a method (Ex. 1001, 14:39–15:16), claim 28 recites a system (*id.* 17:28–18:7), and claim 41 recites a device (*id.* 19:7–50). Claim 54 is substantially similar to claim 1, but recites an additional limitation of transmitting an IP-based text message to a second device via a cellular

network. *Id.* 20:49–21:29. Independent claims 1, 28, 41, and 54, set out below, are illustrative.

1. [preamble] A method comprising:  
performing by a first device:

28. [preamble] A system comprising:  
A first device programmed to perform operations  
comprising:

41. [preamble] A non-transitory storage device  
having instructions stored thereon that, when  
executed by a first device, cause the first device to  
perform operations comprising:

[1.1; 28.1; and 41.1] obtaining contact information  
of a plurality of second devices, wherein the contact  
information comprises respective telephone  
numbers of the second devices;

[1.2; 28.2; and 41.12] facilitating initiation of  
Internet Protocol (IP) based communication  
between the first device and the respective second  
devices by using respective telephone numbers to  
send, from the first device to the second devices,  
respective Short Message Service (SMS) messages  
including a telephone number of the first device and  
information usable by the respective second device  
to send IP-based communication to the first device;

[1.3; 28.3; and 41.3] receiving respective IP-based  
responses to the SMS messages, wherein the IP-  
based responses to the SMS messages include  
location information of the respective second  
devices;

[1.4; 28.4; and 41.4] transmitting IP-based  
messages including a location of the first device to  
the respective second devices;

[1.5; 28.5; and 41.5] presenting, via an interactive  
display of the first device, an interactive map and a

plurality of user selectable symbols corresponding to the plurality of second devices, wherein the symbols are positioned on the map at respective positions corresponding to the respective locations of the second devices;

[1.6; 28.6; and 41.6] identifying user interaction with the interactive display selecting one or more of the user-selectable symbols corresponding to one or more of the second devices and user interaction with the display specifying an action and, based thereon, sending data to the one or more second devices;

[1.7; 28.7; and 41.7] receiving user input via user interaction with the interactive display of the first device, the user input specifying a location and a symbol corresponding to an entity other than the first device and the second devices; and

[1.8; 28.8; and 41.8] based on the user input, adding the user-specified symbol to the interactive display at a position on the interactive map corresponding to the user-specified location, and transmitting the user-specified symbol and location to the second devices for addition of the user-specified symbol to respective interactive displays of the second devices at respective positions on respective interactive maps corresponding to the user-specified location.

54. [preamble] A method comprising:  
performing by a first device:

[54.1] obtaining contact information of a plurality of second devices, wherein the contact information comprises respective telephone numbers of the second devices;

[54.2] facilitating initiation of Internet Protocol (IP) based communication between the first device and the respective second devices by using the respective telephone numbers to send, to the second devices, respective Short Message Service (SMS) messages including a telephone number of the first

device and information usable by the respective second device to send IP-based communication to the first device;

[54.3] receiving respective IP-based responses to the SMS messages, wherein the IP-based responses to the SMS messages include location information of the respective second devices;

[54.4] transmitting IP-based messages including a location of the first device to the respective second devices;

[54.5] transmitting an IP-based text message to at least one of the second devices via a cellular communications network;

[54.6] presenting, via an interactive display of the first device, an interactive map and a plurality of user selectable symbols corresponding to the plurality of second devices, wherein the symbols are positioned on the map at respective positions corresponding to the respective locations of the second devices;

[54.7] identifying user interaction with the interactive display selecting one or more of the user-selectable symbols corresponding to one or more of the second devices and user interaction with the display specifying an action and, based thereon, sending data to the one or more second devices;

[54.8] receiving user input via user interaction with the interactive display of the first device, the user input specifying a location and a symbol corresponding to an entity other than the first device and the second devices; and

[54.9] based on the user input, adding the user-specified symbol to the interactive display at a position on the interactive map corresponding to the user-specified location, and transmitting the user-specified symbol and location to the second devices for addition of the user-specified symbol to

respective interactive displays of the second devices  
at respective positions on respective interactive  
maps corresponding to the user-specified location.

Ex. 1001, 14:38–15:16, 17:28–18:7, 19:7–50, 20:49–21:29 (numbers and brackets added).<sup>1</sup>

*E. Relevant References*

Petitioner relies upon the following references that are pertinent to our analysis:

- (1) U.S. Patent No. 6,366,782 B1, issued Apr. 2, 2002 (“Fumarolo”) (Ex. 1005);
- (2) U.S. Patent Application No. 2004/0054428 A1, published Mar. 18, 2004 (“Sheha”) (Ex. 1006);
- (3) U.S. Patent Application No. 2004/0157590 A1, published Aug. 12, 2004 (“Lazaridis”) (Ex. 1007);
- (4) U.S. Patent Application No. 2005/0221876 A1, published Oct. 6, 2005 (“Van Bosch”) (Ex. 1008); and
- (5) U.S. Patent Application No. 2002/0027901 A1, published Mar. 7, 2002 (“Liu”) (Ex. 1009);

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<sup>1</sup> The Petition appears to misnumber the sequence of claim 1’s limitations, apparently skipping the number 1.7. *See* Pet. 38–45. We correct the numbering here for our analysis, which is consistent with our numbering in the Institution Decision. *See* Inst. Dec. 4–6.

*F. Asserted Grounds of Unpatentability*

Petitioner contends that the challenged claims are unpatentable under 35 U.S.C. § 103 over the asserted prior art. Pet. 20. In particular, Petitioner asserts the following grounds. *Id.*

<b>Claim(s) Challenged</b>	<b>35 U.S.C. §</b>	<b>References</b>
1–2, 5–7, 14–15, 17, 21–25, 28, 30, 32–34, 36, 40–43, 45, 49, 54	103	Fumarolo, Sheha, Lazaridis
27	103	Fumarolo, Sheha, Lazaridis, Liu
37	103	Fumarolo, Sheha, Lazaridis, Van Bosch

## II. DISCUSSION

### *A. Level of Ordinary Skill*

In determining whether an invention would have been obvious, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991).

Petitioner asserts that a person of ordinary skill in the art in the field of the ’055 patent

would have had either: (1) a Bachelor of Science degree in Electrical Engineering or an equivalent field, with three to five years of academic or industry experience in the wireless/mobile location industry or comparable industry experience; or (2) a Master of Science degree in Electrical Engineering or an equivalent field, with two to four

years of academic or industry experience in the same field.

Pet. 20 (citing Ex. 1003 ¶ 26).

Patent Owner asserts that a person of ordinary skill in the art at the time of the invention would have at least a bachelor's degree in computer science, computer engineering, or equivalent with one to two years of experience in the field of computer programming with a focus on building systems such as GPS-based localization and network transmission. PO Resp. 7. Patent Owner further asserts that extensive experience and technical training might substitute for educational requirements, while advanced degrees might substitute for experience. *Id.* (citing Ex. 200[7]<sup>2</sup> ¶¶ 18–20).

The parties agree that an ordinarily skilled artisan in the field of the '055 patent would have a bachelor's degree in a pertinent technical field, and a few years of experience and/or more advanced education in the field. Therefore, we determine a person of ordinary skill in the art would have a bachelor's degree in electrical engineering, computer science, computer engineering, or equivalent, and two to four years of additional experience, either work or educational, in the field of electrical communications. We do not adopt Patent Owner's assessment that a skilled artisan would have focused on building systems such as GPS-based localization and network

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<sup>2</sup> Throughout the Patent Owner Response, Patent Owner cites to Ex. 2009 repeatedly in support of its arguments. *See, e.g.*, PO Resp. 29–31. Exhibit 2009, however, is the deposition transcript of Mr. Williams, which does not contain any paragraph (¶) designations. We presume, therefore, that Patent Owner has cited mistakenly to Exhibit 2009 when it uses such paragraph designations, where it meant to cite to Exhibit 2007, which is the Carbonell declaration.

IPR2018-01080

Patent 9,408,055 B2

transmission. Patent Owner does not explain how this is pertinent to the field of the '055 patent, which relates to establishing ad hoc digital and voice networks with communication devices (e.g., smartphones, PDAs) with users, such as first responders. *See, e.g.*, Ex. 1001, (57).

We note that the level of skill in the art also may be reflected in the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

### *B. Claim Construction*

In an *inter partes* review such as this one, filed before November 13, 2018, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent. 37 C.F.R. § 42.100(b) (2017); *see also* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018). Consistent with that standard, we assign claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention, in the context of the entire patent disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Only those terms that are in controversy need be construed, and only to the extent necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Here, Petitioner asserts that “no claim terms require construction.” Pet. 19. Petitioner also asserts that, “each term should be given its plain and ordinary meaning.” *Id.* Patent Owner “agrees that the claim terms should be given their ‘broadest reasonable construction’ consistent with the

IPR2018-01080

Patent 9,408,055 B2

specification,” and that the “words of the claim must be given their plain meaning unless such meaning is inconsistent with the specification and prosecution history.” PO Resp. 9. Patent Owner also notes that the District Court in a related proceeding, *AGIS Software Development LLC v. Huawei Device USA Inc., et al.*, No. 2:2017-cv-00513 (E.D. Tex.), has entered a claim construction order, “adopting the constructions presented in Exhibit 2010.” *Id.*<sup>3</sup> Patent Owner requests, “for the purposes of consistency across proceedings and to the extent any terms require construction, the Board should exercise its discretion to adopt the same constructions set forth in the District Court proceedings.” *Id.*

The parties agree that the words of the claims should be given their plain meaning unless that meaning is inconsistent with the specification and the prosecution history. Moreover, the parties do not dispute any particular claim terms nor do they proffer or argue any particular claim construction. Indeed, Petitioner contends, “no terms require construction,” because “an express construction is not necessary to resolve the unpatentability issues

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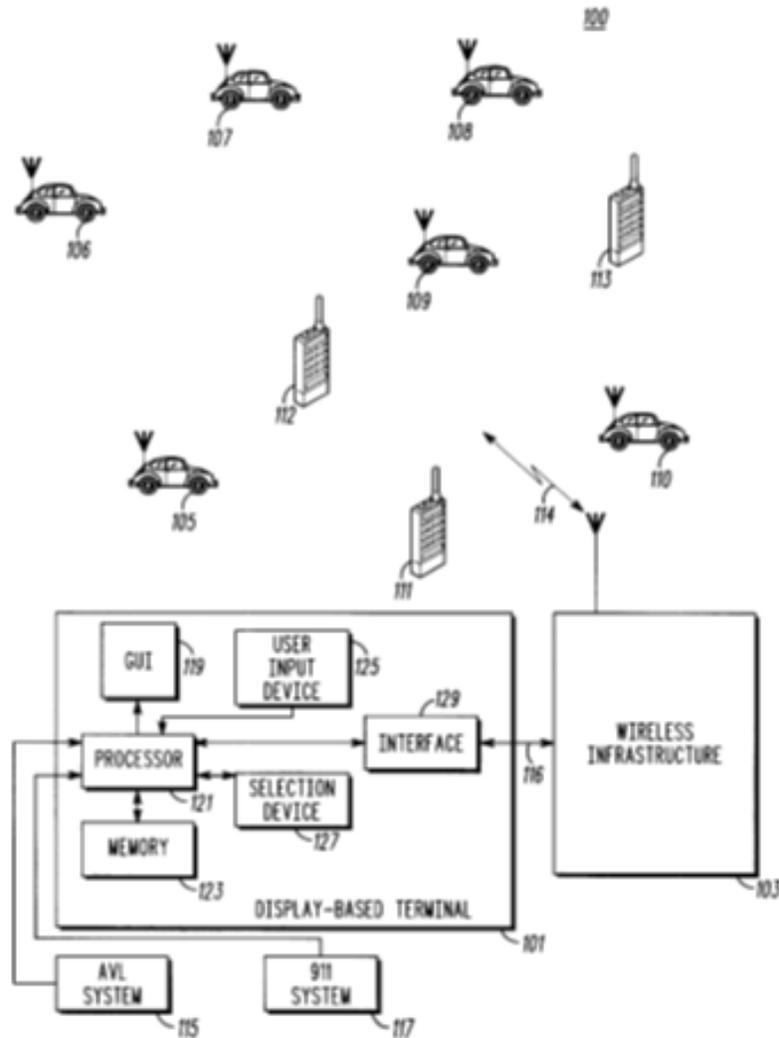
<sup>3</sup> Exhibit 2010, cited by Patent Owner, is not a district court claim construction order, nor does it appear related to claim construction. *See* Ex. 2010 (printout of a Motorola product webpage). We have reviewed both parties’ exhibit lists, as well as the exhibits submitted by the parties in this proceeding, but we are unable to locate a claim construction order entered by the District Court. Nonetheless, we have obtained, through the Public Access to Court Electronic Records (PACER), a Claim Construction Memorandum and Order, dated October 10, 2018, in *AGIS Software Development LLC v. Huawei Device USA Inc., et al.*, No. 2:17-cv-513, at Docket No. 205 (“Claim Construction Order”), which we enter into the record as Exhibit 3001 along with this Decision. *See* Ex. 3001. We note that this Claim Construction Order appears to be the same order entered on November 20, 2018 by the Panel in a related case, IPR2018-01079, as Ex. 3001.

here.” Pet. 19. Patent Owner only requests that “to the extent any terms require construction, the Board should exercise its discretion to adopt the same constructions set forth in the District Court proceedings.” PO Resp. 9. We have considered the District Court’s Claim Construction Order, but for purposes of this Decision, and upon review of the record in this proceeding, we do not find it necessary to construe expressly any particular claim terms to resolve the patentability issues before us.

*C. Fumarolo (Ex. 1005)*

Fumarolo describes a dispatch system with a display-based terminal, such as a CAD (Computer Aided Dispatch) terminal, having an integrated mapping program to communicate directly with communication units from a single map environment. Ex. 1005, Abs., 1:18–22, 2:52–56. Fumarolo explains that when such a system receives incident information from a 911 system that is coupled to the CAD system, a dispatcher “can quickly determine which communication unit users (e.g., policemen, firemen, paramedics, and so forth) would be in the best situation to respond to the incident.” *Id.* at 1:43–45. Fumarolo further explains the locations of the communication units are typically provided to the CAD system on a periodic basis by an automatic vehicle location (AVL) system that is coupled to the CAD system via a dedicated communication link.

Figure 1 of Fumarolo is shown below.



**FIG. 1**

Figure 1, shown above, depicts Fumarolo’s communication system that includes a display based terminal 101 in communication 116 with a wireless infrastructure 103 through an interface 129. *See Ex. 1005, 4:23–38.* The wireless infrastructure 103 permits communication 114 with a plurality of mobile wireless units 105–113. *Id.* at 4:6–22. Fumarolo explains that terminal 101’s processor 121 “receives location coordinates of the communication units 105–113 on a periodic basis from the AVL system 115, from the communication units 105–113 themselves, or from the

wireless infrastructure 103 in accordance with known techniques.” *Id.* at 8:37–43. Processor 121 then instructs GUI 119 to “display the locations of the communication units 105–113 on the map . . . or a pulldown menu identifying the types of communications and/or the modes of transmission supported by the system 100.” *Id.* at 43–48. Terminal 101 displays a map to the user indicating locations of communication units in at least a portion of the communication system. *Id.* at 3:23–26. Terminal 101 then “receives a selection from the map [from the user] . . . of at least one communication unit and an indication of the user’s desire to communicate with the selected communication unit or units.” *Id.* at 3:26–31. Based on the selection, terminal 101 may communicate with the communication units via “individual or private communication,” “group communication,” “voice communication,” “data communication,” or some combination thereof. *Id.* at 5:53–60.

*D. Sheha (Ex. 1006)*

Sheha is directed to a method and apparatus for sending and retrieving location relevant information to a user by selecting and designating a point of interest that is displayed on a graphical user interface and sending the location information associated with that point of interest to a receiver that is also selected using the graphical user interface. Ex. 1006, Abs. Sheha explains that “providing a solution enabling users to graphically send, request, and plan, in real-time, location-relevant information between users and devices would prove especially useful for wireless devices that incorporate positioning technologies, such as Global Positioning Satellite (GPS) devices,” typically used in industrial applications such as Automatic Vehicle Location (AVL) or Feet Tracking. *Id.* ¶¶ 7, 18. Sheha also explains the “invention allows users to send map identifiers using the real-time

IPR2018-01080

Patent 9,408,055 B2

communication system . . . to other users in their roster list or, in an ad-hoc manner, to other users identified by a unique identifier, such as an e-mail address, telephone number, or the like.” *Id.* ¶ 99. Sheha explains that the invention “may be practiced by using communication devices such as a personal computer, a personal digital assistance, in-vehicle navigation systems, or a mobile telephone.” *Id.* at Abs.

*E. Lazaridis (Ex. 1007)*

Lazaridis describes a system “for allowing mobile stations to exchange identification information using a predetermined communication path for the purpose of obtaining identification information to use in establishing a different communication path for communicating.” Ex. 1007, Abs.

Figure 3 of Lazaridis, shown below, depicts such a system.

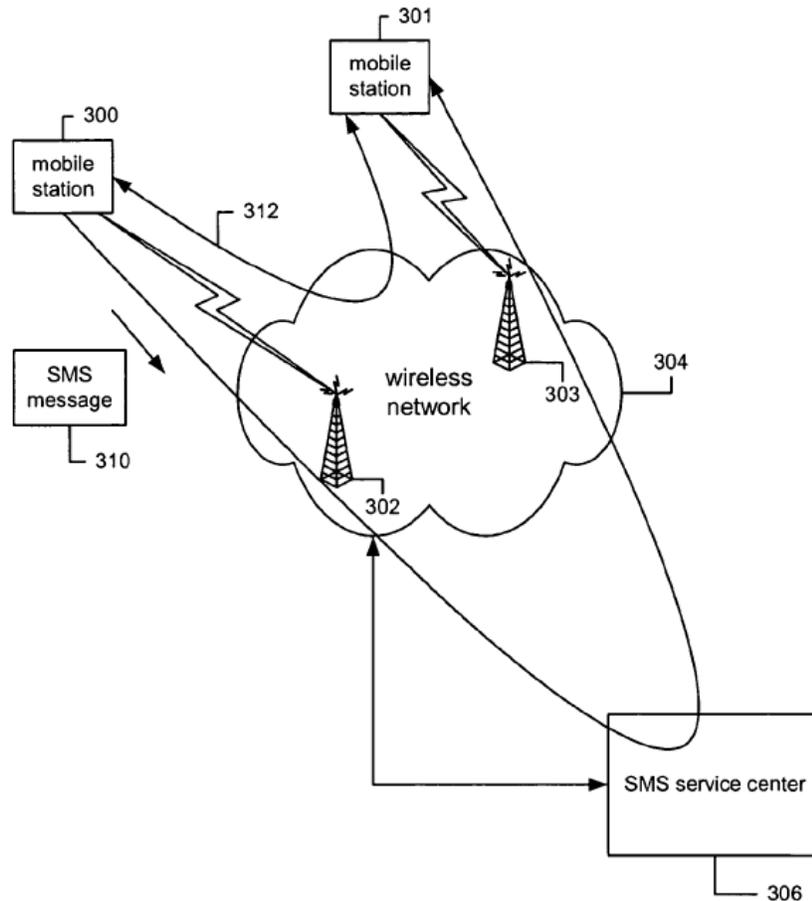


Figure 3 of Lazaridis, shown above, is a block diagram of a system for exchanging mobile station identification information through an SMS service. *Id.* ¶ 11. As Lazaridis explains, the current IP address of the first mobile station 300 is sent in an SMS message 310, which is addressed to the second mobile station 301. *Id.* ¶ 31. Once the second mobile station 301 has received an SMS message 310 containing identification information for the first mobile station 300, the current IP address associated with the first mobile station 300 is known to the second mobile station 301, which can send data to the first mobile station 300. *Id.*

*F. Van Bosch (Ex. 1008)*

Van Bosch is directed to a system and procedure for posting and receiving location based messages in a wireless communication based

IPR2018-01080

Patent 9,408,055 B2

network. Ex. 1008, Abs. In *Van Bosch*, the system allows messages to be posted to specified users and to be associated with a particular location for which the message is pertinent. *Id.* *Van Bosch* explains that the messages can be textual, audio, video, or pictorial messages and may be superimposed on computerized maps to make association between the message and the location more meaningful. *Id.*

*G. Liu (Ex. 1009)*

*Liu* is directed to anonymous voice communications between devices over a network. Ex. 1009, Abs, Fig. 1. *Liu* explains that the network may be a packet-switched network, such as the Internet, supporting Voice over Internet Protocol (VoIP). *Id.* ¶ 62. *Liu* further explains that the devices can be variously implemented as desktop or laptop personal computers, as Internet appliances, and as PDAs or other handheld devices (e.g., smart phones with Internet accessibility). *Id.* ¶ 54.

*H. Principles of Law on Obviousness*

35 U.S.C § 103 forbids issuance of a patent if “the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” In *Graham*, the Court set out a framework for analyzing patentability under § 103, by considering the scope and content of the prior art; differences between the prior art and the claims at issue; and the level of ordinary skill in the pertinent art.

The Supreme Court has made clear that we apply “an expansive and flexible approach” to the question of obviousness. *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415 (2007). Whether a patent claiming the combination

of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. Reaching this conclusion, however, requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.*

*I. Obviousness over Fumarolo, Sheha, and Lazaridis*

Petitioner contends claims 1, 2, 5, 6, 7, 14, 15, 17, 21–25, 28, 30, 32–34, 36, 40–43, 45, 49, and 54 are obvious under 35 U.S.C. § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis. Pet. 20, 22–70.

