UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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CARBYNE, INC.

Petitioner,

v.

TRITECH SOFTWARE SYSTEMS,

Patent Owner.

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Case No. IPR2025-00959

U.S. Reissued Patent No. RE50,016

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# PETITION FOR *INTER PARTES* REVIEW

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## LISTING OF EXHIBITS

| Exhibit | Description |
|---|---|
| 1001 | U.S. Reissued Patent No. RE50,016 to Leggett et al. |
| 1002 | File History of U.S. Reissued Patent No. RE50,016 to Leggett et al. |
| 1003 | File History of U.S. Patent No. 9,301,117 to Leggett et al. |
| 1004 | Declaration of Gerald Christensen |
| 1005 | U.S. Patent Pub. 2002/0197977 A1 to Brooks ("Brooks") |
| 1006 | Hore, "MRMap and SARLOC – Mobile 'phone Geolocation for Search and Rescue," Proceedings of the GIS Research UK 20th Annual Conference, pp. 7-10 (April 2012) ("SARLOC") |
| 1007 | U.S. Patent Pub. 2010/0261492 A1 to Salafia et al. ("Salafia") |
| 1008 | U.S. Patent Pub. 2012/0190384 A1 to Marr et al. ("Marr") |
| 1009 | U.S. Patent No. 9,237,431 B2 to Wang et al. ("Wang") |
| 1010 | U.S. Patent Pub. 2010/0093306 A1 to Hwang et al. ("Hwang") |
| 1011 | U.S. Patent Pub. 2012/0149324 A1 to Daly ("Daly") |
| 1012 | March 21, 2025 Declaration of Russel L. Hore |
| 1013 | Cover Letter and Library Stamped Copy of *GISRUK 2012: Proceedings of the 20th Annual Conference* |
| 1014 | Cover Letter and Library Stamped Copy of *Mountain Rescue*, Issue 36 (April 2011) |
| 1015 | Cover Letter and Library Stamped Copy of *Mountain Rescue*, Issue 41 (July 2012) |
| 1016 | Cover Letter and Library Stamped Copy of *Mountain Rescue*, Issue 42 (October 2012) |

## I. INTRODUCTION

Petitioner Carbyne, Inc respectfully requests IPR of 1, 5-9, 13-17, and 25-27 of U.S. Reissued Patent RE50,016 ("the '016 patent") assigned to Tritech Software Systems ("Patent Owner").

The '016 patent relates to a system for managing communications during an emergency call. The patent explains that in prior art systems, a call dispatcher / handler collected information from the caller verbally over the phone. Collected information included the caller's location, the nature of the emergency, and the like. Rather than relying exclusively on verbal phone communications like certain prior art systems, the '016 patent's system also allows the dispatcher to send text messages to the caller. The '016 patent explains that these messages can request location information, provide the caller with instructions, or obtain other information relevant to the caller's emergency.

The prior art, however, is replete with examples of emergency communication systems that allow for text messaging between a dispatcher and a caller. Thus, to obtain allowance, Patent Owner was forced to limit all its claims to systems that transmit one specific type of text message: a message including a URL directing a caller's phone to a website that collects GPS location information from the phone. The collected location information can then be provided back to the emergency dispatcher / handler.



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There was nothing non-obvious about this type of emergency communication system. Systems that send text messages with URLs that facilitate GPS location collection were well-known in the art. This petition relies on four exemplary references showing this: (1) Brooks (Ex. 1005), (2) the SARLOC article (Ex. 1006), (3) Salafia (Ex. 1007), and (4) Marr (Ex. 1008).

***Ground 1*** explains why Brooks and SARLOC together render many of the ’016 patent’s claims obvious. Neither reference was considered during either original prosecution or reissue of the ’016 patent. Just like the ’016 patent, Brooks teaches a system for managing communications during an emergency call. The system captures incoming voice calls. But rather than limiting the dispatcher to verbal communication, the system also allows the dispatcher to transmit text messages to the caller. The texts can request information about the caller’s emergency the GPS location of the caller. While Brooks does not mention that the texts its system sends to callers include URLs directing the caller to a website that collects this GPS location information, SARLOC does.