*1. Analysis of Independent Claims*

As noted above, independent claims 1, 28, 41, and 54 are substantially similar. Petitioner provides identical arguments for claims 1, 28, and 41, explaining “[a]fter the preambles, these claims recite the exact same features using the exact same language.” Pet. 22, *id.* at 23–46. For claim 54, Petitioner relies on its arguments for claim 1, asserting, “claim 54 is much like independent claim 1,” except that Petitioner also addresses one additional feature not present in the other independent claims. *Id.* at 46–48. Similarly, Patent Owner’s arguments for claims 1, 28, and 41 are identical. PO Resp. 11–36. Patent Owner does not provide arguments specific to claim 54. *See generally* PO Resp. Accordingly, we address the limitations of claim 1 below, but our consideration of exemplary claim 1’s limitations applies to the corresponding limitations of claims 28, 41, and 54. We also

address the additional limitation in claim 54, which relates to transmitting an IP-based text message to a second device via a cellular network.

Patent Owner argues Petitioner has not shown: (1) Fumarolo teaches a “first device,” (2) Fumarolo, in combination with Sheha or Lazaridis, teaches a “first device,” (3) the combination of Fumarolo, Sheha, and Lazaridis teaches limitation 1.3; and (4) the combination of Fumarolo and Sheha teaches limitation 1.8. PO Resp. 11–34.

*[preamble] A method comprising: performing by a first device: (see also preamble of claims 28, 41, and 54)<sup>4</sup>*

Petitioner argues Fumarolo’s disclosure of a display-based terminal reads on the “first device,” as recited in the preamble. Pet. 22–23 (citing Ex. 1005, 1:9–13). Petitioner further asserts, “Sheha and Lazaridis also disclose the use of mobile devices that read on the preamble’s recitation of ‘first device.’” *Id.* at 23.<sup>5,6</sup>

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<sup>4</sup> Petitioner contends the “first device” language in the independent claims is part of the preamble. Pet. 22. Patent Owner does not dispute Petitioner’s contention that the “first device” language is part of the preamble. *See generally* PO Resp. Neither party expressly contends whether, nor explains why, this language should or should not be given patentable weight. However, both parties’ arguments assume the claims require a “first device,” and our analysis proceeds on that assumption.

<sup>5</sup> In the discussion of claim 1’s preamble, Petitioner does not identify what it contends in Sheha and Lazaridis maps to the claimed “first device,” or provide any explanation regarding how Sheha and Lazaridis disclose a “first device.” Pet. 23. Accordingly, our ultimate finding in favor of Petitioner does not depend on Petitioner’s contention, with regard to claim 1’s preamble, that Sheha and Lazaridis disclose a “first device.”

<sup>6</sup> Because claim 1 recites a first device performing limitations 1.1 through 1.8, Petitioner contends Fumarolo teaches the display-based terminal, alone or in combination with other art, performs the steps recited in limitations 1.1

In particular, Petitioner relies on Fumarolo’s “display-based terminal” for disclosure of the “first device.” Pet. 22 (“Fumarolo discloses a display-based terminal that reads on the “first device.””). Petitioner specifically identifies Fumarolo’s Field of the Invention, which discloses, “[t]he present invention relates generally to communication systems, and in particular, to a communication system that employs a method and apparatus for allowing a user of a *display-based terminal* to communicate with communication units in the communication system.” *Id.* at 22–23 (citing Ex. 1005, 1:9–13) (emphasis added). Petitioner further explains Fumarolo discloses that “this” display-based terminal (i.e., the display-based terminal disclosed in the Field of the Invention) can be implemented as “a remote terminal.” *Id.* at 23 (citing Ex. 1005, 4:66–5:21); *see also* Fig. 2 (block diagram illustrating an embodiment including a remote terminal).

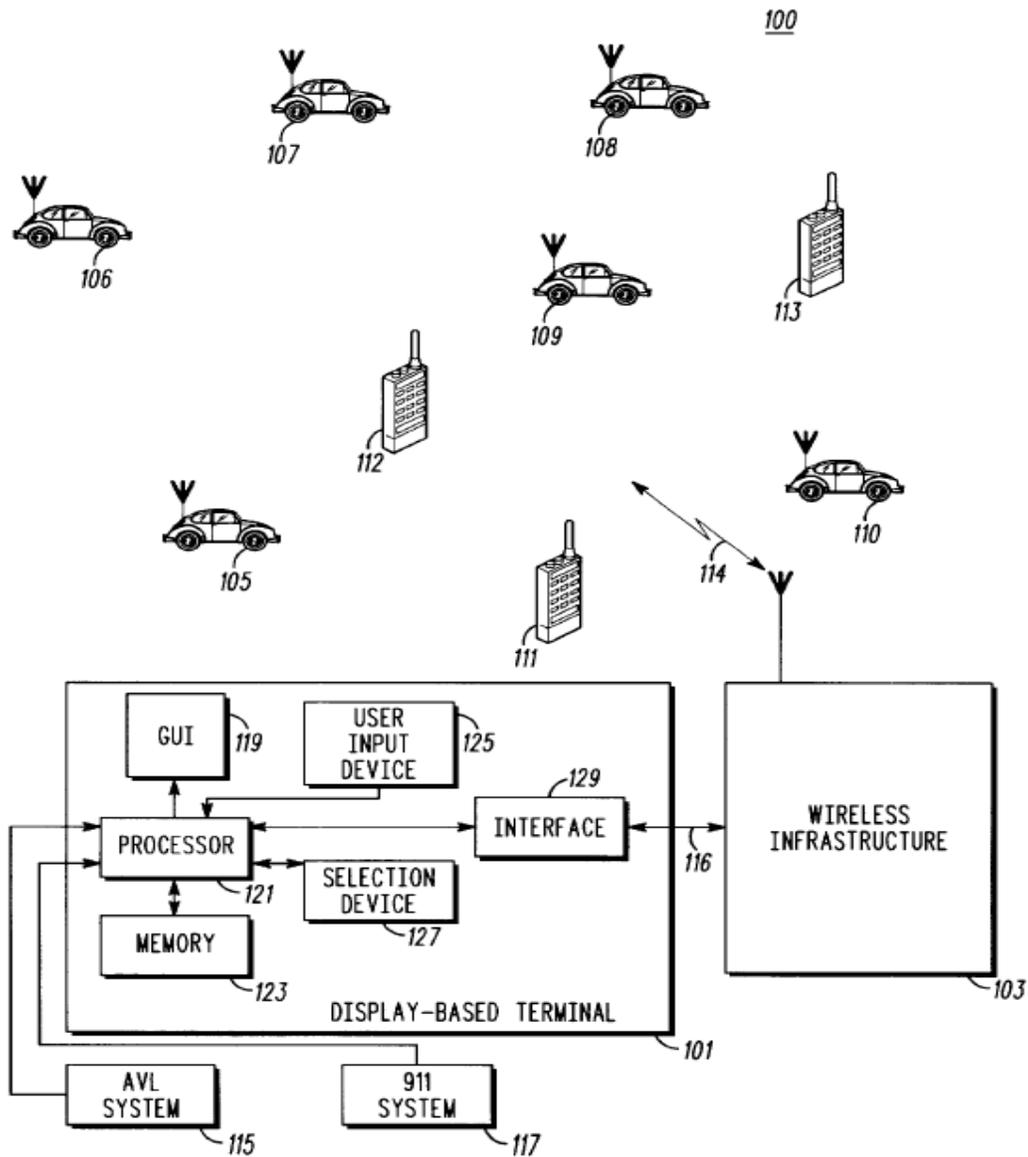
In the discussion of the preamble, Petitioner does not explain the relevance of Fumarolo’s “remote terminal” to the claimed “first device.” *Id.* at 23. However, with regard to limitations 1.1, 1.2, 1.5, and 1.6, Petitioner argues the Petition relies on Fumarolo’s description of a display-based terminal, and references Fumarolo’s remote terminal in the context of incorporating Sheha’s and Lazaridis’ communication features into Fumarolo. Reply 7 (citing Pet. 23–24, 26–30, 35–38, and 38–39). Discussed in further detail below, Fumarolo teaches at least two embodiments, one shown in Figure 1 and an alternative shown in Figure 2. Ex. 1005, 2:59–64, Fig. 1, Fig. 2.

With regard to Figure 1, Fumarolo explains, “[t]he communication system 100 includes a display-based terminal 101, a wireless infrastructure

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through 1.8. Pet. 23–46.

103, and a plurality of communication units 105-113 that communicate with the wireless infrastructure 103 over one or more communication resources 114.” See Ex. 1005, 3:61–65. Figure 1 of Fumarolo is shown below.

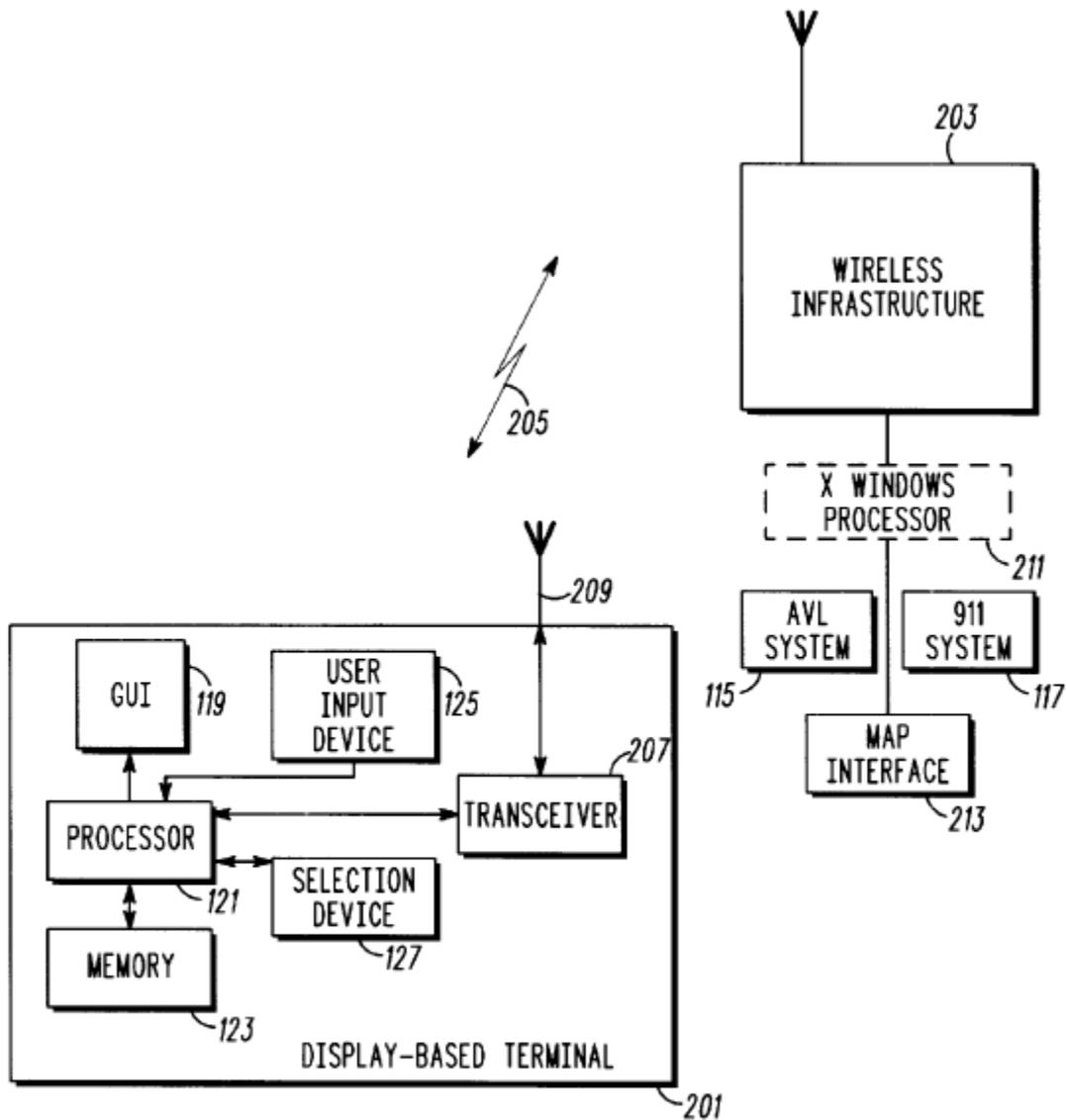


**FIG. 1**

Figure 1 of Fumarolo, shown above, depicts the components of Fumarolo’s communication system. Ex. 1005, 3:59–65. Petitioner points out that Fumarolo’s display-based terminal displays “a map to the terminal

user indicating locations of communication units in at least a portion of a communication system.” Pet. 23 (citing Ex. 1005, 12:58–62).

Petitioner also points out that Fumarolo teaches the “display-based terminal” may be implemented as a “remote terminal.” *Id.* (citing Ex. 1005, 4:66–5:21). Figure 2 of Fumarolo is shown below.



**FIG. 2**

Figure 2 of Fumarolo, shown above, depicts a display-based terminal

IPR2018-01080

Patent 9,408,055 B2

201 as a remote terminal. Ex. 1005, 4:66–67.

Patent Owner argues Petitioner improperly relies on two distinctly different embodiments, Fumarolo’s “display-based terminal” and “remote terminal,” to advance its arguments regarding the recited *first device*. PO Resp. 14–17. Patent Owner submits that a “first device” is required in each and every limitation of the independent claims. *Id.* at 15. However, Patent Owner’s argument that Petitioner’s showing is insufficient focuses on Petitioner’s discussion of the preamble. Patent Owner argues Petitioner relies on two separate embodiments, that of a “display-based terminal” and a “remote terminal.” *Id.* (citing Pet. 22–23). According to Patent Owner, Petitioner combines two embodiments without making a requisite showing that the embodiments are interchangeable or that a skilled artisan would have been motivated to combine them. *Id.* at 16. We find these arguments unavailing.

Contrary to Patent Owner’s assertion, Petitioner’s arguments regarding the preamble do not present a combination of separate embodiments. As we discussed above, Petitioner relies on the disclosure in the Field of the Invention that uses the term *display-based terminal* broadly. Pet. 23 (citing Ex. 1005, 1:9–13). Therefore, Petitioner’s assertion that the display-based terminal can be a remote terminal does not combine separate embodiments. Patent Owner incorrectly asserts Petitioner’s reference to a display-based terminal refers to display-based terminal 101 shown in Figure 1 of Fumarolo. Sur-Reply 9 (citing Petitioner’s argument, Pet. 22–23, regarding the preamble of claim 1, arguing Petitioner maps two distinct embodiments to the claimed “first device”: display-based terminal 101 and remote terminal 102). Contrary to Patent Owner’s assertion, as we noted above, Petitioner does not, in the discussion of the preamble, rely on display-

based terminal 101. Pet. 22. Petitioner instead relies on the description in the Field of the Invention that refers broadly to display-based terminals. *Id.* (citing Ex. 1005, 1:9–13).

To the extent Patent Owner’s contention that Petitioner relies on multiple embodiments is directed to Petitioner’s arguments regarding a first device performing the steps recited in one or more of limitations 1.1 to 1.8, Patent Owner does not make this argument explicit. PO Resp. 14–17. Nor does Patent Owner specifically identify which arguments by Petitioner it contends are insufficient. *Id.* The only portion of the Petition Patent Owner cites is the Petition’s discussion of the preamble, which as we discussed above, does not combine multiple embodiments. *Id.*

Aside from Patent Owner’s identification of the Petition’s discussion of the preamble of claim 1, Patent Owner’s only discussion to support its contention that Petitioner improperly combines multiple embodiments of Fumarolo does not cite to the Petition or specifically identify where it asserts the Petition relies on multiple embodiments for disclosure of the “first device.” *Id.* at 15. To support its contention, Patent Owner asserts: (1) Petitioner’s expert, Mr. Williams, “confirmed that the “display-based terminal” alone cannot meet the claim limitations and that the Petition alleges that Fumarolo’s “‘remote terminal’ meets the claimed *first device*,” and (2) Petitioner alleges Fumarolo’s “display-based terminal” alone describes limitation 1.5. *Id.* at 15 (citing Ex. 2009, 109:9–19; Ex. 2007 ¶¶ 29–37). Tellingly, Patent Owner does not cite to any argument in the Petition to support these assertions. *Id.* As we discussed above, and discuss in more detail below, Petitioner’s assertion is that Fumarolo’s display-based terminal is the claimed “first device.” Pet. 22–23; Reply 2, 7. To the extent Petitioner relies on Fumarolo’s remote terminal, Petitioner asserts it is in the

context of the motivation to incorporate Sheha's and Lazaridis's communication features into Fumarolo. Reply 2, 7–8.

Indeed, Petitioner replies to Patent Owner's arguments by identifying arguments in the Petition regarding limitations 1.1, 1.2, 1.5, and 1.6, asserting the Petition relies on Fumarolo's display-based terminal to teach the limitations of the first device, and references the remote terminal in the context of incorporating Sheha and Lazaridis's communication features into Fumarolo. Reply 2, 7 (citing Pet. 23–24, (discussing Fumarolo's display-based terminal in the context of displaying a map and communicating with communication units), 26–30 (discussing Fumarolo's display-based terminal in the context of facilitating IP-based communications and SMS messages with the communication units), 35–38 (discussing Fumarolo's display-based terminal in the context of an interactive graphical user interface (GUI) for display locations of the communication units), and 38–39 (discussing Fumarolo's display-based terminal in the context of identifying interactions with the interactive GUI).

Petitioner also discusses, with respect to limitation 1.4, Fumarolo's remote terminal in the context of incorporating the communication features of Sheha and Lazaridis. For example, Petitioner argues, "limitations 1.4, 28.4, 41.4, which require the transmission of the location of the first device using IP-based messages relies on Sheha and Lazaridis." *Id.* at 7. The Petition explains, "one drawback of a dispatcher (such as in Fumarolo) is that there is typically 'only one-way transfer of position information, from the mobile vehicle to the dispatcher application [because] [u]sually there is no need to transfer the dispatcher's location to the mobile vehicle since the dispatcher's location is always stationary.'" Pet. 34. In a similar teaching, Petitioner argues, Fumarolo provides that the display-based terminal may be

implemented as a remote terminal. Reply at 8 (citing Ex. 1005, 4:66–5:3). It is this implementation, Petitioner argues, that serves as part of the motivation for incorporating Sheha and Lazaridis’s teachings into Fumarolo’s system, by substituting Fumarolo’s display-based terminal with Sheha’s wireless phone and thereby enabling two-way communications between Fumarolo’s modified display-based terminal and the communication units. *Id.* (citing Pet. 35). When Fumarolo’s display-based terminal is implemented as a wireless phone, Petitioner asserts, the Petition further explains it would have been obvious to incorporate Lazaridis’s IP-based messages in order to transmit location information. *Id.* (citing Pet. 34).

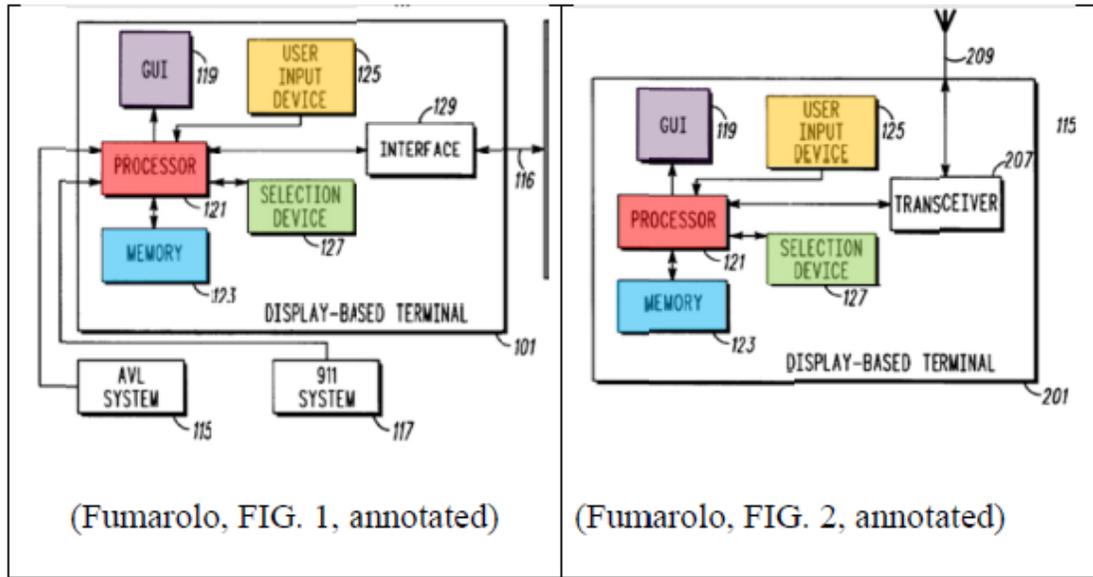
We also find unavailing Patent Owner’s argument that Petitioner’s expert, Mr. Williams, “confirmed that the “display-based terminal” alone cannot meet the claim limitations and that the Petition alleges that Fumarolo’s “‘remote terminal’ meets the claimed *first device*.” PO Resp. 15 (citing Ex. 2009, 109:9–19). We find persuasive Petitioner’s assertion that Mr. Williams’ testimony from his deposition, i.e., that the display-based terminal being implemented as a remote terminal is “what is being regarded as the first device,” refers to the limitation of the first device as the basis for combining with Sheha and Lazaridis. Reply 8 (citing Ex. 1044 ¶¶ 10–14). Indeed, as Petitioner points out, Mr. Williams’ initial declaration provided the reasons for combining Fumarolo and Sheha: “[a]lthough Fumarolo discloses the use of a ‘display-based terminal 201 [that] is a remote terminal’ . . . Fumarolo does not explicitly describe the display-based terminal as a handheld device or wireless phone.” *Id.* at 8–9 (citing Ex. 1003 ¶ 59). Petitioner points out further that Mr. Williams goes on to explain, “that it would have been obvious to have implemented Fumarolo’s display-based

terminal and communication units as mobile devices based on Sheha.” *Id.* at 9 (citing Ex. 1003 ¶ 61).

For the foregoing reasons, we find Patent Owner’s arguments unavailing that the Petition improperly relies on two distinctly different embodiments from Fumarolo as the first device.

We also find unavailing Patent Owner’s assertion that Fumarolo discloses a distinctly different display-based terminal and remote terminal that are not interchangeable. Petitioner argues persuasively that the Petition relies on the overlapping components and functions of Fumarolo’s display-based terminal that are shared with the remote terminal. *Id.* Petitioner points out that Fumarolo uses the same terminology to describe both embodiments — display-based terminal 101 and display-based terminal 201 (remote terminal). *Id.* at 9. The primary distinction between these two embodiments, Petitioner argues, appears to be that “the display-based terminal 201 is a remote terminal . . . that is ***not coupled directly*** to the AVL system 115 and the 911 system 117.” *Id.* (citing Ex. 1005, 4:66–5:3).

Petitioner argues, and we agree, display-based terminal 101 and display-based (remote) terminal 201 share nearly all the same components. *Id.* at 9–10. Fumarolo’s Figures 1 and 2, annotated by Petitioner, are shown below.



Reply 10.

Fumarolo’s Figures 1 and 2, annotated by Petitioner, above, show the similarity of components in display-based terminal 101 and display-based (remote) terminal 201. *Id.* at 10. Petitioner argues, and as is apparent in the Figures, the only difference between the two terminals is that the display-based (remote) terminal 201 includes transceiver 207 whereas display-based terminal 101 includes interface 129. *Id.* Petitioner points out that Fumarolo explains interface 129 may be implemented using a wireless connection. *Id.* (citing Ex. 1005, 4:33–36). Thus, we find persuasive Petitioner’s argument that the only distinction between the terminals is that display-based (remote) terminal 201 is not directly connected (wired) to AVL system 115 and 911 system 117. *Id.*

Moreover, Petitioner argues, Fumarolo explicitly explains that these terminals perform the same functions with respect to communications: “the terminal 201 can remotely monitor and control communications among the communication units 105-113 in a manner similar to terminal 101 through exchanges of information with the wireless infrastructure 203 over the RF

channel 205.” *Id.* at 11 (citing Ex. 1005, 5:17–21). Therefore, we find persuasive Petitioner’s argument that Fumarolo’s description of the functions of a display-based terminal applies equally to display-based terminal 101 and display-based (remote) terminal 201. *Id.* (citing Ex. 1044 ¶¶ 4–9).

Patent Owner’s argument that a person of ordinary skill in the art would have viewed Fumarolo’s embodiments of its display-based terminal as separate and distinct embodiments that are not interchangeable, does not hold up under scrutiny.

As Mr. Williams testifies, the primary distinction between Fumarolo’s display-based terminal 101 and the display-based (remote) terminal 201 is that “the display-based terminal 201 is a remote terminal . . . that is *not coupled directly* to the AVL system 115 and the 911 system 117.” Ex. 1044 ¶ 6 (citing Ex. 1005, 4:66–5:3 (emphasis added)). Aside from this indirect connection to AVL system 115 and 911 system 117, Mr. Williams testifies, Fumarolo teaches that display-based (remote) terminal 201 is otherwise equivalent, both in components and functionality, to display-based terminal 101. *Id.* Indeed, Fumarolo states, “terminal 201 receives communication unit location updates from the AVL system 115 . . . [and] can remotely monitor and control communications among the communication units 105-113 *in a manner similar to terminal 101* through exchanges of information with the wireless infrastructure 203 over the RF channel 205.” Ex. 1005, 5:13–21 (emphasis added). Given Fumarolo’s teachings, Mr. Williams testifies that a person of ordinary skill in the art would have viewed Fumarolo’s display-based terminal, including the shared components and the monitoring and controlling of communications among the communication units 105-113, as being equally applicable to display-based terminal 101 and

display-based (remote) terminal 201. Ex. 1044 ¶ 9.

Patent Owner's argument that Mr. Williams, "confirmed that the 'display-based terminal' alone cannot meet the claim limitations" is equally unavailing. *See* PO Resp. 15. As Mr. Williams explains,

[w]ith regard to combining Lazaridis and Fumarolo, I explained [in my initial declaration] that "a POSA would have recognized the benefit of implementing [Lazaridis's] exchange of identification information between Fumarolo's display-based terminal and the mobile communication units" based on Fumarolo's remote terminal embodiment. Ex. 1003, ¶ 70. As with Sheha, Fumarolo's remote terminal served as the basis for incorporating Lazaridis's teachings because a remote terminal, in contrast to a terminal in a fixed location, would benefit from transmitting its location to other mobile communication units.

\* \* \*

During the deposition, I was asked whether I was "mapping the display-based terminal to the first device recited in Claim Nos. 1, 28, and 41." Ex. 2009, 109:9-11. I responded by stating that "[t]he fact that the display-based terminal can be implemented as a remote terminal, that's what is being regarded as the first device." Ex. 2009, 109:12-14. In either embodiment, it is the display-based terminal that teaches the claimed first device.

Ex. 1044 ¶¶ 12, 13.

As Mr. Williams makes clear, it is Fumarolo's teaching of a display-based terminal, as either a fixed (101) or a remote (201) terminal, that serves as the basis for Petitioner's proposed combination of Fumarolo and Lazaridis, "because a remote terminal, in contrast to a terminal in a fixed location, would benefit from transmitting its location to other mobile communication units." Ex. 1044 ¶ 12.

For the foregoing reasons, Patent Owner's argument that Fumarolo's display-based terminal and remote terminal represent distinct embodiments that are not interchangeable does not undermine Petitioner's showing.

Patent Owner also argues, "Petitioner alleges that Fumarolo's 'remote terminal,' in combination with Sheha's or Lazaridis' mobile phones, corresponds to the 'first device.'" PO Resp. 17 (citing Pet. 21; Ex. 2009, 109:9–19). According to Patent Owner, Petitioner fails to provide sufficient analysis to support this allegation. *Id.* (citing Pet. 21, 23). Patent Owner argues the alleged motivation to combine argued by Petitioner and Mr. Williams is based on treating inconsistently Fumarolo's "communications units 105–113" as being the same as Fumarolo's "remote terminal." *Id.* at 19–28.

We disagree with Patent Owner's assertion, namely that Petitioner alleges Fumarolo's "remote terminal," in combination with Sheha's or Lazaridis's mobile phone, corresponds to the "first device." Patent Owner relies on pages 21 and 23 of the Petition, *id.* at 17–18, which nowhere state Fumarolo's "remote terminal" is being combined with Sheha's or Lazaridis's mobile phones to arrive at the claimed "first device." The Petition explicitly asserts Fumarolo's *display-based terminal* "reads on the 'first device.'" Pet. 22. The Petition separately asserts that Sheha and Lazaridis each disclose mobile devices that "read on the preamble's recitation of 'first device.'" *Id.* at 23. There is no discussion of combining the devices. *Id.* at 22–23. Patent Owner also relies on page 21 of the Petition, but that page only discusses the priority dates of the prior art references and statutory sections under which Petitioner asserts the references qualify as prior art. *Id.* at 21. Because Patent Owner does not identify any assertion in the Petition that the combination of Fumarolo's

IPR2018-01080

Patent 9,408,055 B2

remote terminal with Sheha's or Lazaridis's mobile phone correspond to a "first device," we find Patent Owner's arguments unavailing.

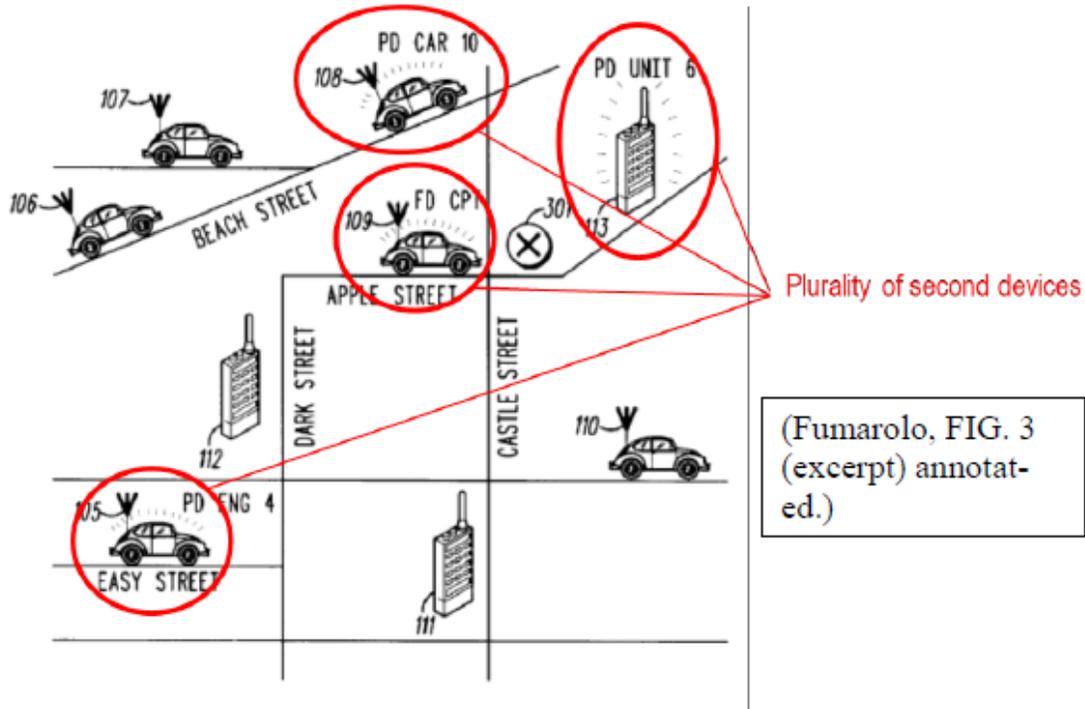
Moreover, we find insufficient basis for Patent Owner's assertion that the alleged motivation to combine argued by Petitioner and Mr. Williams is based on inconsistently treating Fumarolo's "communications units 105–113" as being the same as Fumarolo's "remote terminal." *Id.* at 19 (citing Ex. 2007 ¶¶ 32–37). Patent Owner does not cite to or identify, nor do we discern, where any such argument is made in the Petition or declaration of Mr. Williams. Patent Owner instead cites to the declaration of its expert, Dr. Carbonell. *Id.* at 19 (citing Ex. 2007 ¶¶ 32–37). The cited testimony of Dr. Carbonell does not include any explanation for the basis of the assertion that Petitioner or Mr. Williams treats Fumarolo's communication units as being the same as a remote terminal. Ex. 2007 ¶¶ 32–37. The only citation to the Petition in Dr. Carbonell's referenced testimony is to page 9, discussing a motivation to combine Fumarolo's communication units with devices in Sheha or Lazaridis. Dr. Carbonell, in this context, does not assert, much less identify how, Petitioner treats Fumarolo's communication units as being the same as a remote terminal.

For the foregoing reasons, Petitioner has persuasively shown the combination of Fumarolo and Sheha teaches or suggests the preamble of claim 1.

[1.1] obtaining contact information of a plurality of second devices, wherein the contact information comprises respective telephone numbers of the second devices; (see also [28.1], [41.1], [54.1])

Petitioner asserts Fumarolo teaches the claimed function of obtaining contact information, while Sheha teaches the claimed “telephone number” limitation. Pet. 23 (citing Ex. 1003 ¶¶ 75–84).

Petitioner argues the recited “*plurality of second devices*” maps to Fumarolo’s “communication units,” as shown in annotated Figure 3 below. *Id.* at 24.



Fumarolo’s Figure 3, annotated by Petitioner shown above, depicts a distribution of Fumarolo’s “communication units.” *Id.* Petitioner argues each communication unit in Fumarolo is associated with an “individual identification.” *Id.* at 23 (citing Ex. 1005, 9:64–65, 14:11–16, 9:48–49; Ex. 1003 ¶ 77). When needed, Petitioner argues, “individual identification is

obtained from memory of the display-based terminal.” *Id.* at 24 (citing Ex. 1005, 9:29–35, 9:44–49, 14:11–19).

Petitioner argues Fumarolo teaches “obtaining contact information of a plurality of second devices,” because Fumarolo’s display-based terminal displays “a map to the terminal user indicating locations of communication units in at least a portion of a communication system.” *Id.* at 23 (citing Ex. 1005, 12:58–62).

Petitioner asserts Fumarolo’s “individual identification” is an example of the recited “*contact information*,” because it is used by the display-based terminal 101 (the “*first device*”) to contact the communication units 105–113 (the “*plurality of second devices*”). *Id.* at 23–24 (citing Ex. 1005, 8:53–9:6, 9:29–35; Ex. 1003 ¶ 77). Petitioner argues that to the extent Fumarolo “is determined not to explicitly disclose the claimed ‘*respective telephone numbers*,’ Sheha discloses this limitation.” *Id.* at 25.

Petitioner argues, “Sheha discloses a method for displaying locations of communication devices (e.g., phones and vehicles) on a map of a display device.” *Id.* at 25 (citing Ex. 1006 ¶¶ 19, 22, 84, Fig. 2). Petitioner argues Sheha’s map is interactive, allowing displayed objects to be selected. *Id.* (citing Ex. 1006 ¶¶ 25, 27). Petitioner also argues Sheha’s displayed objects are associated with unique identifiers such as a telephone number. *Id.* (citing Ex. 1006 ¶¶ 99, 22; Ex. 1003 ¶ 80). Petitioner argues, “Sheha therefore discloses communication units having ‘*respective telephone numbers*.’” *Id.* (citing Ex. 1003 ¶ 81). Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to this limitation. *See* PO Resp. 10–34.

Petitioner has persuasively shown the combination of Fumarolo and Sheha teaches or suggests limitation 1.1 because Fumarolo teaches a

IPR2018-01080

Patent 9,408,055 B2

display-based terminal (a “first device”) displaying a map to the terminal user indicating locations (“obtaining contact information”) of communication units (a “plurality of second devices”), and Sheha teaches a method for displaying locations of communication devices on a map of a display device where the display objects are associated with unique identifiers such as a telephone number (“wherein the contact information comprises respective telephone numbers”).

*[1.2] facilitating initiation of Internet Protocol (IP) based communication between the first device and the respective second devices by using respective telephone numbers to send, from the first device to the second devices, respective Short Message Service (SMS) messages including a telephone number of the first device and information usable b[y] the respective second device to send IP-based communication to the first device; (see also [28.2], [41.2], [54.2])*

Petitioner argues the combination of Fumarolo, Sheha, and Lazaridis teaches this limitation. Pet. 26 (citing Ex. 1003 ¶¶ 85–95). Petitioner argues Fumarolo and Sheha teach the facilitating initiation functionality while Lazaridis teaches IP-based communication and SMS message functionality. *Id.*

Petitioner argues the combination of Fumarolo and Sheha teaches or suggests “*facilitating initiation of . . . communication between the first device and the respective second devices*” by using respective individual identification of each communication unit (i.e., “*respective second devices*”). *Id.* (citing Ex. 1005, 6:12–19, 6:25–28, 9:29–35; Ex. 1003 ¶ 86). Petitioner argues it would have been obvious to a person of ordinary skill in the art “to incorporate Sheha’s mobile telephones and their respective telephone

numbers into Fumarolo’s interactive mapping system.” *Id.* at 26–27.

Petitioner argues Fumarolo initiates communication between a first device and respective second devices, and this communication can be “a data communication.” *Id.* at 27 (citing Ex. 1005, Fig. 3, 305, 5:58–65, 1:64–2:3, 14:2–6). Petitioner argues

to the extent the combination of Fumarolo and Sheha is determined not to disclose facilitating (1) “*Internet Protocol (IP) based communication*” (2) “*by using respective telephone numbers to send, from the first device to the second devices, respective Short Message Service (SMS) messages including a telephone number of the first device and information usable b[y] the respective second device to send IP-based communication to the first device,*” Lazaridis discloses these features.

*Id.*

Petitioner argues Lazaridis teaches or suggests “allowing mobile stations to exchange identification information using a predetermined communication path for the purpose of obtaining identification information to use in establishing a different communication path for communicating.” *Id.* (citing Ex. 1007, Abs.). Petitioner explains that Lazaridis achieves this objective by “exchanging mobile station identification information through an SMS service.” *Id.* (citing Ex. 1007 ¶¶ 29, 34). Lazaridis, Petitioner argues, also explains that these mobile stations, when implemented as mobile telephones (Ex. 1007 ¶ 4), would be involved in communications such as “incoming and outgoing telephone calls [and] incoming and outgoing SMS messages” (Ex. 1007 ¶ 42). *Id.* at 27–28.

Petitioner argues a person of ordinary skill in the art “would have understood that SMS messages use telephone numbers to identify mobile devices to and from which the SMS messages are sent or received.” *Id.* at

IPR2018-01080

Patent 9,408,055 B2

28 (citing Ex. 1003 ¶¶ 88–89). Petitioner also argues a person of ordinary skill in the art “would have understood that SMS messages include telephone numbers of both the transmitting and receiving mobile devices as a means of identification.” *Id.* (citing Ex. 1003 ¶ 89).

Petitioner argues an SMS message (e.g., Lazaridis’ SMS message 310) from a transmitting device (e.g., Lazaridis’ first mobile station 300) includes the Internet Protocol (IP) address of that device. *Id.* (citing Ex. 1007 ¶¶ 31, 33–34, 42). Petitioner argues the receiving device (e.g., Lazaridis’ second mobile station 301) that receives the SMS message uses the IP address of the transmitting device to establish communications with and send data to the transmitting device. *Id.* (citing Ex. 1007 ¶¶ 32, 34). Because the receiving device uses the IP address to send data to the transmitting device, Petitioner argues, the IP address of the transmitting device is “*information usable by the respective second device to send IP-based communication to the first device.*” *Id.* (citing Ex. 1003 ¶ 90).

Petitioner argues Lazaridis further teaches transmitting SMS messages that include updated IP address information to a plurality of mobile stations. *Id.* at 29 (citing Ex. 1007, Fig. 7, ¶ 47). Petitioner argues a person of ordinary skill in the art “would have understood Lazaridis describes SMS messages that include telephone numbers identifying a device sending the SMS messages and a device receiving the SMS messages.” *Id.* (citing Ex. 1003 ¶ 91). Petitioner argues a person of ordinary skill in the art “would have also understood that the SMS messages include IP-address information that is usable by the devices to send IP-based communications.” *Id.* (citing Ex. 1003 ¶ 92).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to this limitation. *See* PO Resp. 10–34.

Petitioner has persuasively shown the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests limitation 1.2 because incorporating Sheha's mobile telephones and their "respective telephone numbers" into Fumarolo's interactive mapping system shows "facilitating initiation of . . . communication between the first device and the respective second devices" by using individual identification of each communication unit ("respective second devices"). Lazaridis exchanges mobile station identification information through an SMS service, and when implemented as mobile telephones, incoming and outgoing SMS messages. Lazaridis' SMS message 310 sent from Lazaridis' mobile station 300 (the "first device") would include its Internet Protocol (IP) address ("information usable by the respective second device"). Lazaridis' receiving mobile station 301 (the "second device") uses the IP address to establish communications with the transmitting device ("to send IP-based communication to the first device").

*[1.3] receiving respective IP-based responses to the SMS messages, wherein the IP-based responses to the SMS messages include location information of the respective second devices; (see also [28.3], [41.3], [54.3])*

For this limitation, Petitioner argues the combination of either Fumarolo and Lazaridis or Sheha and Lazaridis teaches the limitation. Pet. 31 (citing Ex. 1003 ¶¶ 96–102). Petitioner argues either Fumarolo or Sheha teaches the location-information functionality, and Lazaridis teaches the IP-based response functionality. *Id.* Petitioner argues Fumarolo teaches the display-based terminal obtaining location information from Fumarolo's communication units (i.e., respective second devices) to display the location of each communication unit on a map. *Id.* (citing Ex. 1005, 12:58–62, 13:1–

10). Similarly, Petitioner argues, Sheha teaches obtaining location information of its respective second devices, including “position information from various positioning devices, such as a GPS device.” *Id.* (citing Ex. 1006 ¶ 20). The combination of Fumarolo and Sheha, Petitioner argues, describes obtaining location information from respective second devices. *Id.* To the extent the combination is determined not to explicitly disclose providing this information in “IP-based responses to . . . SMS messages,” Petitioner argues Lazaridis teaches this feature. *Id.* (citing Ex. 1003 ¶ 97).

Petitioner argues Lazaridis teaches a first mobile station (i.e., a first device) transmitting multiple SMS messages including the IP address of the first mobile station to second mobile stations (i.e., the respective second devices). Pet. 31–32 (citing Ex. 1007 ¶¶ 29–32, 47, Fig. 7; Ex. 1003 ¶ 98). Lazaridis, Petitioner argues, explains that upon receipt of their respective SMS message, the second mobile stations are aware of the “current IP address” associated with the first mobile station and are able to send data to the first mobile station. *Id.* at 32 (citing Ex. 1007 ¶ 32). In response to these SMS messages, and based on their awareness of the “current IP address” of the first mobile station, Petitioner argues the second mobile stations in Lazaridis transmit IP-based messages to the first mobile station. *Id.* (citing Ex. 1007 ¶¶ 32, 34; Ex. 1003 ¶ 99). Petitioner argues these IP-based messages are responses to the SMS messages received from the first mobile station because they use the IP address information contained within the SMS messages. *Id.* (Ex. 1003 ¶ 99).