The SARLOC article discusses a system meant to assist emergency rescue personnel in locating lost callers. To do so, a dispatcher sends the caller a text message with a URL. The URL directs the caller’s phone to a website that collects the phone’s GPS location. The collected GPS location is relayed back to the dispatcher for display on a map. This is ***exactly*** the type of text message that the

’016 patent’s claims require.

***Ground 2*** explains why even the prior art identified on the face of the ’016 patent—including Salafia and Marr—teaches the claimed type of emergency communication system and URL-containing text message. If this art had been considered in its entirety as it was required to be during prosecution, then the ’016 patent would never have been allowed in the first place.

Salafia teaches a system that receives emergency calls and then allows the call dispatcher / handler to communicate with the caller via text message. Patent Owner did not dispute during either original prosecution or the reissue proceeding that Salafia satisfies the majority of the ’016 patent’s claim limitations. Rather, Patent Owner only argued that Salafia fails to disclose the specific type of text required by the claims (text messages with URLs that direct caller phones to websites that collect GPS location information).

While the Examiner agreed with Patent Owner and allowed the claims, this should not have ended the analysis. First, Salafia ***does*** teach both (1) that the texts its system sends can include URLs and (2) that its system can obtain phone GPS location information. The Examiner did not appear to appreciate this. Second, another prior art reference—Marr—unambiguously teaches the specific type of text the claims here require. Indeed, Patent Owner should be aware of this because Petitioner informed Patent Owner of both the Marr reference and its pertinence to

the claims before Patent Owner sought reissue. According to Marr, a service dispatcher receives a call from a caller in need of assistance. The dispatcher can then send a text message with a URL to the caller. When the caller accesses the URL, the caller's phone is directed to a website that collects the GPS location of the phone and relays it back to the dispatcher. There is ***no difference*** between this and the '016 patent's claims.

So, the '016 patent contributed nothing to the art. Emergency call systems allowing text communication were well known. And it was also well-known that these systems send the specific type of text message the '016 patent's claims require: one with a URL to obtain GPS location information. Petitioner respectfully requests institution of IPR and a finding that the claims are unpatentable.

## II. MANDATORY NOTICES

### A. Real Party-in-Interest

Petitioner Carbyne, Inc. and its corporate parent Carbyne Ltd. are the real parties-in-interest.

### B. Related Matters

The '016 patent is currently at issue in *CentralSquare Technologies LLC v. Carbyne, Inc. et al.*, 1-24-cv-01497 (WDTX), which was filed on December 4, 2024. CentralSquare Technologies LLC purports to have an "exclusive license" to the '016 patent from Patent Owner.

### C. Counsel, Service, and Fee Information

Petitioner designates the following counsel:

| Lead Counsel | Back-Up Counsel |
|---|---|
| K. Patrick Herman<br>Registration No. 75,018<br>(P52PTABDocket@orrick.com)<br><br>Postal & Hand-Delivery Address:<br>Orrick, Herrington & Sutcliffe LLP<br>51 West 52nd Street<br>New York, NY 10019<br>T: 212-506-3596 | Alyssa Caridis<br>Registration No. 57,545<br>(A8CPTABDocket@orrick.com)<br><br>Postal & Hand-Delivery Address:<br>Orrick, Herrington & Sutcliffe LLP<br>355 South Grand Ave., Suite 2700<br>Los Angeles, CA 90071<br>T: 213-629-2020 |

Petitioner consents to service by electronic mail at the addresses listed in the table above. Petitioner's Power of Attorney is attached.

The USPTO is authorized to charge the filing fee and any other fees incurred by Petitioner to the deposit account of Orrick, Herrington, & Sutcliffe LLP: 15-0665.

## III. REQUIREMENTS FOR IPR

### A. Grounds for Standing

Petitioner certifies that the '016 patent is available for IPR, and that Petitioner is not barred or estopped from requesting this IPR.

### B. Identification of Challenge and Statement of Precise Relief Requested

Petitioner requests IPR of claims 1, 5-9, 13-17, and 25- 27. This petition discusses claim construction, explains why the claims are unpatentable, provides details regarding where the various claim limitations are found in the prior art, and

is supported by the accompanying Declaration of Gerald Christensen (Ex. 1004), a leading expert in the emergency communication field.

The ’016 patent was filed January 27, 2023 and is a reissue of an earlier patent—U.S. Patent No. 9,301,117—that was itself filed on August 21, 2013. Ex. 1001, Cover.

Petitioner relies on the following references: (1) Brooks (Ex. 1005), (2) SARLOC (Ex. 1006), (3) Salafia (Ex. 1007), and (4) Marr (Ex. 1008). These references are all prior art. *See* Section VIII.

Petitioner challenges the claims on the following grounds:

**Ground 1:** Claims 1, 5-9, and 13-16 are obvious over Brooks and SARLOC;

**Ground 2:** Claims 1, 5-9, 13-17, and 25-27 are obvious over Salafia and Marr; and

**Ground 3:** Claims 1, 5-9, 13-17, and 25-27 are obvious over Brooks, SARLOC, and Salafia.

## IV. EXPERT TESTIMONY ACCOMPANYING THE PETITION

Petitioner is cognizant of the Board’s recent guidance that “extensive reliance on expert testimony … may suggest that the questions are better resolved for an Article III court.” https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management (“April 25, 2025 Guidance”). The Board has also noted that “it is most helpful if an expert is providing focused testimony.” *Id.* Petitioner submits that the ’016 patent—and the prior art at issue here—is sufficiently clear

and understandable on their own for a POSITA to conclude that the Challenged Claims are obvious.

Even so, Petitioner believes that expert testimony may be useful to provide helpful context on three discrete issues. Specifically, expert testimony may help explain, from the perspective of a POSITA, (1) why Brooks would have been understood to include the various claimed "module[s]" (*see* Ex. 1004, ¶¶ 126-161, 359-378), (2) the reasons for combining references (*id.*, ¶¶ 190-200 (Brooks and SARLOC), ¶¶ 331-355 (Salafia and Mar)), and (3) the reasons why Marr would be understood to be analogous art (*id.*, ¶¶ 325-330). This focused expert testimony, while not absolutely necessary, nonetheless confirms the obviousness of the claimed subject matter.

Out of an abundance of caution, Petitioner also provides a comprehensive expert declaration confirming that the Petition has properly read and applied the prior art across all elements. Petitioner notes that binding Federal Circuit precedent appears to require (or at least strongly favor) such a declaration. For instance, the Federal Circuit has explained that it is "reasonable for the Board to accept" one party's "expert testimony over" the other party's "bare attorney argument." *Wasica Finance GmbH v. Continental Auto Sys.*, 853 F.3d 1272, 1284 (Fed. Cir. 2017). In view of this, if the Petition is not accompanied by comprehensive expert testimony, Patent Owner may submit its own expert testimony and argue that this testimony—

even if tenuous and poorly supported by the prior art—trumps whatever the Petition says. Next, the Federal Circuit has explained that a "[p]etitioner may not submit new evidence or argument in reply that it could have presented earlier." *See VidStream LLC v. Twitter, Inc.*, 981 F.3d 1060, 1064 (Fed. Cir. 2020). Thus, if Petitioner does not address all claim limitations with expert testimony now, it is unclear if it will be able to do so as the IPR proceeds. This is particularly relevant here—this Petition is being submitted before even responsive pleadings are filed in the pending litigation. As such, Petitioner has no way to anticipate what limitations Patent Owner may challenge. Without Petitioner's own expert testimony, the Board may be deprived of relevant testimony to assess the technical accuracy of Patent Owner's response arguments.

Finally, Patent Owner may attempt to submit its own expert declaration in advance of institution in an effort to show that there is the type of "dispute[] between experts" referenced by the Board's guidance. *See* April 25, 2025 Guidance. Petitioner submits that its expert declaration—which addresses the art's clear disclosure and explains how a POSITA would have interpreted that art—shows that any such dispute would be artificial, entirely manufactured, and not "reasonable." Put another way, the only ***reasonable*** way to interpret the prior art is in the manner discussed in the Petition and by Petitioner's expert.