Petitioner argues Lazaridis also teaches that these IP-based messages “include location information of the respective second devices.” Pet. 32 (quoting Ex. 1007, claims 78, 84, 85; *see also id.* ¶¶ 23–24, 34, 42). Lazaridis, Petitioner argues, explains that the IP-based messages convey

IPR2018-01080

Patent 9,408,055 B2

data, such as location information, between devices more efficiently and quickly than other messaging methods, such as SMS. *Id.* (citing Ex. 1007 ¶¶ 26, 32).

Petitioner argues it would have been obvious to a person of ordinary skill in the art to incorporate Lazaridis' IP-based message into Fumarolo's communication system as modified by Sheha. *Id.* (citing Ex. 1003 ¶ 101). In particular, Petitioner argues, it would have been obvious to a person of ordinary skill in the art to modify Fumarolo to use Lazaridis' IP-based message to provide location information (e.g., GPS) associated with the second devices to Fumarolo's display-based terminal. *Id.* at 32–33 (citing Ex. 1003 ¶ 102).

Patent Owner argues Lazaridis does not disclose an IP-based response to an SMS message. PO Resp. 30 (citing Ex. 200[7] ¶ 41). Patent Owner argues, "Lazaridis discloses one 'email service' embodiment for sending an IP address over an email service (Ex. 1007 ¶ 22) and an alternative 'SMS service' embodiment for sending an IP address over SMS." *Id.* (citing Ex. 1007 ¶ 29). Patent Owner further argues, "neither Lazaridis' 'email service,' nor its 'SMS service,' teach an IP-based response because email messages and SMS messages are not the same as IP-based responses, much less any form of IP-based communication." *Id.* An SMS message or email message, Patent Owner argues, "does not teach an IP-based response to an SMS message, as SMS and email communication does not require use of the Internet or any Internet protocols." *Id.* (citing Ex. 200[7] ¶ 41).

Patent Owner also argues Lazaridis does not "teach or suggest anything more than updating an IP address via an update message that is neither an IP-based message nor a response to an SMS message." *Id.* at 31. In fact, Patent Owner argues, Lazaridis "suggests that the IP address

message is transmitted in response to a software-automated detection of a change in stored addresses rather than in response to an *IP-based message*, as required by the claims.” *Id.* (citing Ex. 200[7] ¶ 42).

Patent Owner argues Mr. Williams confirmed that the portions of Lazaridis concerning e-mail service do not teach or suggest the SMS limitations. *Id.* at 32 (citing Ex. 2009, 135:3–10. Patent Owner argues Mr. Williams also confirmed that in each embodiment relied on for Lazaridis, including the SMS service embodiment, there is no response that includes the location information from the second device to the first device. *Id.* (citing Ex. 2009, 139:16–23, 140:18–22, 146:5–18). Accordingly, Patent Owner argues, “Petitioner has not shown where Lazaridis discloses any of the elements in the claim limitation.” *Id.* at 33 (citing Ex. 200[7] ¶¶ 43–44).

Patent Owner further argues, “Petitioner provides no evidence to support any contention that Fumarolo’s display-based terminal receives any *response*, much less whether those *responses* are received from the second device.” *Id.* Patent Owner argues, “Petitioner relies on a section that is devoid of any discussion of *responses* transmitted from the second device (‘communication unit’) to the first device (‘remote terminal’).” *Id.* (citing Pet. 31). Instead, Patent Owner argues, “the cited portion of Fumarolo describes indicating and determining locations without describing any format or protocol for that location data.” *Id.* (citing Ex. 200[7] ¶ 45). Petitioner and Mr. Williams, Patent Owner argues, “do not explain how the location data constitutes a *response* or how the AVL system is the *second device*.” *Id.* In fact, Patent Owner argues, “Petitioner modifies the claim limitation to require the lesser “obtaining information of its respective second devices” (Pet. 31) and submits that Sheha’s “position information” (not *response*) are obtained from Sheha’s “various positioning devices, such

as a GPS device” (not from the *second device*). *Id.* at 33–34.

Petitioner replies to Patent Owner’s arguments by noting Lazaridis describes, “the current IP address of the mobile station 300 is sent in an SMS message 310 which is addressed to the second mobile station 301.” Reply 16 (citing Ex. 1007 ¶ 31). “Once the second mobile station has received an SMS message 310 . . . the current IP address associated with the first mobile station 300 is known to the second mobile station 301, which can send data to the first mobile station 300.” *Id.* at 16–17 (citing Ex. 1007 ¶ 32). The “data” that is transmitted after the second mobile station has the IP address of the first mobile station is the IP-based response relied on by the Petition. *Id.* at 17 (citing Pet. 32; Ex. 1003 ¶ 99).

Petitioner explains that “[a]lthough Lazaridis does not explicitly state that the “data to the first mobile station 300” is transmitted using the “current IP address associated with the first mobile station 300,” a common-sense reading of this sentence is that the data transmitted to the first mobile device uses the “current IP address” that is known to the second mobile station.” *Id.* (citing Ex. 1044 ¶ 26).

Petitioner also clarifies that to the extent there is any reliance in the Petition on these Lazaridis’s “email service,” “SMS service,” and “IP address service,” it is to teach the functionality of an IP address. *Id.* at 19. Petitioner explains that “[t]he different embodiments merely relate to the mechanism for exchanging the IP address between devices. But each embodiment uses the address in the conventional manner for communicating between devices over a network.” *Id.* at 19–20 (citing Ex. 1007 ¶¶ 22, 29, 33, 35) (describing the exchange of “mobile station identification information” using different services). In other words, Petitioner argues, “the IP address is used in the same conventional manner across each of these

embodiments.” *Id.* at 20 (citing Ex. 1044 ¶¶ 27–29).

We agree with Petitioner. Patent Owner’s arguments attempt to isolate the prior art references and criticize them individually for not teaching aspects of the claimed limitation rather than considering the prior art references for what they fairly teach someone of ordinary skill in the art as a whole. The test for obviousness is what the *combined* teachings of the references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). It is not availing to attack references individually where, as here, Petitioner’s obviousness position is based on a combination of references. Each reference relied on by the Petitioner in its obviousness position must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole. *See In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Here, Petitioner relies on the *combined* teachings of Fumarolo and Lazaridis or Sheha and Lazaridis to teach this limitation. *See* Pet 31 (citing Ex. 1003 ¶¶ 96–102). As to Patent Owner’s argument that Lazaridis does not teach an IP-based response to an SMS message, Lazaridis clearly explains, “the current IP address of the mobile station 300 is sent in an SMS message 310 which is addressed to the second mobile station 301.”

Ex. 1007 ¶ 31. “Once the second mobile station has received an SMS message 310 . . . the current IP address associated with the first mobile station 300 is known to the second mobile station 301, which can send data to the first mobile station 300.” Ex. 1007 ¶ 32. As Mr. Williams testifies, “[i]n response to these SMS messages and based on their awareness of the ‘current IP address’ of the first mobile station, the second mobile stations transmit IP-based messages to the first mobile station.” Ex. 1003 ¶ 99 (citing Ex. 1007 ¶¶ 32, 34). “These IP-based messages are responses to the

SMS messages received from the first mobile station because they utilize the IP address information contained within the SMS messages.” *Id.* “It is this ‘data’ that is sent from the second devices to the first mobile station and after the second devices receive the IP address of the first mobile station that teaches or suggests the claimed IP-based response.” Ex. 1044 ¶ 25.

With respect to Patent Owner’s argument that Lazaridis does not teach a response that includes the location information from the second device to the first device, Patent Owner again does not consider the combined teachings of the prior art references. Petitioner relies on Fumarolo’s teaching of a display-based terminal (“first device”) obtaining location information from Fumarolo’s communication units (“second devices”). Pet. 31 (citing Ex. 1005, 12:58–62, 13:1–10) (Explaining how “the terminal may determine such locations from the communication units themselves.”). Petitioner also relies on Sheha’s teaching of obtaining location information of its respective second devices, including “position information from various positioning devices, such as a GPS device.” *Id.* (citing Ex. 1006, ¶ 20; *see also* Ex. 1003 ¶ 99). Petitioner also relies on Lazaridis’ teaching of IP-based responses to SMS messages including location information. *Id.* at 31–32 (citing e.g. Ex. 1007, claims 78, 84, 84).

With respect to Patent Owner’s argument that Petitioner provides no evidence that Fumarolo’s display-based terminal receives any response from a second device, Patent Owner again ignores the combined teachings of the prior art relied on by Petitioner for this limitation. Pet. 31 (citing Ex. 1003 ¶¶ 96–102). Petitioner relies on Lazaridis to teach IP-based responses to SMS messages. *See* Ex. 1003 ¶ 97. As noted above, Lazaridis teaches a second mobile station 301, which can send data to a first mobile station 300. *See* Ex. 1007 ¶ 32. As previously noted, Mr. Williams testifies, “[i]n

response to these SMS messages and based on their awareness of the ‘current IP address’ of the first mobile station, the second mobile stations transmit IP-based messages to the first mobile station.” Ex. 1003 ¶ 99 (citing Ex. 1007 ¶¶ 32, 34). “These IP-based messages,” Mr. Williams testifies, “are responses to the SMS messages received from the first mobile station because they utilize the IP address information contained within the SMS messages.” *Id.*

For these reasons, Petitioner has persuasively shown the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests limitation 1.3.

*[1.4] transmitting IP-based messages including a location of the first device to the respective second devices (see also [28.4], [41.4], [54.4]);*

Petitioner asserts the combination of Sheha and Lazaridis teaches this limitation. Pet. 33 (citing Ex. 1003 ¶¶ 103–108). Petitioner asserts Sheha teaches exchanging location information between first and second devices and Lazaridis teaches doing so using IP-based messages. *Id.*

Petitioner argues Sheha teaches mobile devices providing location updates to other devices in the communication system. *Id.* (citing Ex. 1006 ¶¶ 7, 29). These location updates, Petitioner argues, include location information about the sending device, allowing the receiving device to display the sending device’s location on a map. *Id.* (citing Ex. 1006 ¶ 29).

Petitioner argues Lazaridis teaches that after second mobile stations (i.e., respective second devices) provide their identification to the first mobile station (i.e., first device), “the current IP address associated with the second mobile station 301 is known to the first mobile station 300, which can send data to the second station 301.” *Id.* (citing Ex. 1007 ¶ 32).

Petitioner argues Lazaridis teaches that the first mobile station can

communicate with more than one mobile station. *Id.* (citing Ex. 1006 ¶ 28). The data sent by the first mobile station 300, Petitioner argues, are IP-based messages because they are addressed to the “current IP address” of each second mobile station. *Id.* at 33–34 (citing Ex. 1006 ¶¶ 28, 32, claims 1, 26; Ex. 1003 ¶ 105). Petitioner also argues Lazaridis teaches that the message from first mobile station 300 includes location information of the first mobile station 300. *Id.* at 34 (citing Ex. 1006 ¶ 23, claims 1, 30).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to this limitation. See PO Resp. 10–34.

Petitioner has persuasively shown the combination of Sheha and Lazaridis teaches or suggests limitation 1.2 because Sheha teaches mobile devices providing location updates to other devices in the communication system. These location updates include location information about the sending device. In Lazaridis, the data sent by the first mobile station 300 are IP-based messages because they are addressed to the current IP address of each second mobile station. The message from first mobile station 300 includes the location information of the station.

*[54.5] transmitting an IP-based text message to at least one of the second devices via a cellular communications network;*

Independent claim 54 is substantially similar to independent claim 1, but recites an additional limitation: “transmitting an IP-based text message to at least one of the second devices via a cellular communications network.” With regard to the “cellular communications network,” Petitioner argues Fumarolo specifies that the display-based terminal communicates with the communication units via a wireless infrastructure that can include base stations. Pet. 46 (citing Ex. 1005, 4:10–15). Petitioner argues a person of

ordinary skill in the art would have understood that Fumarolo's base stations suggest the implementation of a cellular network within Fumarolo's system. *Id.* (citing Ex. 1003 ¶ 132).

Petitioner argues Lazaridis would have also suggested to a person of ordinary skill in the art implementing Fumarolo's network as a cellular network. *Id.* Petitioner argues Lazaridis teaches that a first mobile station 300 (i.e., a first device) transmits data to a second mobile station 301 after these stations exchange IP addresses. *Id.* (citing Ex. 1007 ¶¶ 32, 34). Once aware of each other's IP addresses, Petitioner argues, "the two mobile stations 300, 301 are thus able to communicate directly using a communication link 312 that only uses wireless network 304 resources." *Id.* (citing Ex. 1007 ¶ 32). Because first mobile station 300 transmits data using the IP address of second mobile station 301, Petitioner argues, this data is in the form of IP-based messages. *Id.* (citing Ex. 1003 ¶ 133). Petitioner argues these IP-based messages include IP-based text messages. *Id.* (citing Ex. 1007 ¶¶ 32, 66; Ex. 1003 ¶ 133).

Petitioner concedes Lazaridis does not explicitly teach that wireless network 304 is a cellular communications network, but, in a separate embodiment, Petitioner argues, Lazaridis describes wireless network 104 as "a network such as GSM/GPRS, CMANV-CDMA, EDGE, UMTS." *Id.* at 47 (citing Ex. 1007 ¶ 19). Wireless network 304, Petitioner argues, is a cellular communications network for at least two reasons. First, GSM/GPRS CDMA, EDGE, and UMTS are all well-known implementations of cellular communications networks. *Id.* (citing Ex. 1003 ¶¶ 132, 134). Second, Petitioner argues, it would have been obvious to a person of ordinary skill in the art that wireless network 304 would be implemented in the same fashion as wireless network 104. *Id.* (citing Ex.

IPR2018-01080

Patent 9,408,055 B2

1003 ¶ 135). Petitioner argues Lazaridis teaches that mobile stations 300, 301 transmit SMS messages that are known in the art to be commonly transmitted over cellular communications networks, such as GSM/GPRS CDMA, and EDGE. *Id.* (citing Ex. 1007 ¶ 30; Ex. 1003 ¶ 135). Petitioner argues Lazaridis also uses common terminology to describe the elements of wireless networks 104 and 304; both networks are described as comprising first and second mobile stations and first and second wireless-network base stations. *Id.* (citing Ex. 1007 ¶¶ 18, 29; Ex. 1003 ¶ 136). Thus, Petitioner argues, Lazaridis' network 304 is a cellular-communications network. *Id.*

Petitioner also argues it would have been obvious to a person of ordinary skill in the art to implement Fumarolo's network as a cellular network based on Lazaridis' network 304. *Id.* Because Fumarolo uses base stations, Petitioner argues, incorporating Lazaridis' cellular network into Fumarolo's system would have been predictable to a person of ordinary skill in the art. *Id.* at 47–48 (citing Ex. 1003 ¶ 137).

Patent Owner does not respond specifically to Petitioner's evidence and arguments with respect to this limitation. See PO Resp. 10–34.

Petitioner has persuasively shown the combination of Fumarolo and Lazaridis teaches or suggests limitation 54.5, because Lazaridis suggests implementing Fumarolo's wireless network, which may include base stations, as a cellular network. Lazaridis has a first station 300 that transmits data to a second station 301 after these stations exchange IP addresses. The mobile stations are able to communicate directly using a communication link 312 that only uses wireless network 304 resources. Mobile stations 300, 301 transmit SMS messages, which are known to be transmitted over cellular communications networks, such as GSM/GPRS CDMA, and EDGE.

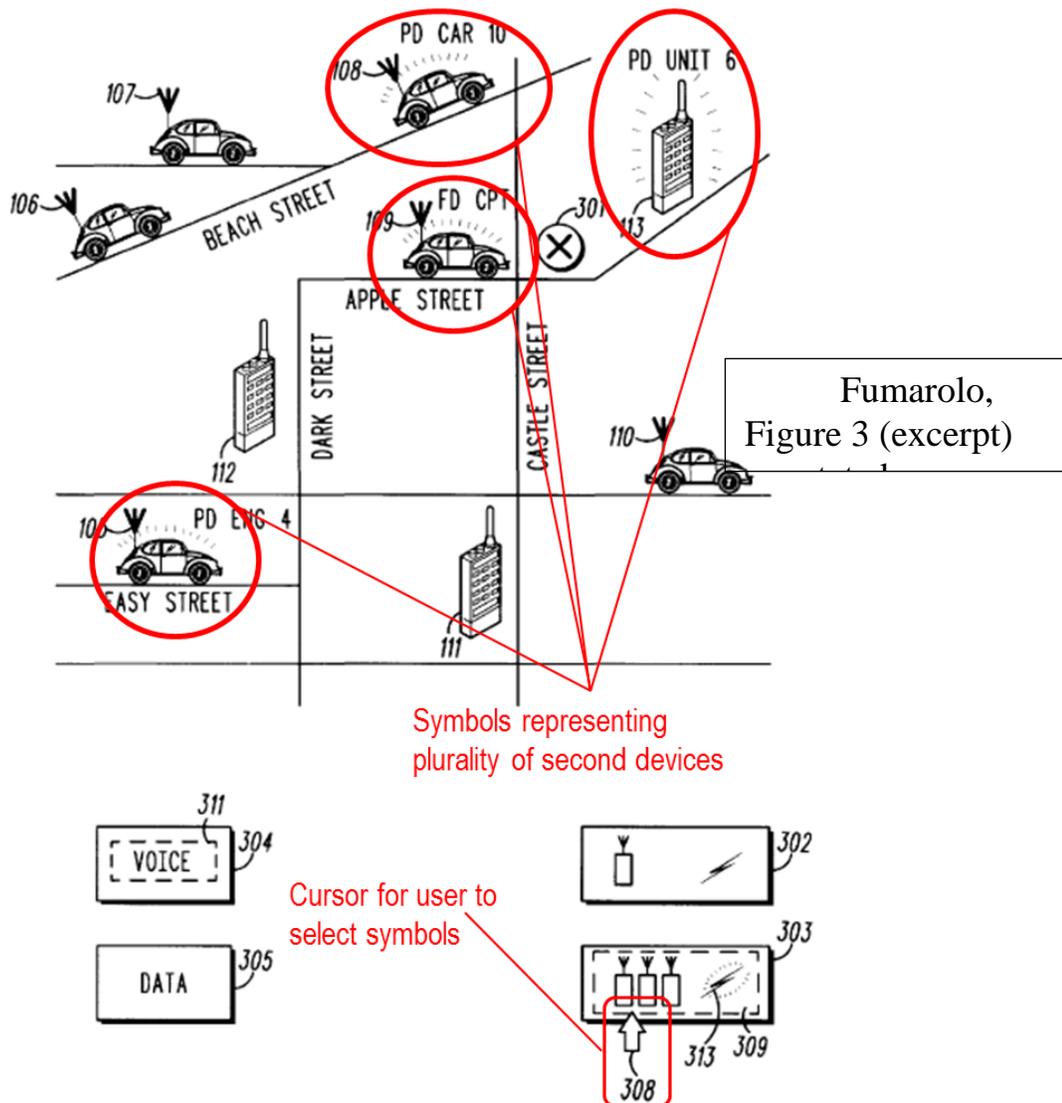
*[1.5] presenting, via an interactive display of the first device, an interactive map and a plurality of user selectable symbols corresponding to the plurality of second devices, wherein the symbols are positioned on the map at respective positions corresponding to the respective locations of the second devices; (see also [28.5], [41.5], [54.6])*

Petitioner asserts Fumarolo teaches this limitation. Pet. 35 (citing Ex. 1003 ¶¶ 109–111). According to Fumarolo, Petitioner asserts, the display-based terminal presents “a map to the user indicating locations of communication units in at least a portion of the communication system.” *Id.* (quoting Ex. 1005, 3:24–26). The displayed-based terminal, Petitioner asserts, “receives a selection from the map (e.g., through the use of a selection device, such as a mouse or a touchscreen).” *Id.* (quoting Ex. 1005, 3:26–28). Petitioner notes the display is GUI 119, which “presents the user of the terminal 101 with a map display of geographic locations of communication units 105–113,” and includes components that allow the user “to make selections from the displayed on the GUI 119.” *Id.* (quoting Ex. 1005, 4:39–43, 4:59–65). Petitioner asserts Fumarolo’s display-based terminal’s GUI 119 is an “interactive display.” *Id.* (citing Ex. 1003 ¶ 109).

Petitioner also asserts GUI 119 provides an “*interactive map and a plurality of user selectable symbols corresponding to the plurality of second devices.*” *Id.* at 36 (citing Ex. 1003 ¶¶ 110–111). The map presented by GUI 119, Petitioner asserts, indicates locations of communication units as shown in Fumarolo’s Figure 3 below, annotated by Petitioner. *Id.* (citing Ex. 1005, 3:24–26, 5:22–33, Figs. 3, 4). Petitioner asserts the locations of these communication units are shown as representations, or icons, of the communication units. *Id.* (citing Ex. 1005, 5:24–28, 6:19–24, 6:61–67,

16:26–31). These representations, Petitioner argues, are user selectable through a user’s interaction with the displayed map. *Id.* (citing Ex. 1005, 6:19–54, 8:16–34). Fumarolo’s representations, Petitioner argues, are therefore “user selectable symbols corresponding to the plurality of second devices.” *Id.* (citing Ex. 1003 ¶ 110).