## V. THE ’016 PATENT

### A. <u>Overview</u>

The ’016 patent relates to a system and method for communication during an emergency. *See* Ex. 1001, Abstract. The patent explains that “[c]onventionally, emergency phone calls are answered by an emergency call center, such as e.g., a public safety answering point (PSAP).” *Id.*, 1:28-30. An “operator” at this call center—“also referred to as dispatchers”—“may … attempt to gather information” from the caller verbally, including “the name of the caller,” “nature of the emergency,” “the location of the emergency” and so on. *Id.*, 1:30-36.

In contrast to voice-only systems, the ’016 patent “provid[es], to emergency operators, communication through textual messages with callers using wireless mobile devices.” Ex. 1001, 1:23-25. According to the patent, the “system may be hosted by and/or implemented on a server.” *Id.*, 1:55-56. Communication with the system may occur via “emergency communication networks, wired telephone networks, wireless telephone networks, cellular networks, the internet, and/or one or more other (communication) networks.” *Id.*, 1:62-67. “Users may access the system via landlines, wired telephones, wireless telephones, smartphones, mobile devices” or the like. *Id.*, 2:9-17. These client devices can send and receive “textual messages” like SMS or MMS messages, “access Internet addresses” or “URL addresses,” and “obtain[] … global positioning system (GPS) information.” *Id.*, 2:17-24, 3:18-37.

In operation, incoming calls to the system are received by a "call reception module." *Id.*, 2:46-49. A "presentation module" "present[s] incoming emergency voice calls to emergency operators" and includes a "user interface" with various "user-selectable options…." *Id.*, 4:6-20. An "outgoing message module" generates "outgoing messages for transmission to telephones and/or devices." *Id.*, 6:26-29. Messages can "include helpful information" or "request … the caller to provide information." *Id.*, 6:33-45. Outgoing messages are "transmit[ed]" by the system to calling devices using a "transmission module." *Id.*, 3:63-66. "[A] caller may provide requested information by replying to the outgoing textual message transmitted by the system…." *Id.*, 6:46-48. A "web-hosting module" allows the system to "query devices (including but not limited to wireless mobile devices) for geolocation information." *Id.*, 4:28-35. As part of this, the system can send a "textual message that includes a … URL … link to" a "web resource" stored by the web-hosting module to a "particular wireless mobile device." *Id.*, 4:34-40. When the device accesses the URL, "[g]eolocation information may be transferred from the particular wireless mobile device to the web resources" and then "shared" with the other "components of the system" such that it becomes "accessible to emergency operators." *Id.*, 4:37-47.



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### B. **Prosecution History**

The ’016 patent is a reissue of U.S. Patent No. 9,301,117 (“the ’117 patent”). *See* Ex. 1001, Cover.

During prosecution of the ’117 patent, the Examiner rejected the broadest pending claims as anticipated by the same Salafia reference discussed herein. *See* Ex. 1002, 128-134. Other claims were rejected as obvious over Salafia and other art. *Id.*, 134-141. Some dependent claims—including one requiring a “web-hosting module” that “quer[ies] wireless mobile devices for location information”—were indicated to be allowable and were not rejected. *Id.*, 141.

Patent Owner responded by re-writing the allowable claims in independent form. *See id.*, 176-184. This led to allowance. *Id.*, 188. The Examiner noted that while Salafia teaches a system that allows “emergency operators” to “communicat[e] through textual messages,” it somehow lacked the required “outgoing message module.” *Id.*, 194-195. The Examiner also noted that Salafia purportedly also did not “share, responsive to receipt of location information, received location information with the presentation module.” *Id.*

Subsequent to the issuance of the ’117 patent, Patent Owner sent Petitioner correspondence alleging infringement of the patent’s claims. Petitioner responded by informing Patent Owner that its claims covered well-known prior art concepts. Petitioner identified the Marr reference to Patent Owner and noted that Marr teaches

the very subject matter identified during prosecution as purportedly missing from Salafia (GPS location information collected by a website and shared with a dispatcher).

Patent Owner then sought reissue of the ’117 patent on January 27, 2023. According to Patent Owner, reissue was required because the ’117 patent was “at least party inoperative or invalid” because it did not include “narrow claims” like “new claim 17” that required “a first interface element and a second interface element.” Ex. 1003, 30. The reissue application was accompanied with an Information Disclosure Statement identifying both the references at issue during original prosecution and Marr. *See id.*, 39.

The Examiner responded to this reissue filing by explaining that, in her view, all the claim limitations requiring a “call reception module,” “presentation module,” “outgoing message module,” and “transmission module” were means-plus-function limitations. *See id.*, 114-122. The Examiner then rejected most of the claims as obvious over Salafia and a collection of other, secondary references. *Id.*, 122-134. Marr was not cited or discussed.

An interview was then conducted in February 2024. During the interview, Patent Owner and the Examiner apparently “discussed” “Salafia” and “agreed that Salafia does not teach … web resources configured to query wireless mobile devices

for location information." *Id.*, 143. Even though ***Marr teaches this very subject matter***, there is no indication that Marr was mentioned during the interview.

Patent Owner then formally responded to the rejection. Patent Owner began by arguing that the "module" claim limitations "connote structure" and thus are not means-plus-function limitations. *Id.*, 156-169. Patent Owner also explained that, in its view, the "modules" are "computer program modules that are executed by processors, rather than a generic description for software or hardware." *Id.*, 168-169. Patent Owner then addressed obviousness. According to Patent Owner, Salafia does not teach (1) querying wireless mobile devices for location information, (2) sending outgoing textual messages with URL links to web resources, (3) or sharing received location information with a presentation module. *Id.*, 170-172. Patent Owner also characterized Salafia as limited to querying an "automatic location information (ALI) database to determine location," only employing "email templates" that "instruct[] the caller to provide images of e.g., a location of an incident," and only displaying the location of other phones—not the caller's phone—in the area of the caller. *Id.*, 170-173. Patent Owner then alleged that none of the other references cited by the Examiner—"Quan, Ray, Huang, Wijayanathan, Wang, Eitel, and Lieu"—include any of these purportedly missing teachings. *Id.*, 173. ***Marr was once again not mentioned even though Patent Owner was aware—***

***because it had been informed of this by Petitioner*—*that Marr teaches what was purportedly missing from the other prior art of record***.

After this, the claims were allowed without further rejection. *Id.*, 194-202. In allowing the claims, the Examiner noted that "[t]he prior art of record" did not teach the claimed outgoing text messages with URLs, web-resources that query mobile devices for location information, or sharing received location information with the presentation module. *Id.*, 201. As was the case throughout prosecution, the Examiner did not mention Marr or appear to recognize that it teaches the subject matter referenced in the notice of allowance.

## VI. CLAIM CONSTRUCTION

The Board applies the same *Phillips* claim construction standard used by district courts. *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*). For purposes of this Petition only, Petitioner accepts Patent Owner's representation during reissue that the '016 patent claim limitations requiring a "call reception module," "presentation module," "outgoing message module," and "transmission module" are not means-plus-function limitations and instead require only "computer program modules that are executed by processors, rather than a generic description for software or hardware." Ex. 1003, 156-169. In view of this representation, Petitioner submits that these terms, and the other terms of the '016 patent's claims,

do not require further construction and can be afforded their plain and ordinary meaning. *See* Ex. 1004, ¶ 79.

## VII. LEVEL OF ORDINARY SKILL IN THE ART

A POSITA in the field of the ’016 patent would have had a degree in computer science or computer engineering, along with 2 years of professional experience working with telecommunications systems, or an equivalent level of skill, knowledge, and experience. Ex. 1004, ¶ 43. This POSITA would have been aware of and generally knowledgeable about the standard features and functionality of emergency calling, geolocation, and text messaging systems. *Id*.