Fumarolo’s Figure 3, annotated by Petitioner, is shown below.



Fumarolo’s Figure 3, shown above, is annotated by Petitioner to identify the map symbols representing a plurality of second devices and a

cursor for selecting the symbols.

Petitioner argues Fumarolo also teaches the claimed requirement that “the symbols are positioned on the map at respective positions corresponding to the respective locations of the second devices.” Pet. 37. According to Fumarolo, Petitioner argues, a user can view a map that “includes representation (e.g., icons) of communication units and indicates that the locations of the communication units in at least a portion of the communication system.” *Id.* (citing Ex. 1005, 16:26–31; *see also id.* at 5:24–28, Figs. 3, 4; Ex. 1003 ¶ 111). Fumarolo’s teaching of a “representation” or “icons,” Petitioner argues, reads on the claimed “symbols . . . positioned on the map.” *Id.* at 38 (citing Ex. 1003 ¶ 111).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to this limitation. See PO Resp. 10–34.

Petitioner has persuasively shown Fumarolo teaches or suggests limitation 1.5, because Fumarolo’s display-based terminal presents a map on display GUI 119 to the user indicating the geographic locations of communication units 105–113. The terminal receives a selection from the map (e.g., through the use of a selection device, such as a mouse or a touchscreen), that allows the user to make selections from the representations, or icons, of the communication units on the interactive display 119.

*[1.6] identifying user interaction with the interactive display selecting one or more of the user-selectable symbols corresponding to one or more of the second devices and user interaction with the display specifying an action and, based thereon, sending data to the one or more second devices; (see also [28.6], [41.6], [54.7])*

Petitioner asserts that Fumarolo teaches this limitation. Pet. 38. (citing Ex. 1003 ¶¶ 112–117). Petitioner asserts Fumarolo teaches that the display terminal “receives a selection from the map (e.g., through the use of a selection device such as a mouse or a touchscreen) of at least one communication unit and an indication of the user’s desire to communicate with the selected communication unit or units.” *Id.* (citing Ex. 1005, 3:24–31). Selection of the at least one communication unit, Petitioner asserts, includes a selection of the unit’s representation that is displayed on the map (*id.*, 6:12–54), which corresponds to the claimed “identifying user interaction with the interactive display selecting one or more of the user-selectable symbols corresponding to one or more of the second devices.” *Id.* (citing Ex. 1003 ¶ 112).

Petitioner asserts Fumarolo also teaches that the user can initiate communications (i.e., an action) with the selected communication unit. *Id.* (citing Ex. 1005, 6:12–39, 5:53–65; Ex. 1003 ¶ 113). The interaction with the map, Petitioner argues, includes selecting a representation of a communication unit that is displayed on the map or on a specific button displayed on the map. *Id.* at 38–39 (citing Ex. 1005, 3:31–39, 6:12–39). Thus, Petitioner argues, Fumarolo teaches “user interaction with the display specifying an action.” *Id.* at 39 (citing Ex. 1003 ¶¶ 113–115).

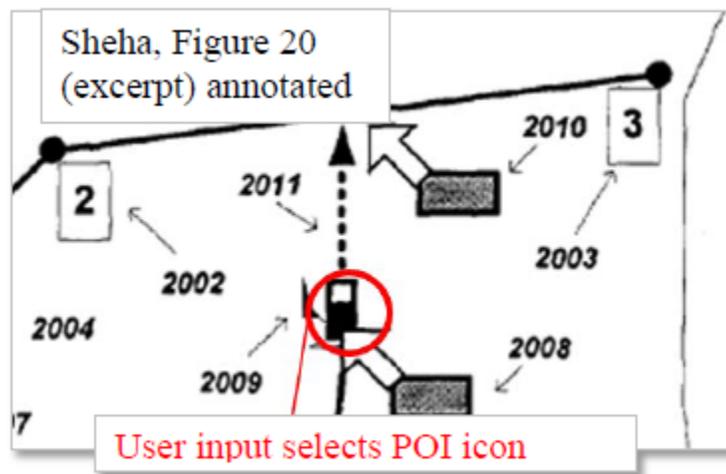
Fumarolo further teaches, Petitioner asserts, “based thereon, sending data to the one or more second devices.” *Id.* Petitioner asserts Fumarolo teaches that the terminal “automatically initiates a communication with the selected communication unit or units.” *Id.* (citing Ex. 1005, 3:39–43). The terminal, Petitioner argues, initiates voice communication “by sending control signals to the identified base station or base stations to allocate or key-up such station or stations for communications on transmit and receive carrier frequencies.” *Id.* (citing Ex. 1005, 10:17–22). These control signals, Petitioner argues, establish voice communications between the terminal and the selected communication unit or units (i.e., “*the one or more second devices*”). *Id.* (citing Ex. 1005, 11:20–26, 18:6–13; Ex. 1003 ¶¶ 116–117).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to this limitation. *See* PO Resp. 10–34.

Petitioner has persuasively shown Fumarolo teaches or suggests limitation 1.6, because the display terminal receives a selection (“user interaction”) from the map (“interactive display”) of at least one communication unit (“second device”) and an indication of the user’s desire (“specifying and action”) to communicate with the selected communication unit. The user may select (“selecting one or more”) a representation of a communication unit (“user-selectable symbols”) that is displayed on the map or on a specific button displayed on the map. The terminal initiates a communication with the selected communication unit, by sending control signals (“sending data”) to the identified station (“second device”).

[1.7] receiving user input via user interaction with the interactive display of the first device, the user input specifying a location and a symbol corresponding to an entity other than the first device and the second devices; and (see also [28.7], [41.7], [54.8])

Petitioner asserts that Sheha teaches this limitation. Pet. 39 (citing Ex. 1003 ¶¶ 118–125). Petitioner asserts Sheha teaches that a user can provide input via interaction with an interactive display, as illustrated in annotated Figure 20 (below). *Id.* (Ex. 1006 ¶ 118, Fig. 20). Petitioner relies on Sheha’s statement that “the user can drag 2011 the selected static POI 2009 to the pre-calculated route 2004 and add a new destination point to the pre-calculated route 2004 at the point 2015 where the POI icon was dropped by releasing the selected POI 2010, which is done, as known to people skilled in the art, by a mouse click release, tap release, etc.” *Id.* at 39–40 (citing Ex. 1006 ¶ 118). In other words, Petitioner argues, Sheha teaches that the user input specifies the location of Point of Interest (POI) 2009 and the symbol corresponding to POI 2009, which is an entity other than the first device and the second devices. *Id.* at 40 (citing Ex. 1003 ¶¶ 121–122). Sheha’s Figure 20, annotated by Petitioner, is shown below.



Sheha's Figure 20, above, is annotated by Petitioner to show user input selection of a POI icon. After the user drags POI 2009 to the pre-calculated route 2004, Petitioner asserts, a new symbol is displayed on another device based on the user input, as shown in annotated Figure 21 (below). *Id.* at 40–41 (citing Ex. 1006 ¶¶ 118, 25, Fig. 21). This new symbol, Petitioner argues, is “user-specified” because the user selected the icon for the POI 2009 that led to the placement of the dot on the map. *Id.* (citing Ex. 1003 ¶ 123). Sheha's Figure 21, annotated by Petitioner, is shown below.

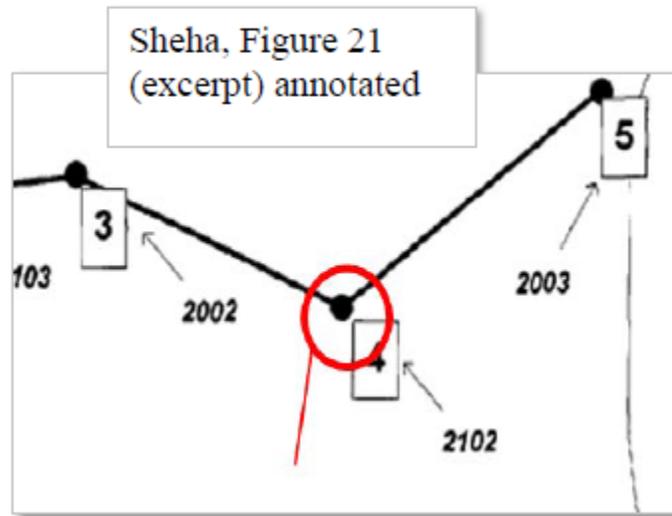


Figure 21, above, is annotated by Petitioner to show the location of the user-specified symbol. *Id.* at 41.

Petitioner argues a person of ordinary skill in the art would have understood that it would have been a mere design choice to allow a user to customize an interactive map by specifying a symbol to be displayed. *Id.* at 41 (citing Ex. 1003 ¶ 124). In fact, Petitioner argues, Sheha allows users to graphically modify a map by manipulating icons that represent different displayed objects such as devices, vehicles, or people. *Id.* (citing Ex. 1006

¶¶ 24–25). Allowing a user to further specify an icon or symbol, Petitioner argues, would have been a design choice. *Id.* (citing Ex. 1003 ¶ 124).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to this limitation. See PO Resp. 10–34.

Petitioner has persuasively shown Sheha teaches or suggests limitation 1.7, because Sheha shows, in Figure 20, that a user can drag 2011 (“receiving user input via user interaction with the interactive display of the first device”) the selected static Point of Interest (POI) 2009 to the pre-calculated route 2004 (“the user input specifying a location and a symbol”) and add a new destination point (“corresponding to an entity other than the first device and the second devices”) to the pre-calculated route 2004 at the point 2015 where the POI icon was dropped by releasing the selected POI 2010. The user input specifies the location of Point of Interest 2009 and the symbol corresponding to POI 2009, which is an entity other than the first device and the second devices.

*[1.8] based on the user input, adding the user-specified symbol to the interactive display at a position on the interactive map corresponding to the user-specified location, and transmitting the user-specified symbol and location to the second devices for addition of the user-specified symbol to respective interactive displays of the second devices at respective positions on respective interactive maps corresponding to the user-specified location. (see also [28.8], [41.8], [54.9])*

Petitioner argues Sheha teaches user input in the form of dragging and dropping an icon representation of a location-relevant object icon (e.g., a gas station Point of Interest (POI) 2009) from a first location on a map to a second location on a route on a map. Pet. 42 (citing Ex. 1006 ¶¶ 33, 118,

Figs. 20, 21). Petitioner argues the location-relevant object icon “is selected [by the user] and dragged . . . and then dropped onto a particular route segment on the map [which] automatically adds the POI as a destination point” on the map. *Id.* (citing Ex. 1006 ¶ 33).

Petitioner argues this “destination point” is a “*user-specified location*” because the user selected the icon representation at that location. *Id.* (citing Ex. 1006 ¶¶ 39, 118; citing Ex. 1003 ¶ 127). Moreover, Petitioner argues, the “destination point” is a “*user-specified symbol*” because the user’s action of dragging and dropping the POI results in the point being added to the interactive display at the “*user-specified location*” for the POI. *Id.* at 42–43 (citing Ex. 1003 ¶ 127).

Petitioner also argues, “Sheha’s invention provides the ability to send location-relevant objects, including routes, to other users.” *Id.* at 43 (citing Ex. 1006 ¶ 95). Petitioner argues these routes “may include the symbol of POI 2009 on the map.” *Id.* (citing Ex. 1006 ¶¶ 95, 97–98). Petitioner argues Sheha teaches that transmitting routes between devices includes “all necessary information to completely re-create the route 206 on the remote user’s 704 application without any loss of information.” *Id.* (citing Ex. 1006 ¶ 98). The “necessary information,” Petitioner argues, includes “location-relevant *graphical* information, such as the selected POIs.” *Id.* at 43–44 (citing Ex. 1006 ¶ 12).

Petitioner argues a person of ordinary skill in the art would have readily understood that Sheha’s route transmission includes relevant route information for generating a map, such as the symbol that is displayed on the map that represents the user-specified location. *Id.* at 44 (citing Ex. 1006, Fig. 21; Ex. 1003 ¶ 128).

Petitioner further argues the combination of Fumarolo and Sheha teaches or suggests transmitting a user-specified symbol. *Id.* at 45. Petitioner argues that in Fumarolo, users can communicate to “immediately obtain critical information related to the incident, such as the incident location and other details.” *Id.* (citing Ex. 1005, 1:64–2:3). Petitioner argues a person of ordinary skill in the art “would have understood that Fumarolo’s disclosure of sharing ‘critical information’ could have included sharing ‘location-relevant information’ as taught by Sheha, and . . . would have also understood that sharing this type of information would allow for improved route planning between communication units during an emergency.” *Id.* (citing Ex. 1003 ¶ 129).

In response to Petitioner’s arguments, Patent Owner argues, “Petitioner fails to meet its burden to disclose this limitation because a person of ordinary skill in the art would not have been motivated to modify Fumarolo with any components of Sheha to arrive at the claimed *second devices*.” PO Resp. 12. Because Patent Owner’s argument is directed to the motivation to combine Fumarolo and Sheha, we consider Patent Owner’s argument *infra*.

Petitioner has persuasively shown Sheha teaches or suggests limitation 1.8 because Sheha teaches user input (“based on the user input”) in the form of dragging and dropping an icon (“adding the user-specified symbol”) representation of a location-relevant object icon (e.g., a gas station Point of Interest (POI) 2009) from a first location on a map to a second location (“at a position on the interactive map corresponding to the user-specified location”) on a route on a map (“to the interactive display”). Sheha’s invention also provides the ability to send location-relevant objects, including routes, to other users (“transmitting the user-specified symbol and

location to the second devices”). Sheha further teaches that transmitting routes between devices includes all necessary information to completely re-create the route 206 on the remote user’s 704 application without any loss of information (“for addition of the user-specified symbol to respective interactive displays of the second devices at respective positions on respective interactive maps corresponding to the user-specified location”).

## 2. *Motivation to Combine Fumarolo, Sheha, and Lazaridis*

Petitioner argues the limitations of the independent claims would have been obvious over the combined teachings of Fumarolo, Sheha, and Lazaridis. Pet. 22. Petitioner relies on Fumarolo principally for its teaching of a communication system that allows a user of a “display-based terminal” that includes a map, which can also be implemented as a “remote terminal,” to communicate with “communication units,” such as “two-way mobile radios, two-way portable radios, or two-way wireless data terminals.” *Id.* at 22–24 (citing Ex. 1005, 4:6–8). Petitioner maps the recited “*first device*” to Fumarolo’s “display based terminal,” and maps the recited “*plurality of second devices*” to Fumarolo’s “communication units.” *Id.* at 22, 24.

Petitioner’s declarant, Mr. Williams, explains that expanding wireless device locators to the creation of ad-hoc networks for emergency responders was known in the art prior to the ’055 patent. *See* Ex. 1003 ¶¶ 41–49. Mr. Williams explains that in the year 2000, Charles E. Perkins published a book, titled “Ad Hoc Networking” (Ex. 1021), where Perkins explains that “[a]s a matter of definition, an ad hoc network is one that comes together as needed, not necessarily with any assistance from the existing Internet infrastructure.” *Id.* ¶ 41 (citing Ex. 1021, 4). Mr. Williams notes Perkins further explains that ad hoc networks could be especially useful for emergency services where “it will be important to find ways to enable the

operations of networks even when infrastructure elements have been disabled as part of the effects of a disaster.” *Id.*

Mr. Williams also explains that utilizing interactive maps within the context of location-based services and ad-hoc networks was also known prior to the ’055 patent. *Id.* ¶¶ 50–51. For example, Mr. Williams explains, Grube teaches a system for providing maps to a group of wireless devices where the maps provide location information to each of the wireless devices. *Id.* ¶ 51 (citing Ex. 1030, Abs., ¶¶ 26, 30, 34–35, 61).

Given this background, Petitioner argues a person of ordinary skill in the art would have been motivated to implement Fumarolo’s “two-way wireless data terminals” (i.e., “communication units”) as a “mobile wireless phone” as described by Sheha, because “Sheha suggests the use of cell phones in automatic vehicle location (AVL) and dispatch applications as disclosed by Fumarolo.” Pet. 9–10, 25 (citing Ex. 1005, 1:16–41, 4:23–29; Ex. 1006 ¶¶ 4, 7, 11; Ex. 1003 ¶ 82). Petitioner also argues it would have been obvious to implement Fumarolo’s “individual identification” that identifies Fumarolo’s “communication units” as a telephone number for accomplishing the same objective, as described by Sheha. *Id.* at 25–26 (citing Ex. 1003 ¶ 84). Because telephone numbers were well known, Petitioner argues, such a combination would have led to the predictable result of using telephone numbers of communication units to establish communications between these units. *Id.* at 9–10, 26.

With respect to limitation 1.8, Petitioner argues that by enabling Sheha’s location-relevant information, such as POIs and routing information, to be shared among first responders, “Fumarolo’s mapping application would be improved to allow users to view such information within the ‘single map environment.’” Pet. 45 (citing Ex. 1005, 2:55–56;

Ex. 1003 ¶ 129). Petitioner argues, therefore, a person of ordinary skill in the art “would have found it obvious for Fumarolo’s system to include the capability to exchange Sheha’s location-relevant information between communication devices.” *Id.* (citing Ex. 1003 ¶ 130).

Petitioner argues, the “combination [of Fumarolo and Sheha] represents a simple substitution of one known element (i.e., Fumarolo’s two-way wireless data terminal) for another (Sheha’s mobile wireless phone). Pet. 9 (citing Ex. 1003 ¶¶ 59–70). Petitioner also argues, “[i]mplementing Fumarolo’s two-way wireless-data terminal as a mobile wireless phone as taught by Sheha is an obvious design choice.” *Id.* at 10. Petitioner further argues, “[u]sing Fumarolo’s two-way wireless-data terminal as a mobile wireless phone as taught by Sheha represents no more than ‘the predictable use of prior art elements according to their established functions.’” *Id.* (quoting *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007)).

Petitioner then adds teachings from Lazaridis to the combination of Fumarolo and Sheha. *See* Pet. 11–13, 26–31. Petitioner argues, Lazaridis teaches “allowing mobile stations to exchange identification information using a predetermined communication path for the purpose of obtaining identification information to use in establishing a different communication path for communicating,” which Lazaridis achieves by “exchanging mobile station identification information through an SMS service.” *Id.* at 27 (citing Ex. 1007 ¶¶ 29, 34).

Petitioner argues a person of ordinary skill in the art “would have understood that SMS messages use telephone numbers to identify mobile devices to and from which the SMS messages are sent or received,” and that “SMS messages include telephone numbers of both the transmitting and receiving mobile devices as a means of identification.” *Id.* at 28 (citing Ex.

IPR2018-01080

Patent 9,408,055 B2

1003 ¶¶ 88–89). Petitioner also argues a person of ordinary skill in the art “would have also understood that the SMS messages include IP-address information that is usable by the devices to send IP-based communications.” *Id.* at 29 (citing Ex. 1003 ¶ 92).

Petitioner argues a person of ordinary skill in the art would have been motivated to incorporate Lazaridis’ features into Fumarolo’s communication system for at least two reasons. *Id.* First, Petitioner argues, implementing Fumarolo’s “data communication” as an IP-based communication, as taught by Lazaridis, would allow for more efficient exchange of larger messages between devices in Fumarolo’s communication system. *Id.* at 11–13, 29 (citing Ex. 1003 ¶¶ 64, 93; *see also* Ex. 1007 ¶¶ 26, 32, 57). Petitioner argues, “[i]mproving the speed and efficiency of communications within Fumarolo’s emergency system would benefit the emergency responders (e.g., police, firemen) and their ability to coordinate responses to an emergency.” *Id.* at 12, 29–30 (citing Ex. 1003 ¶ 64, 93).

Second, Petitioner argues, Lazaridis’ teaching is directed to improving systems like Fumarolo’s. *Id.* at 12, 30 (citing Ex. 1003 ¶ 94). Petitioner argues Fumarolo describes a “display-based terminal” that acts as a centralized device that tracks locations of communication units (and groups them) through exchange of information between the communication units and the display-based terminal. *Id.* (citing Ex. 1005, 5:17–21; 6:25–39, 12:27–30). Thus, Petitioner argues, based on Lazaridis’ express disclosure of improving such systems, a person of ordinary skill would have incorporated Lazaridis’ SMS-IP exchange functionality into Fumarolo’s communication system for the benefits described in Lazaridis. *Id.* (citing Ex. 1003 ¶ 95).

Petitioner argues, “[i]mplementing Lazaridis’s SMS and IP-based functionalities in Fumarolo’s system as modified by Sheha’s mobile wireless phone would have been an obvious design choice.” Pet. 13. Petitioner also argues, “[t]he combination of using Lazaridis’s SMS and IP-based functionalities in Fumarolo’s system as modified by Sheha’s mobile wireless phone represents no more than ‘the predictable use of prior art elements according to their established functions.’” *Id.* (quoting *KSR*, 550 U.S. at 417).

Patent Owner responds to Petitioner, arguing that “Petitioner has not shown that a person of ordinary skill in the art would have been motivated to modify Fumarolo’s AVL-based dispatch system with Sheha’s mobile phones or that a person of ordinary skill in the art would have recognized the simple substitution of Fumarolo’s RF radio devices with Sheha’s mobile phones to arrive at the claimed *second devices*.” PO Resp. 10. Patent Owner argues, “Sheha’s identification of deficiencies with AVL-based dispatch systems and Sheha’s wholesale replacement of the entire system provides prima facie evidence that a person of ordinary skill in the art would not have recognized the simple substitution and Petitioner does not address Sheha’s disclosure.” *Id.* See also *id.* at 13.