## VIII. PRIOR ART OVERVIEW

### A. <u>Brooks</u>

Brooks (Ex. 1004) issued December 26, 2002. Brooks, Cover. It is prior art under § 102(a)(1).

Brooks teaches an “enhanced emergency call system.” *Id.*, [0005]. The system allows an “emergency dispatcher” to “capture and control” an incoming call from a mobile device, and “also use messaging services to communicate with the caller.” *Id.* The dispatcher can send the caller “questions” via text message, or “query the user to pinpoint the location of the user for rescue purposes.” *Id.*, [0021]-[0023]. Mobile device location can be “accomplished” via “global positioning.” *Id.*, [0023]. Figure 3 provides an overview of the call (and later texting) process performed by Brooks:

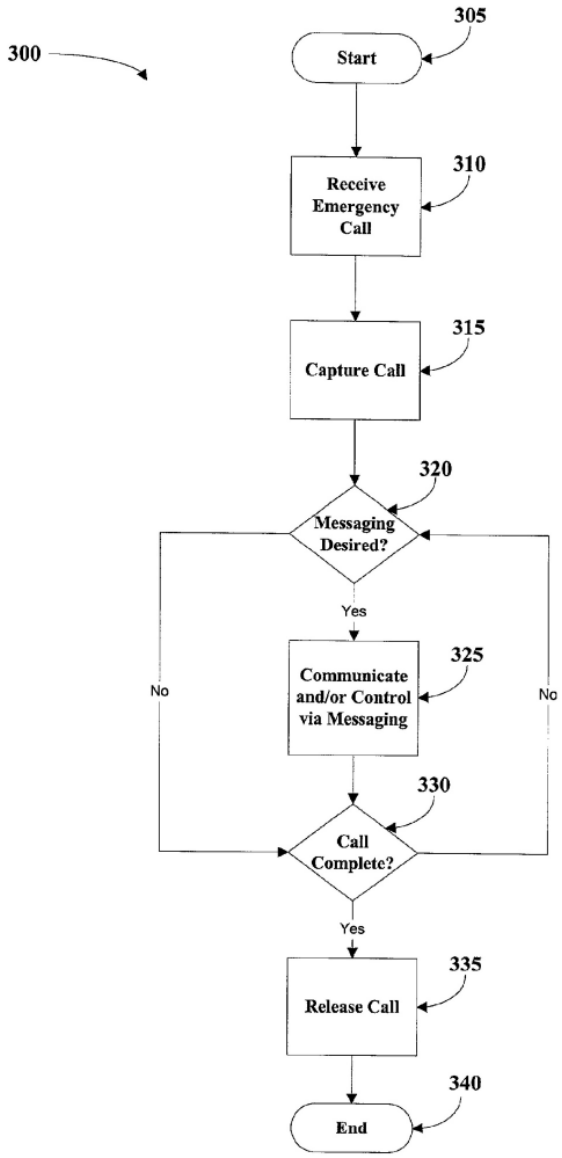



**Figure 3**

*Id.*, Fig. 3.

### B. <u>SARLOC</u>

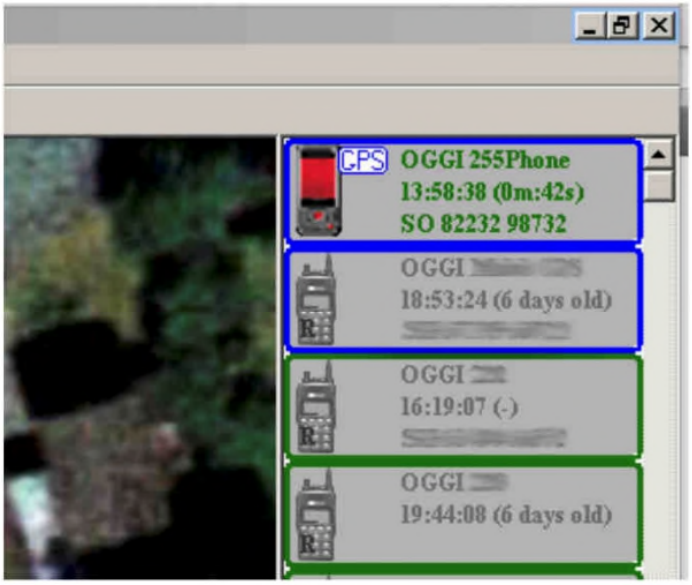
SARLOC (Ex. 1005) is an article authored by Russell L. Hore for the GISRUK (or "Geographical Information Science Research UK") 2012 conference. *See* Ex. 1012, ¶¶ 7-8. The conference occurred from April 11-13, 2012 at Lancaster University. *Id.*, ¶ 13. The conference was attended by researchers and industry