Patent Owner also argues, “a person of ordinary skill in the art would not have been motivated to modify Fumarolo with any components of Sheha to arrive at the claimed *second devices*.” PO Resp. 12 (citing Ex. 2007 ¶ 24). Specifically, Patent Owner argues, “Fumarolo and Sheha do not teach or suggest second devices with respective interactive displays.” *Id.* Fumarolo’s “communication units,” Patent Owner argues, “do not include displays, much less *interactive displays*.” *Id.* Petitioner’s expert, Dr. Carbonell, testifies that Petitioner’s proposed substitution “would have been

anything but simple and would have required a great deal of creativity and experimentation, scrapping the AVL-based dispatch system for a completely re-designed system.” *Id.* at 14 (citing Ex. 2007 ¶¶ 26–27).

We disagree with Patent Owner. Once again, Patent Owner criticizes the references individually rather than considering each reference, not in isolation, but for what it fairly teaches in combination with the prior art as a whole. *See In re Merck & Co.*, 800 F.2d at 1097.

Petitioner’s declarant, Mr. Williams, testifies that the type of location-based service described in Sheha is similar to the one used in Fumarolo. Ex. 1003 ¶ 83. Mr. Williams points out that like Fumarolo, “Sheha also describes AVL and dispatch applications and suggests that cell phones may be used in such applications.” *Id.* at ¶ 61 (citing Ex. 1006 ¶¶ 4, 7, 11). Mr. Williams testifies, “[I]ike Fumarolo, Sheha discloses a method for displaying locations of objects on a map of a display device [(citing Ex. 1006 ¶ 84, Fig. 2)], where these objects can include communication devices such as phones and vehicles [(citing Ex. 1006, ¶¶ 19, 22)].” Ex. 1003 ¶ 80.

Contrary to Patent Owner’s argument that neither Fumarolo nor Sheha teach or suggest second devices with respective interactive displays, Mr. Williams testifies, “*Sheha’s map is interactive* allowing for the selection of the displayed objects that correspond to communication units such as phones.” *Id.* (emphasis added) (citing Ex. 1006 ¶ 25 (describing use of a “graphical map for the purpose of sending location-relevant information object(s) to other users”), ¶ 22 (describing implementing phones as “users”), ¶ 27 (describing selecting icon representations of users in order to initiate a communication with the user associated with the icon)).

Moreover, Sheha provides an example of the interactivity of its map in “a situation where a user can map another user's location using a simple

graphical method of selecting a user, contact, or group of users or contacts, and dragging-and-dropping its graphical representation onto the map display 224. Ex. 1006 ¶ 87 (citing Fig. 3). Petitioner’s proposed combination of Fumarolo and Sheha involves the substitution of one known element (i.e., Fumarolo’s two-way wireless data terminal or “second device”) for another (Sheha’s mobile wireless phone). Ex. 1003 ¶ 83. Thus, it is Petitioner’s *combination* of Fumarolo and Sheha that provides the recited “second devices” with “interactive maps.”

Mr. Williams testifies, “[t]his combination would have been particularly obvious, given that in the early 2000s, use of wireless phones was becoming more widespread especially in conjunction with the Internet for obtaining information and initiating communications.” *Id.* at ¶ 61 (citing Ex. 1009 ¶ 4; Ex. 1031, 17, 19–20, 25; Ex. 1032, 104). Mr. Williams testifies, “a [person of ordinary skill in the art] would have recognized the benefits of incorporating such devices into Fumarolo. *Id.*”

Mr. Williams also testifies a person of ordinary skill in the art “would also look to incorporate Sheha’s wireless phones into Fumarolo based on the similar technical disclosures in both references. *Id.* ¶ 61. Contrary to Dr. Carbonell’s testimony, Mr. Williams testifies, “incorporating Sheha’s mobile devices into Fumarolo’s AVL system merely represents a simple substitution of one known element (i.e., Fumarolo’s two-way wireless data terminal) for another (Sheha’s mobile wireless phone).” *Id.* Mr. Williams explains, “incorporating wireless phones and the corresponding telephone numbers into Fumarolo’s system represents a simple substitution of Sheha’s wireless phones for Fumarolo’s communication units which would have led to the predictable result of utilizing telephone numbers of communication

units as a means for establishing communications between these units.” Ex. 1003 ¶ 84. We find Mr. William’s testimony persuasive.

Patent Owner also argues, “Petitioner’s and Mr. Williams’ obviousness analysis is deficient, however, because they provide no motivation to combine Fumarolo’s ‘remote terminal’ with Sheha’s mobile phones,” and “Petitioner’s and Mr. Williams’ alleged motivation to combine Fumarolo’s ‘remote terminal’ with Sheha’s ‘wireless phones’ is based on the inconsistency that Fumarolo’s ‘communication units 105-113’ are the same as Fumarolo’s ‘remote terminal.’” PO Resp. 18–19 (citing Pet. 9–10; Ex. 1003 ¶ 60; Ex. 2007 ¶¶ 32–37).

Patent Owner further argues Petitioner cannot rely on the same “motivation statement for both *first device* and *second device* limitations” because Fumarolo’s “communication units 105–113” are not the same as Fumarolo’s “remote terminal.” PO Resp. 19 (citing Ex. 2007 ¶¶ 32–37). Patent Owner argues, “Fumarolo expressly distinguishes between its ‘display-based terminal’ and ‘communication units.’” *Id.* Patent Owner argues, “[a] person of ordinary skill in the art would understand that Fumarolo’s ‘remote terminal’ is not described as the same or similar to any of the ‘communication units’” and such a skilled person “would not have understood to combine Fumarolo’s dispatch systems, whether display-based or remote, with any handset or wireless phone.” *Id.* at 21, 23 (citing Ex. 1005, 4:66–5:2; Ex. 2007 ¶¶ 32–37). Mr. Williams, Patent owner argues, agreed that Fumarolo’s “display-based terminal” and “communication units” are different devices and that Mr. Williams’ “proposed motivation to combine for the *first device* was based on Fumarolo’s ‘communication units,’ as opposed to the ‘display-based terminal.’” *Id.* at 25–26 (citing Ex. 2009, 121:18–21, 125:20–126:6; Ex. 2007 ¶¶ 38–39).

The problem with Patent Owner’s argument is that Petitioner does not argue that Fumarolo’s display-based terminal and communication units are the same. Rather, Petitioner’s argument is that one of ordinary skill in the art would have been motivated to modify Fumarolo’s system to include the transfer of location information from a display-based terminal to the communication units in the field, because Fumarolo teaches a display-based terminal as a remote terminal, making the two-way transfer of location information desirable.

As Petitioner points out, Mr. Williams testified, “Fumarolo’s and Sheha’s disclosures would have motivated a POSA to modify Fumarolo’s system to include the transfer of location information from a dispatcher utilizing a display-based terminal to respective communication units.” Reply 15 (citing Ex. 1003 ¶ 107). Mr. Williams also explains that “Fumarolo discloses an embodiment of the display-based terminal as ‘a remote terminal’ [and] [w]ith this embodiment, it would have been obvious to a POSA to incorporate two-way location transfer.” *Id.* (citing Ex. 1003 ¶ 107). With this motivation, Petitioner asserts, Mr. Williams provides separate explanations for the resulting modification to Fumarolo’s display-based terminal and communication units as a mobile device (or wireless phone). *Id.* (citing Ex. 1003 ¶ 118 (“In particular Fumarolo’s *‘remote terminal’* . . . which displays a GUI for allowing a user to initiate communications with other devices, could be implemented as a wireless phone”), ¶ 119 (“The combination of Fumarolo and Sheha would result in implementing Fumarolo’s *communication units* . . . as wireless devices.”) (emphasis added)).

We find Petitioner’s arguments and evidence regarding the combination of Fumarolo, Sheha and Lazaridis to be persuasive. For the

foregoing reasons, based upon all the evidence and arguments of record, we find Petitioner has shown persuasively, by a preponderance of the evidence, that a person of ordinary skill in the art at the time of the invention would have been motivated to combine the teachings of Fumarolo, Sheha and Lazaridis in the manner proffered by Petitioner.

*3. Summary as to Independent Claims 1, 28, 41, and 54*

For the reasons stated above, we find Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests all the limitations of independent claims 1, 28, 41, and 54. Petitioner has demonstrated, by a preponderance of the evidence, that independent claims 1, 28, 41, and 54 of the '055 patent are unpatentable under § 103 as obvious over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*4. Analysis of Dependent Claims*

Petitioner contends dependent claims 2, 5, 6, 7, 14, 15, 17, 21–25, 30, 32–34, 36, 40, 42, 43, 45, and 49 are obvious under 35 U.S.C § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis. Pet. 20, 48–70. Patent Owner responds specifically to Petitioner's showing for claims 2, 17, 22, and 42. PO Resp. Patent Owner does not respond specifically to Petitioner's evidence and arguments with respect to claims 5, 6, 7, 14–15, 21, 23–25, 30, 32–34, 36, 40, 43, 45, and 49. *See* PO Resp. 10–37.

*a. Claims 2 and 42*

Claims 2 and 42 depend respectively from claims 1 and 41 and add the following limitations:

2. The method of claim 1, further comprising performing, by the first device:
42. The storage device of claim 41 wherein the operations further comprise:

[2.1; and 42.1] presenting another symbol on the interactive map corresponding to a fixed location and associated with a telephone number; and

[2.2; and 42.2] receiving user selection of the other symbol and, based thereon, initiating a telephone call to the telephone number associated with the symbol.<sup>7</sup>

Ex. 1001, 15:17–24, 19:51–58.

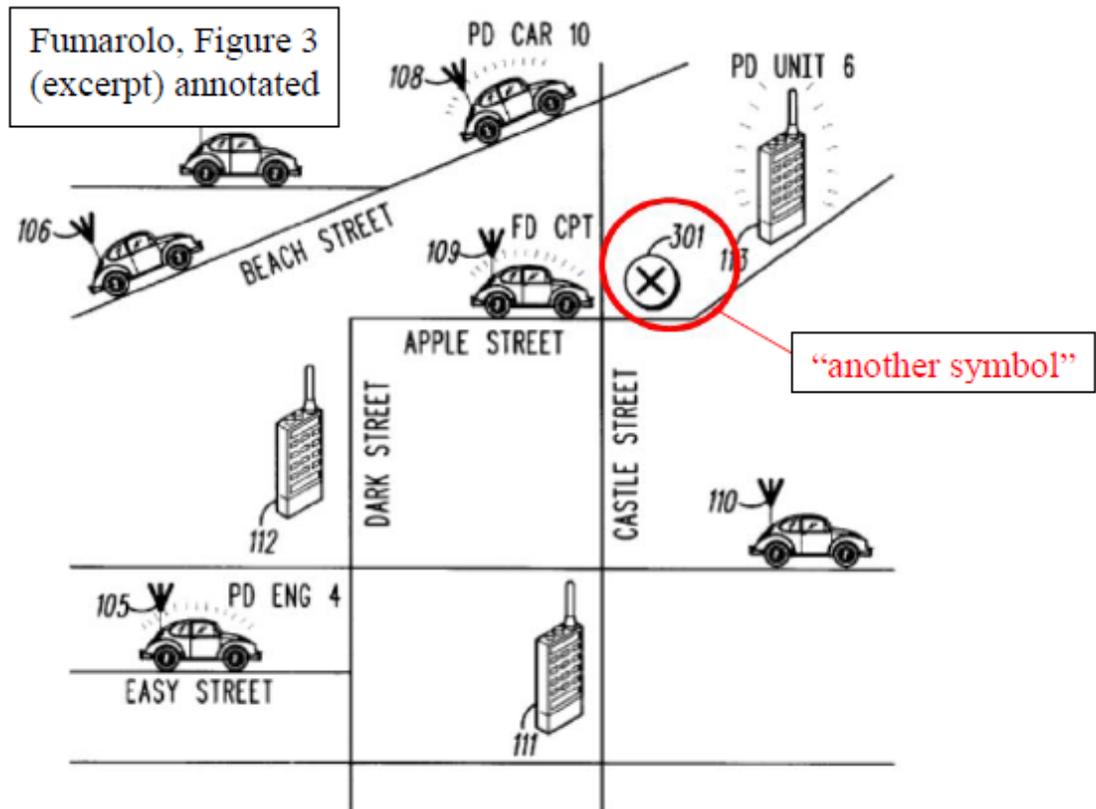
*(1)[2.1; and 42.1] presenting another symbol on the interactive map corresponding to a fixed location and associated with a telephone number*

Petitioner asserts the combination of Fumarolo, Sheha, and Lazaridis teaches limitation 2.1/42.1. Pet. 48 (citing Ex. 1003 ¶¶ 138–146). Petitioner asserts Fumarolo teaches the functionality of presenting another symbol at a fixed location, and Sheha teaches the telephone-number functionality. *Id.* Petitioner also asserts Fumarolo teaches using “standard telephone lines” to establish communications between the display-based terminal and the wireless infrastructure. *Id.* (citing Ex. 1005, 4:14–18). Petitioner argues this also suggests that Fumarolo’s units use (or are capable of using) telephone numbers. *Id.* (citing Ex. 1003 ¶ 140).

Fumarolo’s Figure 3, annotated by Petitioner, is shown below.

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<sup>7</sup> In the Petition’s discussion of this portion of dependent claims 2 and 42, both the Petition and Petitioner’s expert declaration (Ex. 1003) appear to make inadvertent reference to dependent claim 29. *See, e.g.*, Pet. 51–52; Ex. 1003 ¶¶ 150–151. Because dependent claim 29 is not included in the Petition’s list of challenged claims (*see* Pet. 20) and was not otherwise addressed substantively by the parties during this proceeding, we consider these references to claim 29 in the Petition and the Williams’ Declaration to be inadvertent and therefore harmless error.



Petitioner argues Fumarolo’s Figure 3, shown above annotated by Petitioner, depicts presenting another symbol 301 on an interactive map corresponding to an emergency incident at a fixed location. *Id.* at 49 (citing Ex. 1005, 5:41–53, 8:48–52, 8:56–60).

For claim 2, which recites that this step is performed by the first device, Petitioner argues Fumarolo teaches that this additional symbol is presented on the display of the mobile terminal. *Id.* (citing Ex. 1005, 5:22–24; 5:41–45).

Petitioner argues that like Fumarolo, Sheha also teaches a method for displaying an object’s location on a map of a display device where the object can include points of interest (POIs) having a fixed location such as a restaurant or gas station. *Id.* (citing Ex. 1006 ¶¶ 15, 84, Fig. 2). Petitioner argues these POIs are represented as user-selectable symbols on a map. *Id.*

IPR2018-01080

Patent 9,408,055 B2

at 49–50 (citing Ex. 1006 ¶¶ 105, 118, Figs. 13, 20). Sheha further explains, Petitioner argues, that (address) information about these displayed objects, including POIs, can be accessed using a personal-information manager (PIM). *Id.* at 50 (citing Ex. 1006 ¶ 93; Ex. 1003 ¶¶ 141–142).

Petitioner argues it would have been obvious to a person of ordinary skill in the art that POIs, such as restaurants and gas stations, would be associated with a telephone number. *Id.* (citing Ex. 1003 ¶ 142). Petitioner argues, therefore, that Sheha teaches a symbol on an interactive map corresponding to a fixed location and associated with a telephone number.

Petitioner also argues it further would have been obvious to incorporate Sheha’s teaching of a fixed location such as a restaurant or gas station that is associated with a telephone number into Fumarolo’s communication system. *Id.* (citing Ex. 1003 ¶ 143). For example, Petitioner argues, it would have been obvious to implement Fumarolo’s symbol 301, representative of an incident, as a POI that has a telephone number. *Id.* (citing Ex. 1003 ¶¶ 144–145). Petitioner argues that given the ubiquity of telephone numbers and their utility during emergency situations, modifying Fumarolo’s system to include Sheha’s POI-related functionality would have led to the predictable result of enabling telephone-based communications between Fumarolo’s units. *Id.* (citing Ex. 1003 ¶ 146).

Patent Owner argues Fumarolo’s units are not capable of using telephone numbers because Fumarolo’s “communication units” are RF radio devices. PO Resp. 35 (citing Ex. 200[7] ¶ 47). Moreover, Patent Owner argues, “this limitation concerns a *fixed location*, not a *second device*.” *Id.* Thus, Patent Owner argues, “Petitioner’s reliance on any communication unit’s use of a telephone number is irrelevant to the subject matter of the claims.” *Id.* Patent Owner also argues, “Petitioner further concedes that

Sheha fails to disclose *presenting another symbol on the interactive map corresponding to a fixed location and associated with a telephone number*, as Sheha makes no reference or suggestion of a telephone number associated with a symbol of a fixed entity.” *Id.* Patent Owner also argues, “Petitioner mischaracterizes Sheha’s disclosure about a PIM Manager, as the address information concerns a contact only, not a point of interest.” *Id.* (citing Ex. 1006 ¶ 93).

Petitioner replies to Patent Owner’s arguments by arguing the Petition established that Fumarolo teaches “presenting another symbol on the interactive map corresponding to a fixed location.” Reply 21 (citing Pet. 48–50). Fumarolo explains, Petitioner asserts, that this “another symbol” (element 301 in Fig. 3 of Fumarolo) may correspond to an emergency incident. *Id.* (citing Ex. 1005, 5:41–53, 8:48–52, 8:56–60). Petitioner asserts the Petition then relied on Sheha to teach the concept of points of interest displayed on a map, which include fixed locations such as a restaurant or gas station. *Id.* (citing Pet. 49). The Petition concluded, Petitioner asserts, that it would have been obvious that Fumarolo’s incident could take place at a fixed location, such as a restaurant or gas station, each one being associated with a telephone number. *Id.*

We agree with Petitioner. Fumarolo’s Figure 3, shown above, depicts presenting another symbol 301 on an interactive map corresponding to an emergency incident at a fixed location. Pet. 49 (citing Ex. 1005, 5:41–53, 8:48–52, 8:56–60). Sheha also teaches a method for displaying an object’s location on a map of a display device where the object can include points of interest (POIs) having a fixed location such as a restaurant or gas station. *Id.* (citing Ex. 1006 ¶¶ 15, 84, Fig. 2). These POIs are represented as user-selectable symbols on a map. *Id.* at 49–50 (citing Ex. 1006 ¶¶ 105, 118,

Figs. 13, 20). Fumarolo teaches the functionality of user selection and initiating communications and suggests the use of telephone functionality, while Sheha explicitly teaches the telephone functionality. As Mr. Williams testifies, it would have been obvious to a person of ordinary skill in the art to implement Fumarolo's invention (e.g., symbol 301) as a fixed POI having a telephone number. *Id.* (citing Ex. 1003 ¶ 143).

*(2)[2.2; and 42.2] receiving user selection of the other symbol and, based thereon, initiating a telephone call to the telephone number associated with the symbol*

Petitioner argues the combination of Fumarolo and Sheha discloses limitation 2.2/42.2. Pet. 51. Petitioner argues Fumarolo teaches the functionality of user selection and initiating communications and suggests the use of telephone functionality, while Sheha explicitly teaches the telephone functionality. *Id.* Petitioner argues Fumarolo's invention "enables a user of the [display-based] terminal to easily communicate with communication units being monitored by the user." *Id.* (citing Ex. 1005, 12:27–30). This is achieved, Petitioner argues, by "enabl[ing] the terminal user to directly select the units the user wants to communicate with, the type of communication, and the transmission mode for the communication all within a single map environment." *Id.* (quoting Ex. 1005, 12:35–38). A user of Fumarolo's system, Petitioner argues, selects units by selecting the representation of that unit displayed on a map. *Id.* (citing Ex. 1005, 6:12–49).

Moreover, Petitioner argues, Fumarolo's invention allows for "automatic initiation of the communication with the selected communication units without requiring the terminal user to leave the single map environment." *Id.* (quoting Ex. 1005, 12:38–42). Petitioner argues

Fumarolo also teaches using “standard telephone lines” to establish communications between the display-based terminal and the wireless infrastructure. *Id.* (citing Ex. 1005, 4:14–18). Based on this, Petitioner argues Fumarolo teaches “receiving user selection of a symbol and, based thereon, initiating a telephone call to the telephone number associated with the symbol.” *Id.* at 51–52 (citing Ex. 1003 ¶ 149).

Petitioner argues it would have been obvious to a person of ordinary skill in the art to modify Fumarolo’s communication system to include the display and selection of “another symbol” as suggested by Sheha. *Id.* at 52 (citing Ex. 1003 ¶ 150).

For claim 2, which recites that this step is performed by the first device, Petitioner argues Fumarolo teaches the selection of displayed symbols (corresponding to displayed units) is received by the mobile terminal. *Id.* (citing Ex. 1005, 3:26–31). Petitioner argues a person of ordinary skill in the art would have understood that, in the combination of Fumarolo and Sheha, the selection of “another symbol” such as the symbol 301 representative of an incident would similarly be received by the mobile terminal. *Id.* (citing Ex. 1003 ¶ 150).

Petitioner also argues, that to the extent Fumarolo is determined not to explicitly teach “initiating a telephone call to the telephone number associated with the symbol,” it would have been obvious to a person of ordinary skill in the art to implement Fumarolo’s incident (e.g., symbol 301) as a POI such as a restaurant having a telephone number. *Id.* (citing Ex. 1003 ¶ 151). Petitioner argues, therefore, that Fumarolo as modified by Sheha, teaches “initiating a telephone call to the telephone number associated with the symbol” based on a user selection of the symbol. *Id.* (citing Ex. 1003 ¶ 152). Given Fumarolo’s use of “standard telephone

lines,” Petitioner argues, modifying Fumarolo to include Sheha’s explicit teachings of connecting to POIs using telephone numbers would have led to the predictable result of establishing telephone-based communications in Fumarolo’s system. *Id.* at 52–53 (citing Ex. 1003 ¶ 153).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to limitation 2.2/42.2. *See* PO Resp. 34–36.

Based on all the evidence and arguments presented, Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claims 2 and 42.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claims 2 and 42 of the ’055 patent are unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*b. Claims 5, 32, and 45*

Claims 5, 32, and 45 depend respectively from claims 1, 28, and 41 and add the following limitation:

transmitting location information including an updated location of the first device to the second devices based on displacement of the first device by at least a predetermined distance relative to a previous location of the first device, passage of at least a predetermined time interval since transmitting information including a location of the first device, or a combination of the displacement of the first device and the passage of time.

Ex. 1001, 15:35–42, 18:28–35, 20:2–9.

Petitioner contends the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests this limitation because Fumarolo teaches a display-based terminal that is operated by a dispatcher and that can be implemented as a mobile terminal, (Fumarolo,), which as modified by Sheha and Lazaridis, transmits its location information to second devices. Pet. 53

IPR2018-01080

Patent 9,408,055 B2

(citing Ex. 1005 4:66–5:3, 17:27–39; Ex. 1006 ¶¶ 7, 9; Ex. 1003 ¶¶ 154–158). Petitioner asserts Sheha further teaches a sender device that “is configured to send its own location on the route to the recipient . . . at any given interval of time, distance change.” *Id.* at 53–54 (quoting Ex. 1006 ¶ 29). Petitioner argues Sheha teaches that location updates based on a distance travelled were well known at the time of that invention. *Id.* at 54 (citing Ex. 1006 ¶ 7). Petitioner argues Sheha’s teaching of “any . . . distance change” is a “displacement of the first device by at least a predetermined distance relative to a previous location of the first device.” *Id.* (citing Ex. 1003 ¶ 156).

Petitioner argues Sheha teaches that location updates based on an interval of time were also well known at the time of that invention. *Id.* (citing Ex. 1006 ¶ 7). Petitioner argues Sheha’s teaching of an “interval of time” is a “passage of at least a predetermined time interval since transmitting information including a location of the first device.” *Id.* (citing Ex. 1003 ¶ 157).

Petitioner argues it would have been obvious to modify Fumarolo’s communication system to include Sheha’s location-update functionality. *Id.* (citing Ex. 1003 ¶ 158). Sheha explains, Petitioner argues, that location updates based on predefined conditions, such as distance change or time intervals, allow for location information to be transmitted automatically without user action. *Id.* at 54–55 (citing Ex. 1006 ¶ 7). Petitioner argues this modification to Fumarolo would have provided a similar benefit. *Id.* at 55 (citing Ex. 1003 ¶ 158).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to these claims. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo,

Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claims 5, 32, and 45 because Fumarolo teaches a display-based terminal that transmits its location information to second devices and Sheha further teaches a sender device that is configured to send its own location on the route to the recipient at any given interval of time, distance change.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claims 5, 32, and 45 of the '055 patent are unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*c. Claims 6 and 33*

Claims 6 and 33 depend respectively from claims 1 and 28 and add the following limitations:

[6.1; and 33.1] receiving second user selection of one or more of the symbols corresponding to one or more of the second devices; and  
[6.2; and 33.2] receiving user input assigning the one or more second devices corresponding to the second selected one or more symbols to a subnet.

Ex. 1001, 15:45–50, 18:39–44.

Petitioner contends Fumarolo teaches or suggests these limitations because Fumarolo teaches that a user may select a first group of units to participate in “a group voice call with the selected communication units.” Pet. 55 (citing Ex. 1005, 9:12–18; Ex. 1003 ¶¶ 159–160). “[A]fter completion of the group call with” the communication units in the first group, Petitioner asserts Fumarolo teaches that “the user selects another communication unit” to participate in another group call. *Id.* (citing Ex. 1005, 9:18–22). Petitioner argues Fumarolo’s teaching of the selection of “another communication unit” encompasses the claimed “receiving second

user selection of one or more of the symbols corresponding to one or more of the second devices.” *Id.*

Petitioner asserts Fumarolo also teaches that communication units may be assigned to a “talkgroup.” *Id.* at 56 (citing Ex. 1005, 7:30–38; Ex. 1003 ¶¶ 161–164). Petitioner argues Fumarolo’s “talkgroup” reads on the claimed “sub-net” because Fumarolo describes the talkgroups as comprising a subset of communication units. *Id.* (see Ex. 1005, 6:28–39 (describing the “fire department talkgroup” or the “police department talkgroup”); Ex. 1003 ¶ 163). Petitioner argues this satisfies the claimed requirement of “assigning” a device to a “sub-net.” *Id.* According to Fumarolo, Petitioner argues, the “talkgroups” may be the “result of a dynamic regrouping in support of an emergency.” *Id.* (citing Ex. 1005, 7:30–38). Petitioner argues that Fumarolo’s “dynamic regrouping” encompasses the claimed requirement of assigning one or more second devices to a sub-net. *Id.* (citing Ex. 1003 ¶ 164).

Petitioner argues Fumarolo’s talkgroups include communication “units 105, 108, 109, 113 [that] are members of [the] talkgroup” (citing Ex. 1005, 9:16–17); each member is represented by an icon or a symbol (*id.* at 1:58–64; Fig. 3; 16:26–31); and the talkgroup enables its members to establish group communication sessions for sharing data (*id.* at 9:12–22; 11:60–65; 14:6).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to these claims. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claims 6 and 33 because Fumarolo teaches that a user may select a first group of units to participate in a group voice call with the selected

communication units and Fumarolo also teaches that the user selects another communication unit to participate in another group call, including assigning communication units to a talkgroup.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claims 6 and 33 of the '055 patent are unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*d. Claims 7 and 34*

Claims 7 and 34 respectively depend from claims 6 and 33 and add the following limitations:

[7.1; and 34.1] receiving user selection of the sub-net; and

[7.2; and 34.2] establishing a conference among the one or more second devices of the sub-net for sharing voice, text, photographs, or video communications.

Ex. 1001, 15:53–56, 18:47–50.

Petitioner argues Fumarolo's "talkgroup" reads on the claimed "sub-net" because Fumarolo describes the talkgroups as comprising a subset of communication units. Pet. 57 (citing Ex. 1005, 6:28–39; Ex. 1003, ¶ 166). Petitioner also argues Fumarolo teaches that a display-based terminal can receive a user's selection of a specific talkgroup, such as a police or fire department talkgroup. *Id.* (citing Ex. 1005, 6:28–39). These talkgroups, Petitioner asserts, include specific communication units (e.g., a police communication unit) that have been assigned to a talkgroup (e.g., a police department talkgroup). *Id.* (citing Ex. 1005, 5:28–33, 6:28–39).

Petitioner also argues Fumarolo teaches establishing a conference with the devices of the talkgroup (i.e., sub-net). *Id.* at 58 (citing Ex. 1003 ¶¶ 167–168). Petitioner argues that after a user selects a talkgroup (or

talkgroups), Fumarolo teaches that a voice communication can be established with the communication units. *Id.* (citing Ex. 1005, 6:28–39, 6:49–54, 9:7–28).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to these claims. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claims 7 and 34 because Fumarolo teaches talkgroups comprising a subset of communication units and also teaches that voice communication can be established with the communication units.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claims 7 and 34 of the ’055 patent are unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*e. Claim 14*

Claim 14 depends from claim 1 and adds the following limitation:

14. The method of claim 1, wherein the user input further specifies information associated with the entity, and wherein the method further comprises performing, by the first device: based on the user input, transmitting the user-specified information associated with the entity to the second devices.

Ex. 1001, 16:17–24.

Petitioner argues Sheha teaches the claimed “user input” in the form of dragging and dropping an icon representation of a location-relevant object from a first location on a map (e.g., location of POI 209) to a second location on a route that is on a map. Pet. 58 (citing Ex. 1006 ¶ 118, Figs. 20, 21). This “user input” taught by Sheha, Petitioner argues, “specifies information associated with the entity” because Sheha’s user input specifies, for example, the location of an entity. *Id.* (citing Ex. 1006 ¶¶ 84, 95; Ex.

IPR2018-01080  
Patent 9,408,055 B2  
1003 ¶ 170).

Petitioner asserts Sheha’s “invention provides the ability [to] send location-relevant objects to other users, and as people skilled in the art will appreciate, location-relevant objects may include routes.” *Id.* at 59 (quoting Ex. 1006 ¶ 95; Ex. 1003 ¶ 171). Sheha’s routes may be modified, Petitioner argues, based on user input, to include the symbol of POI 2009, which comprises “user-specified information associated with the entity” as required by this claim. *Id.* (citing Ex. 1006 ¶¶ 95, 97–98). Petitioner argues Sheha also teaches these user-specified routes may be transmitted between devices to include “all necessary information to completely re-create the route 206 on the remote user’s 704 application without any loss of information.” *Id.* (citing Ex. 1006 ¶ 98).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to claim 14. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claim 14 because Sheha teaches user input in the form of dragging and dropping an icon representation from a first location on a map to a second location on a route that is on a map. Sheha’s routes may be modified based on user input. Sheha also teaches these user-specified routes may be transmitted between devices.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claim 14 of the ’055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*f. Claim 15*

Claim 15 depends from claim 14 and adds the following limitation:

15. The method of claim 14, further comprising performing, by the first device: identifying user interaction with the interactive display selecting the symbol corresponding to the entity and, based, thereon, displaying the information associated with the entity.

Ex. 1001, 16:23–28.

Petitioner argues that Sheha teaches a user may select a symbol corresponding to a received point of interest (POI), which will then generate a popup window displaying various additional options for interacting with the POI. Pet. 60 (citing Ex. 1006 ¶ 101). Petitioner argues Sheha also teaches that a user who has received location-relevant information, such as a POI, can “map the received POI or display the textual location and name of the POI, or both.” *Id.* (citing Ex. 1006 ¶ 26). Petitioner argues a person of ordinary skill in the art would have recognized that, when a user chooses to both map the POI and display the textual location and name of the POI, the textual location and name of the POI could be accessed and displayed through a pop-up window. *Id.* (citing Ex. 1003 ¶ 173).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to claim 15. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claim 15 because Sheha teaches a user may select a symbol corresponding to a received point of interest (POI), which will then generate a popup window displaying various additional options for interacting with the POI and a user who has received location-relevant information, such as a POI, can map the received POI or display the textual location and name of the POI, or both.

We find Petitioner has demonstrated, by a preponderance of the

evidence, that dependent claim 15 of the '055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*g. Claim 17*

Claim 17 depends from claim 15 and adds the following limitation:

17. The method of claim 15, wherein the first device uses an Internet Protocol to transmit the user-specified symbol, location, and information associated with the entity.

Ex. 1001, 16:31–33.

Petitioner asserts the combination of Sheha and Lazaridis teaches or suggests this limitation. Pet. 61. First, Petitioner argues, Sheha teaches or suggests “the user-specified symbol, location, and information associated with the entity.” *Id.* (citing Ex. 1006 ¶¶ 6, 11–12, 18, 25, 84, 95, 99, 105, 118, Figs. 9–13, 20, 21; Ex. 1003 ¶ 175). Second, Petitioner argues, Lazaridis teaches or suggests transmitting information using an Internet Protocol. *Id.* (citing Ex. 1007 ¶¶ 4, 29, 31, 33–34, 42, 47, Fig. 7; Ex. 1003 ¶ 175).

Petitioner argues a person of ordinary skill in the art would have been motivated to combine Lazaridis’s IP-based transmissions with Sheha’s data communications because Lazaridis’s IP-based transmissions would allow for more-efficient exchange of larger messages and because Lazaridis’s disclosure is directed to improving systems like Sheha’s. *Id.* (citing Ex. 1003 ¶ 176).

Patent Owner argues Lazaridis’ disclosure is limited to the transmission of an IP address and status information. PO Resp. 36. Patent Owner argues Lazaridis does not teach the transmission of “user-specified symbol, location, and information associated with the entity,” as described in the claims. *Id.* (citing Ex. 200[7] ¶ 49). Patent Owner argues Petitioner’s

and Mr. Williams' unsupported allegations contradict the evidence of record as Lazaridis transmits IP addresses and status information over SMS and e-mail services and makes no reference to the "first device" transmitting over Internet Protocol communications. *Id.* (citing Ex. 200[7] ¶ 49).

We disagree with Patent Owner. Lazaridis explains that using IP-address information to establish a communication link "can reduce latency, reduce overall network traffic and allow for larger messages to be exchanged beyond the 160-character limit of SMS." Ex. 1007 ¶ 32. As Mr. Williams points out, data transmitted over such a link uses Internet Protocol because it is sent using IP-addresses. Ex. 1044 ¶ 29. Contrary to Patent Owner's argument that Lazaridis does not teach a "user-specified symbol, location, and information associated with the entity," the Petition relies on Sheha, not Lazaridis to teach this feature. *See* Pet. 61. The Petition also provides a motivation to send this information using an IP-based transmission as taught by Lazaridis. *Id.*

Based on all the evidence and arguments presented, Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claim 17.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claim 17 of the '055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*h. Claim 21*

Claim 21 depends from claim 1 and adds the following limitation:

21. The method of claim 1, further comprising performing, by the first device: presenting a symbol corresponding to a facility selected from the group consisting of a hospital, a police station, and a fire station, wherein the symbol corresponding to the

facility is positioned on the interactive map at a position corresponding to a location of the facility.

Ex. 1001, 16:57–62.

Petitioner argues Fumarolo and Sheha illustrate that this limitation is an obvious design choice. Pet. 62. Petitioner argues Fumarolo teaches that icons corresponding to policemen, firemen, and paramedics can be displayed on an interactive map at each entity's respective location. *Id.* (citing Ex. 1005, 1:41–45, 1:58–61, 5:28–33, Figs. 3, 4). Petitioner also argues Sheha teaches that points of interest (POIs) may be positioned on an interactive map at their respective locations. *Id.* (citing Ex. 1006 ¶¶ 6, 8, 11–12, 15, 25–26, 34–36, 40, 82, 84, 99, 101, 105, 111, 117–129, Figs. 2, 9–11, 22). Petitioner argues a person of ordinary skill in the art would have understood that an obvious design choice would have been to display a police station, fire station, and hospital as POIs on an interactive map. *Id.* (citing Ex. 1003 ¶ 178). Moreover, Petitioner argues, no patentable weight should be given to the aesthetic aspects of displaying an icon representing a particular type of facility.

Patent Owner does not respond specifically to Petitioner's evidence and arguments with respect to claim 21. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claim 21 because Fumarolo teaches that icons corresponding to policemen, firemen, and paramedics can be displayed on an interactive map at each entity's respective location, Sheha teaches that points of interest (POIs) may be positioned on an interactive map at their respective locations, and a person of ordinary skill in the art would have understood that an obvious design choice would have been to display a police station, fire station, and

hospital as POIs on an interactive map.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claim 21 of the '055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*i. Claim 22*

Claim 22 depends from claim 21 and adds the following limitation:

22. The method of claim 21, further comprising performing, by the first device: identifying user interaction with the interactive display selecting the symbol corresponding to the facility and, based, thereon, displaying information associated with the facility.

Ex. 1001, 16:63–67.

Petitioner argues the language in claim 22 is nearly identical to the language in claim 15, except the word “facility” in claim 22 replaces the word “entity” in claim 15. Like claim 15, Petitioner argues, Sheha also teaches or suggests this limitation. Pet. 63. First, Petitioner argues, with respect to the “identifying” portion of this limitation, Sheha teaches that a user may select a symbol corresponding to a received point of interest (POI), which will then generate a pop-up window displaying various additional options for interacting with the POI. *Id.* (citing Ex. 1006 ¶ 101). Second, Petitioner argues, with respect to the “displaying” portion of this limitation, Sheha teaches that a user who has received location-relevant information, such as a POI, can “map the received POI or display the textual location and name of the POI, or both.” *Id.* (citing Ex. 1006 ¶ 26).

Petitioner argues a person of ordinary skill in the art would have recognized that, when a user chooses to both map the POI and display the textual location and name of the POI, the textual location and name of the POI could be accessed and displayed through a pop-up window. *Id.* (citing

IPR2018-01080  
Patent 9,408,055 B2  
Ex. 1003 ¶ 181).

Patent Owner argues, “[t]he Petition does not include motivation to combine the three references for the purposes of arriving at the claim. PO Resp. 37. Patent Owner also argues, “the cited portions of Sheha are unrelated to the subject matter of the claim as [0101] discusses sending a POI and [0026] similarly lacks any teaching of selecting a facility symbol and displaying information associated with the symbol.” *Id.* (citing Ex. 200[7] ¶ 50.

We disagree with Patent Owner. Contrary to Patent Owner’s argument, the Petition relies on Sheha’s paragraph 101 to show that a user may select a symbol corresponding to a received point of interest (POI), which will then generate a pop-up window displaying various additional options for interacting with the POI. This relates to the recited “identifying user interaction with the interactive display selecting the symbol corresponding to the facility.” *See* Pet. 63. Paragraph 26 of Sheha is relied on to teach a user who has received location-relevant information, such as a POI, can “map the received POI or display the textual location and name of the POI, or both,” which relates to the recited “displaying information associated with the facility.” *Id.* With respect to Patent Owner’s argument that the Petition has not articulated a motivation to combine the references, we address Petitioner’s arguments in Section II.I.2.

Based on all the evidence and arguments presented, Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claim 22.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claim 22 of the ’055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*j. Claim 23*

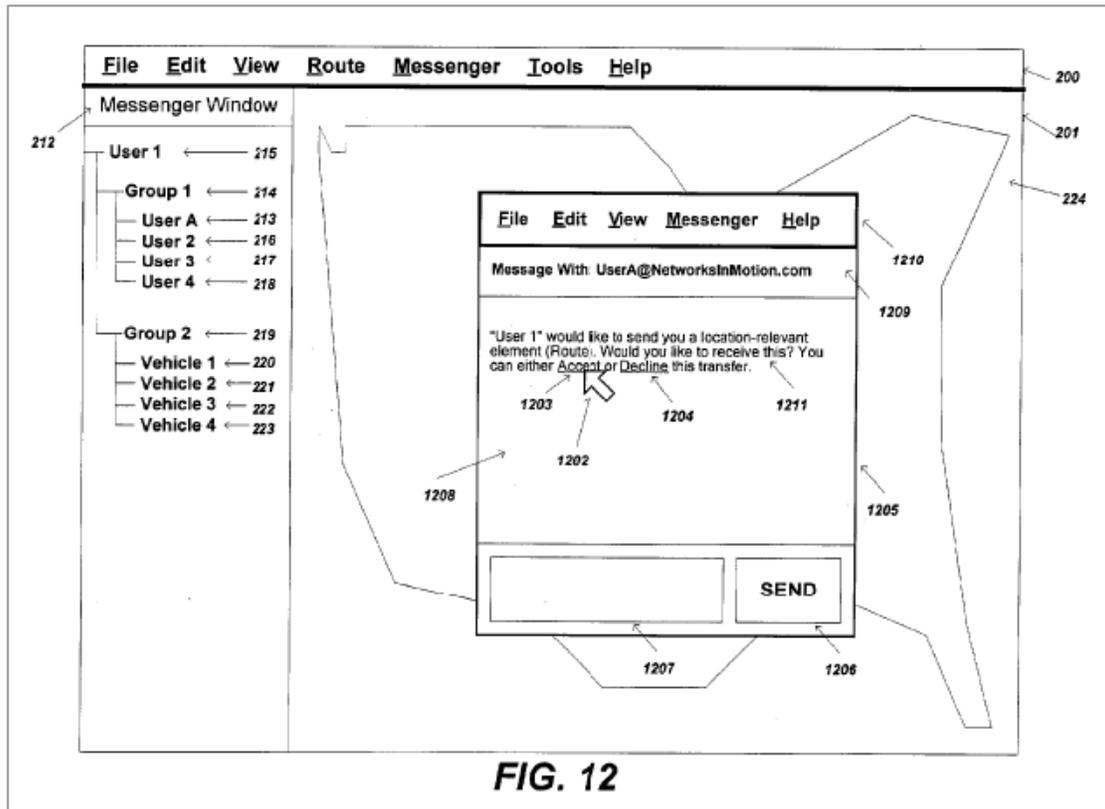
Claim 23 depends from claim 1 and adds the following limitation:

23. The method of claim 1, further comprising performing, by the first device: receiving a message sent by a particular second device, wherein the message indicates an action to be performed by the first device; and performing the indicated action.

Ex. 1001, 17:1–6.

Petitioner argues Sheha teaches or suggests this limitation. Pet. 64 (citing Ex. 1003 ¶¶ 182–186). Petitioner argues, with respect to receiving a message, that Sheha teaches location relevant information can be exchanged among users. Pet. 64. According to Sheha, Petitioner argues, a first user can “send[] location-relevant information object(s) to other users or a group of users by first selecting the location-relevant information object(s) and [then] using a graphical operation . . . to send the location-relevant object(s).” *Id.* (quoting Ex. 1006 ¶ 25).

Petitioner also argues, with respect to performing an action, Sheha teaches that the location-relevant information that was sent can be displayed—“an action”—on the display of the recipient’s device. *Id.* Sheha explains, Petitioner asserts, that in one embodiment, “User 1” 215 can receive in its IM window 1205 the request for the receipt of location-relevant information, indicating the option to accept or decline the receiving of the route by a message text question 1211 within the IM window’s text display 1208. *Id.* (citing Ex. 1006 ¶ 96). Petitioner asserts Figure 12 of Sheha, shown below, illustrates this situation.