players in the spatial analytics and geographic data science fields. *Id.*, ¶¶ 9-11. The SARLOC article was included in the complete GISRUK 2012 conference proceedings publication, which was made available for download on multiple websites immediately following the conference. *Id.*, ¶¶ 14-15. Mr. Hore also attended the conference where he showcased the work discussed in the SARLOC article, personally talking with about 40-50 conference attendees. *See id.*, ¶¶ 16-17. The GISRUK 2012 conference proceedings—including the SARLOC article it contains—was indexed and available at a library by no later than May 2012. *See* Ex. 1013. Further confirming these dates of publication, the same system discussed in the SARLOC article was discussed in published—and library cataloged—magazines in April 2011 (*see* Ex. 1014), July 2012 (*see* Ex. 1015), and October 2012 (*see* Ex. 1016). In view of either its April 2012 (at the conference and on the web) or May 2012 (in a library) date of publication, SARLOC is prior art under § 102(a)(1).

The SARLOC article discusses a "system that can be used to locate 'lost' people using the geo-location API of the web browser on many 'smartphones' without having to install any software." SARLOC, 7.[1] In operation, when rescue

[1] Page citations refer to the original pagination of the SARLOC article in the GISRUK 2012 proceedings, not the page numbers added by Petitioner.

personnel receive "calls for assistance," the caller is "sent" an "SMS message" with a "URL." *Id.*, 8. The URL directs the caller's phone to a "web page" that then "uses both PHP and JavaScript to request the 'phones location…." *Id.* This in turn causes the "API of the phone's web browser to obtain its location." *Id.* Obtained location information is "pass[ed] to a web database which can then be interrogated by" the rescue personnel and displayed graphically in a user-interface on a map:




*Id.*

### C. <u>Salafia</u>

Salafia (Ex. 1007) published October 14, 2010. Salafia, Cover. It is prior art under § 102(a)(1).

Salafia relates to a system for "call handling" during "either emergency or non-emergency related situations." *Id.*, [0002]. According to Salafia, in conventional systems, a "caller will dial 911" and "be connected to a local Public

Safety Answering Point (PSAP)." *Id.*, [0004]. At the PSAP, a call handler will talk with the caller to gather needed information. *Id.* In addition to verbal communication, Salafia's also allows the handler to send an "MMS" (or other electronic text message) to a calling "communication device." *Id.*, [0007]. The caller can respond to the text message by providing, for instance, "visual information … regarding the exact location of the caller." *Id.*, [0011]. The system can also be employed to "send information to the caller," including "instructions on how to handle a particular situation or perform a particular task, images, forms, or Uniform Resource Locators (URLs)." *Id.*, [0011].

Figure 2 provides an overview. Callers 102 contact PSAP 212 via a cellular network 222 and public switched telephone network 224. *Id.*, [0054]-[0061]. A call handler workstation 202 at the PSAP receives and manages incoming calls, and allows the call handler to generate electronic messages. *Id*, [0059]. An electronic message processing module 228 handles the transfer of outgoing messages to and the receipt of responsive messages from callers 102 through the Internet 226. *Id.*, [0062].