Sheha’s Figure 12, above, “graphically displays a request to transfer a location-relevant object.” Ex. 1006 ¶ 56.

Sheha further explains, Petitioner asserts, that “[a]fter the destination user has accepted the route, as illustrated in FIG. 12 . . . the received route 1505 will be displayed in the destination user’s map display 224, as shown in FIG. 15.” Pet. 65 (quoting Ex. 1006 ¶ 107). Figure 15 of Sheha is shown below.

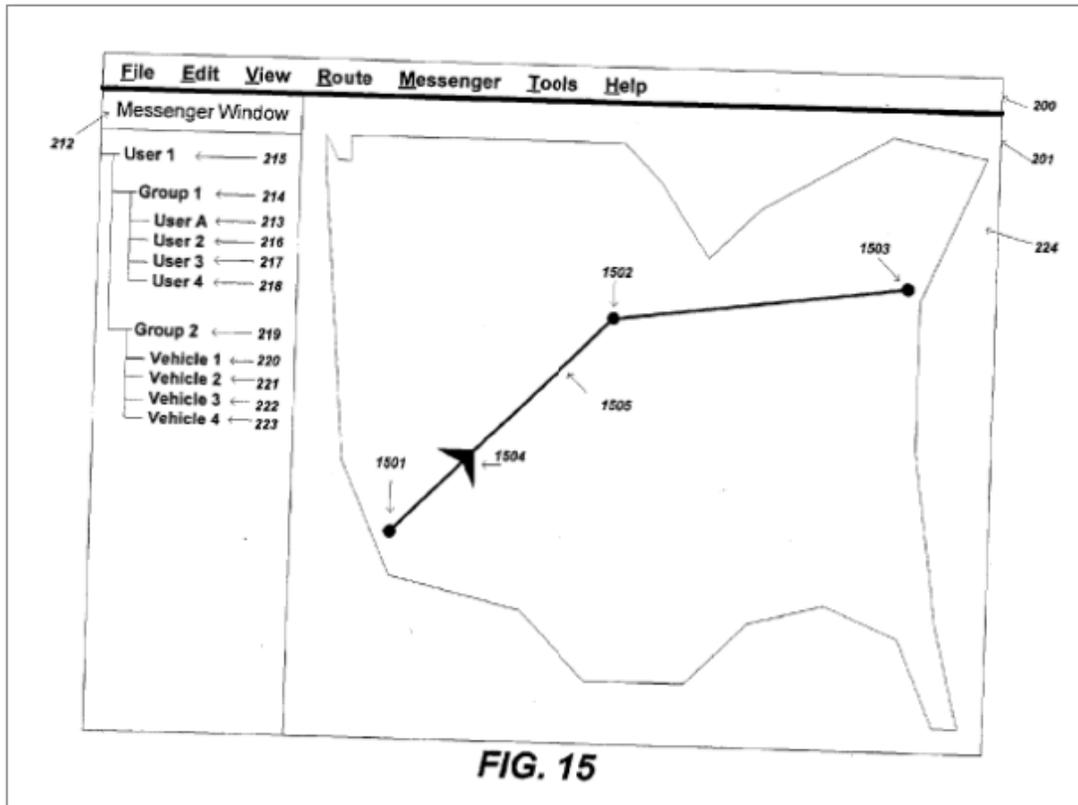


Figure 15 of Sheha, shown above, “graphically displays a received route from another user, and that other user's current location along that route on a map.” Ex. 1006 ¶ 59.

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to claim 23. See PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claim 23 because Sheha teaches location relevant information can be exchanged among users where a first user can send location-relevant information objects to other users by first selecting location-relevant objects and then using a graphical operation to send the objects. Sheha also teaches that the location-relevant information that was sent can be displayed on the display of the recipient’s device.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claim 23 of the '055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*k. Claim 24*

Claim 24 depends from claim 23 and adds the following limitation:

24. The method of claim 23, wherein the indicated action is selected from the group consisting of playing audio, initiating a phone call, vibrating, converting text to speech, changing sound intensity, and displaying information.

Ex. 1001, 17:7-10.

Petitioner asserts Sheha teaches or suggests this limitation. Pet. 66 (citing Ex. 1003 ¶ 188). Petitioner argues Sheha teaches that location-relevant information can be exchanged among users and displayed on the display of a recipient device. *Id.* (citing Ex. 1006 ¶¶ 25, 96, 107, Figs. 12, 15).

Patent Owner does not respond specifically to Petitioner's evidence and arguments with respect to claim 24. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claim 24 because Sheha teaches that location-relevant information can be exchanged among users and displayed on the display of a recipient device.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claim 24 of the '055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*l. Claim 25*

Claim 25 depends from claim 1 and adds the following limitation:

25. The method of claim 1, further comprising performing, by the first device: remotely controlling

a particular second device to perform an action by sending a message to the second device, wherein the message indicates the action to be performed.

Ex. 1001, 17:11–16.

Petitioner argues Sheha teaches or suggests this limitation. Pet. 67 (citing Ex. 1003 ¶ 190). Petitioner argues Sheha teaches that a first device can control a second device by sending location-relevant information to the second device and the location-relevant information can then be displayed on the second device’s display. *Id.* (citing Ex. 1006 ¶¶ 25, 96, 107, Figs. 12, 15).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to claim 25. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claim 25 because Sheha teaches that a first device can control a second device by sending location-relevant information to the second device and the location-relevant information can then be displayed on the second device’s display.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claim 25 of the ’055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*m. Claims 30 and 43*

Claims 30 and 43 depend respectively from claims 28 and 41 and adds the following limitation:

[30 and 43] wherein the data comprises a text message, an image, a video, or a command to cause the second devices corresponding to the selected symbols to convert text to speech.

Ex. 1001, 18:16–19, 19:59–62.

Petitioner asserts Fumarolo teaches this limitation. Pet. 67 (citing Ex. 1003 ¶ 192). Petitioner argues Fumarolo teaches “sending data to the one or more second devices.” *Id.* Petitioner also argues Fumarolo teaches several different actions that can be performed in response to a user’s interaction with the map including initiating a group, voice, and data communication. *Id.* at 67–68 (citing Ex. 1005, 6:12–39, 5:53–65). Petitioner argues data communication includes data messages that provide textual information about an incident or emergency to the communication units. *Id.* at 68 (citing Ex. 1005, 1:64–2:3; 16:36–40; 16:67–17:6; Ex. 1003 ¶ 192). Petitioner argues it would have obvious to a person of ordinary skill in the art that data communications include text information and would therefore read on the claimed “text message.” *Id.* (citing Ex. 1003 ¶ 192).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to claims 30 and 43. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claims 30 and 43 because Fumarolo teaches several different actions that can be performed in response to a user’s interaction with the map including initiating a group, voice, and data communication. Data communication may include data messages that provide textual information (“text messages”) about an incident or emergency to the communication units.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claims 30 and 43 of the ’055 patent are unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*n. Claims 36 and 49*

Claims 36 and 49 depend respectively from claims 28 and 41 and adds

the following limitation:

[36 and 49] identifying second user interaction with the interactive display selecting at least one of the user-selectable symbols corresponding to at least one of the second devices and user interaction with the display specifying an action and, based thereon, initiating a phone call or phone conference with the at least one second device.

Ex. 1001, 18:54–59, 20:28–33.

Petitioner argues the combination of Fumarolo and Sheha teaches this limitation. Pet. 68 (citing Ex. 1003 ¶¶ 193–195). Petitioner argues Fumarolo teaches the user interaction and voice communication functionality, while Sheha suggests that the voice communication can be a telephone call. *Id.* Petitioner argues Fumarolo teaches several different actions that can be performed in response to a user’s interaction with the interactive map—including initiating a group, voice, or data communication. *Id.* (citing Ex. 1005, 6:12–39, 5:53–65). Petitioner argues Fumarolo also explains that the display-based terminal can select more than one communication unit. *Id.* at 68–69 (citing Ex. 1005, 3:26–31, 6:12–19). Petitioner argues the selection of additional communication units is a “second user interaction with the interactive display selecting at least one of the user-selectable symbols corresponding to at least one of the second devices.” *Id.* at 69. Petitioner argues Fumarolo further teaches “user interaction with the display specifying an action and, based thereon, initiating” a voice communication “with the at least one second device.” *Id.* (citing Ex. 1005, 14:2–6, 18:63–19:9).

Petitioner also argues Fumarolo teaches a “voice communication” between the display-based terminal and the communications. *Id.* To the extent Fumarolo is determined not to explicitly teach that this

communication is a “phone call or phone conference,” Petitioner argues Sheha and Lazaridis teach this feature. *Id.* Petitioner argues Sheha and Lazaridis both teach communication units implemented as cell phones. *Id.* (citing Ex. 1006 ¶ 11; Ex. 1007 ¶ 78). Petitioner argues a person of ordinary skill in the art would have understood that phone calls or phone conferences could be initiated between different telephones. *Id.* (citing Ex. 1003 ¶ 195; Ex. 1006 ¶¶ 99, 22).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to claims 36 and 49. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claims 36 and 49 because Fumarolo teaches user interaction and voice communication functionality, while Sheha suggests that the voice communication can be a telephone call. Fumarolo teaches several different actions that can be performed in response to a user’s interaction with the interactive map—including initiating a group, voice, or data communication. Fumarolo also explains that the display-based terminal can select more than one communication unit.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claims 36 and 49 of the ’055 patent are unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*o. Claim 40*

Claim 40 depends from claim 28 and adds the following limitation:

40. The method of claim 28, wherein the data sent to the one or more second devices causes at least one of the second devices to place a phone call to the first device.

IPR2018-01080  
Patent 9,408,055 B2  
Ex. 1001, 19:4–6.

Petitioner argues Fumarolo teaches a terminal sending control signals (i.e., data) to selected a communication unit or units (i.e., “one or more second devices”) in order to initiate a voice communication (i.e., “phone call”) between the terminal and the selected communication unit or units. Pet. 70.

Moreover, Petitioner argues, Fumarolo’s voice communication is a phone call. *Id.* Petitioner argues Fumarolo teaches that the terminal is connected to other communication units through a wireless infrastructure. *Id.* (citing Ex. 1005, 4:6–15). Petitioner argues Fumarolo explains that the wireless infrastructure can be coupled to the terminal and the units through “standard telephone lines.” *Id.* (citing Ex. 1005, 4:15–18). Accordingly, Petitioner argues, it would have been obvious to a person of ordinary skill in the art that Fumarolo’s voice communications, implemented through the telephone lines, would be a “phone call.” *Id.* (citing Ex. 1003 ¶ 198).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to claim 40. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the recited limitations of dependent claim 40 because Fumarolo teaches a terminal sending control signals to selected a communication units in order to initiate a voice communication (“phone call”) between the terminal and the selected communication unit or units.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claim 40 of the ’055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, and Lazaridis.

*J. Claim 27 - Obviousness over Fumarolo, Sheha, Lazaridis, and Liu*

Claim 27 depends from claim 1 and adds the following limitation:

27. The method of claim 1, further comprising performing, by the first device: identifying second user interaction with the interactive display selecting a particular user-selectable symbol corresponding to a particular second device and user interaction with the display specifying an action and, based thereon, initiating voice-over-IP (VOIP) communication with the particular second device.

Petitioner contends dependent claim 27 is obvious over the combination of Fumarolo, Sheha, Lazaridis, and Liu. Pet. 20, 70–72. Petitioner argues the combination of Fumarolo, Sheha, and Lazaridis teaches or suggests the “identifying . . . user interaction” portion of this claim and Liu teaches the “initiating . . . VOIP communication” portion of this claim. Pet. 71. Liu explains, Petitioner asserts, that in an embodiment, “the network 30 comprises a packet-switched network, such as the Internet, supporting VoIP.” *Id.* (citing Ex. 1009 ¶¶ 62–63, 94).

Petitioner argues a person of ordinary skill in the art would have been motivated to combine Liu’s VOIP communication with Fumarolo’s display-based terminals to provide an efficient form of communication to first responders in an emergency situation. *Id.* (citing Ex. 1003 ¶¶ 202–205). Moreover, Petitioner argues, VOIP communication (as required by this claim) is nothing but an obvious design choice that would have been taught or suggested by Fumarolo’s voice and data communications. *Id.* (citing Ex. 1005, 5:53–6:5, 7:46–51, 14:2–6, 15:48–54, 16:31–17:6). Petitioner argues VOIP communication is merely a special type of voice and data communications. *Id.* at 72 (citing Ex. 1003 ¶ 206). Exchanging Fumarolo’s voice and data communications with Liu’s VOIP communication, Petitioner

argues, “represents no more than ‘the predictable use of prior art elements according to their established functions,’” which is “obvious as a matter of law.” *Id.* (citing *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1245 (Fed. Cir. 2010) (quoting *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007))).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to claim 27. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, Lazaridis, and Liu teaches or suggests the recited limitations of dependent claim 27 because in combination with the teachings of Fumarolo, Sheha, and Lazaridis, Liu teaches a network 30 comprises a packet-switched network, such as the Internet, supporting VoIP.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claim 27 of the ’055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, Lazaridis, and Liu.

*K. Claim 37 - Obviousness over Fumarolo, Sheha, Lazaridis, and Van Bosch*

Claim 37 depends from claim 30, which depends from claim 28.

Taken together, claims 37 and 30 read as follows:

37. The system of claim 30, wherein the video comprises a video clip or a video transmission;

30. The system of claim 28 wherein the data comprises a text message, an image, a video, or a command to cause the second devices corresponding to the selected symbols to convert text to speech.

Petitioner first points out that claim 37 specifies one of the types of data in claim 30—namely, the video—comprises “a video clip or a video transmission.” Pet. 72. Petitioner argues the specific types of “video” recited in claim 37 do not add any patentable weight because “video” is an

optional form of data as recited in claim 30. *Id.* Petitioner points out that AGIS's district court infringement contentions for claim 37 merely refer back to the contentions for claim 30, which, Petitioner argues, is a tacit acknowledgement that there is no difference in claim scope between claims 30 and 37. *Id.* (citing Ex. 1010, B-491). Thus, Petitioner argues, Fumarolo, Sheha, and Lazaridis render claim 37 obvious for the same reasons as claim 30.

Nonetheless, Petitioner argues, even if given patentable weight, claim 37 is still obvious in view of Fumarolo, Sheha, Lazaridis, and Van Bosch. *Id.* at 73 (citing Ex. 1003 ¶¶ 216–217). Petitioner argues Van Bosch teaches a “system and procedure for posting and receiving location-based messages in a wireless communication based network.” *Id.* (quoting Ex. 1008, Abs.). These location-based messages, Petitioner argues, “can be textual, audio, *video*, or pictorial messages . . . .” *Id.* (quoting Ex. 1008, Abs.). Petitioner argues a person of ordinary skill in the art would have been motivated to combine Van Bosch's location-based messaging with Fumarolo's display-based terminals to provide location-relevant information to first responders in an emergency situation. *Id.* (citing Ex. 1003 ¶ 214).

Moreover, Petitioner argues, “the transmission of video (as required by this claim) is nothing but an obvious design choice that would have been taught or suggested by the transmission of data (as disclosed in Fumarolo).” *Id.* (citing Ex. 1005, 5:53–6:5, 7:46–51, 14:2–6, 15:4748–54, 16:31–17:6). Petitioner argues video transmission is merely a special type of data transmission. *Id.* (citing Ex. 1003 ¶¶ 212–213). Exchanging Fumarolo's data transmissions with Van Bosch's video transmissions, Petitioner argues, “represents no more than ‘the predictable use of prior art elements according to their established functions,’” which is “obvious as a matter of law.” *Id.* at

IPR2018-01080

Patent 9,408,055 B2

73–74 (citing *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1245 (Fed. Cir. 2010) (quoting *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007))).

Patent Owner does not respond specifically to Petitioner’s evidence and arguments with respect to claim 37. *See* PO Resp. 10–37.

Petitioner has shown persuasively that the combination of Fumarolo, Sheha, Lazaridis, and Van Bosch teaches or suggests the recited limitations of dependent claim 37 because in combination with the teachings of Fumarolo, Sheha, and Lazaridis, Van Bosch teaches a system and procedure for posting and receiving location-based messages in a wireless communication based network where such location-based messages can be video or pictorial messages.

We find Petitioner has demonstrated, by a preponderance of the evidence, that dependent claim 37 of the ’055 patent is unpatentable under § 103 over the combined teachings of Fumarolo, Sheha, Lazaridis, and Van Bosch.

### III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 2, 5–7, 14, 15, 17, 21–25, 27, 28, 30, 32–34, 36, 37, 40–43, 45, 49, and 54 of the ’055 patent are unpatentable on the bases set forth in the following table.<sup>8</sup>

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<sup>8</sup> Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Final Decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent

<b>Claims</b>	<b>35 U.S.C. §</b>	<b>References</b>	<b>Claims Shown Unpatentable</b>	<b>Claims Not shown Unpatentable</b>
1, 2, 5, 6, 7, 14, 15, 17, 21–25, 28, 30, 32–34, 36, 40–43, 45, 49, 54	103	Fumarolo, Sheha, Lazaridis	1, 2, 5–7, 14, 15, 17, 21–25, 28, 30, 32–34, 36, 40–43, 45, 49, 54	
27	103	Fumarolo, Sheha, Lazaridis, Liu	27	
37	103	Fumarolo, Sheha, Lazaridis, Van Bosch	37	
<b>Overall Outcome</b>			1, 2, 5–7, 14, 15, 17, 21–25, 27, 28, 30, 32–34, 36, 37, 40–43, 45, 49, 54	

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Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

#### IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 2, 5–7, 14, 15, 17, 21–25, 27, 28, 30, 32–34, 36, 37, 40–43, 45, 49, and 54 of U.S. Patent No. 9,408,055 B2 are *unpatentable*; and

FURTHER ORDERED that because this is a Final Written Decision, any party to the proceeding seeking judicial review of this Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2018-01080  
Patent 9,408,055 B2

PETITIONER:

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Jonathan Tuminaro

[jtuminar-PTAB@sternekessler.com](mailto:jtuminar-PTAB@sternekessler.com)

Robert E. Sokohl

[rsokohl-PTAB@sternekessler.com](mailto:rsokohl-PTAB@sternekessler.com)

Dohm Chankong

[dchankong-PTAB@sternekessler.com](mailto:dchankong-PTAB@sternekessler.com)

PATENT OWNER:

BROWN RUDNICK LLP

Vincent Rubino

[vrubino@brownrudnick.com](mailto:vrubino@brownrudnick.com)

Peter Lambrianakos

[plambrianakos@brownrudnick.com](mailto:plambrianakos@brownrudnick.com)

Enrique W. Iturrald

[eiturralde@brownrudnick.com](mailto:eiturralde@brownrudnick.com)

**CERTIFICATE OF FILING**

Pursuant to 37 C.F.R. §§ 90.2(a)(1) and 104.2(b), the undersigned hereby certifies that on February 3, 2020, the original of the foregoing Notice of Appeal was filed with the Director of the United States Patent and Trademark Office by hand-delivery, at the following address:

Director of the United States Patent and Trademark Office  
c/o Office of General Counsel  
10B20, Madison Building East  
600 Dulany Street  
Alexandria, VA 22314-5793

In addition, pursuant to 37 C.F.R. § 90.2(a)(1) and 37 C.F.R. §42.6(b), the undersigned certifies that on February 3, 2020, a copy of the foregoing Notice of Appeal was filed electronically with the Board through the Board's Patent Review Processing System.

In addition, pursuant to 37 C.F.R. § 90.2(a)(2) and Federal Circuit Rule 15(a)(1), the undersigned certifies that on January 21, 2020, the requisite fee for the appeal and a true and correct copy of the foregoing Notice of Appeal were electronically filed with the Clerk of Court of the United States Court of Appeals for the Federal Circuit at the following address <http://ecf.cafc.uscourts.gov>.

Dated: February 3, 2020

Respectfully Submitted,

By: *Vincent J. Rubino, III*  
Vincent J. Rubino, III (Reg. No. 68,594)  
Lead Counsel for Patent Owner  
**BROWN RUDNICK LLP**  
7 Times Square  
New York, NY 10036  
Telephone: 212-209-4800  
Facsimile: 212-209-4801  
Email: vrubino@brownrudnick.com

**CERTIFICATE OF SERVICE**

Pursuant to 37 CFR § 42.6(e)(4) and 37 C.F.R. § 90.2(a)(3)(ii), the undersigned certifies that on January 21, 2020, a true and correct copy of the foregoing the PATENT OWNER’S NOTICE OF APPEAL was served **via email** on the Petitioner by serving the correspondence email addresses of record below:

Robert E. Sokohl (Reg. No. 36,013)  
Ryan C. Richardson (Reg. No. 67,254)  
Dohm Chankong (Reg. No. 70,524)  
**STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C.**  
1100 New York Avenue, N.W.  
Washington, D.C., 20005,  
Phone: (202) 371-2600  
Facsimile: (202) 371-2540  
rsokohl-PTAB@sternekessler.com  
rrichardsonPTAB@sternekessler.com  
dchankong-PTAB@sternekessler.com  
PTAB@sternekessler.com

February 3, 2020

By: */Vincent J. Rubino, III/*  
Vincent J. Rubino, III (Reg. No. 68,594)  
Lead Counsel for Patent Owner  
**BROWN RUDNICK LLP**  
7 Times Square  
New York, NY 10036  
Telephone: 212-209-4800  
Facsimile: 212-209-4801  
Email: vrubino@brownrudnick.com