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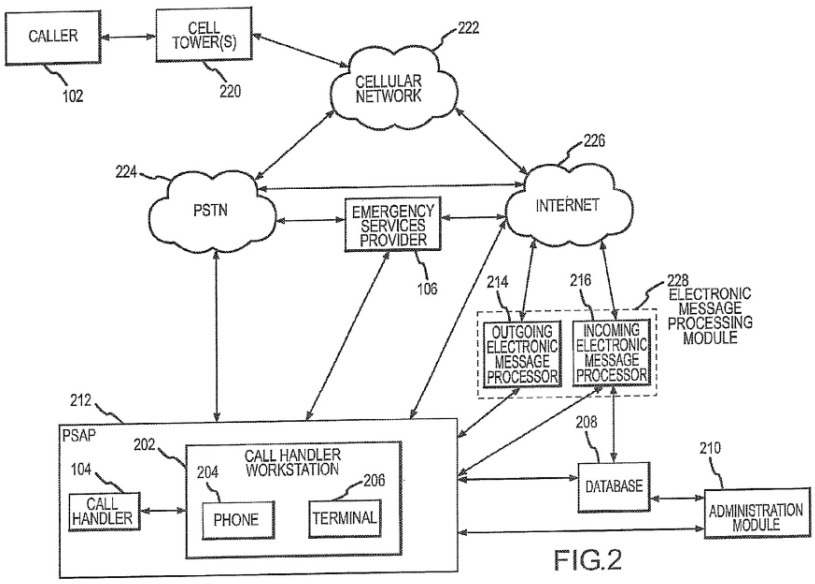

FIG.2

*Id.*, Fig. 2. The call handler interacts with the system via a "call display window 500" that displays information about the current call and provides the handler with various user-input options:

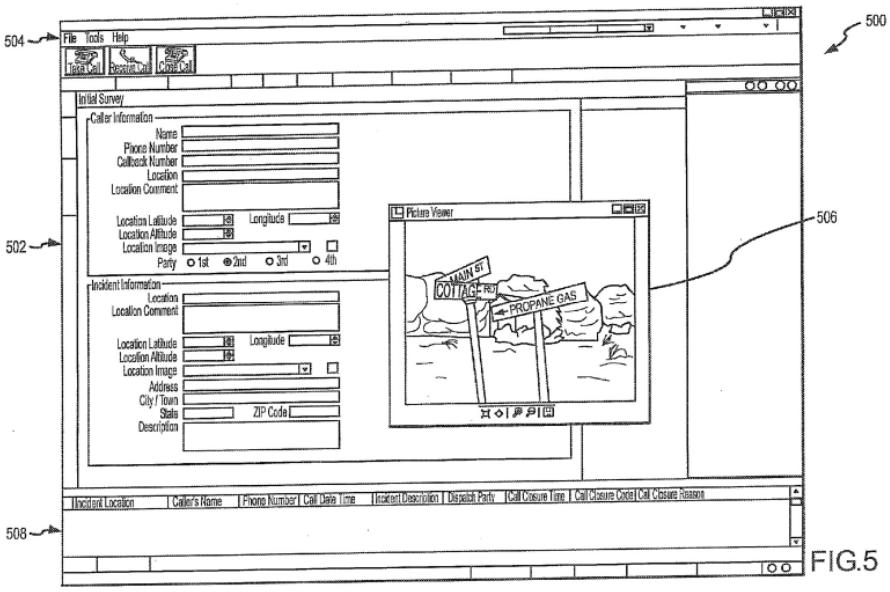

FIG.5

*Id.*, Fig. 5; *see also* [0078]-[0079].

### D. <u>Marr</u>

Marr (Ex. 1008) published July 26, 2012. Marr, Cover. It is prior art under § 102(a)(1).

Marr relates to a "method and apparatus to manage service request[s]" that "use[s] … a smart phone's ability to communicate GPS information over the internet." *Id.*, Abstract. According to Marr, "conventional" service systems employ a "phone-in process" that "relies heavily on the knowledge" of the caller "of his location." *Id.*, [0005]. Rather than relying exclusively on verbal communication, in Marr the call "dispatcher" can "provide a URL" to the customer via "SMS or other text message." *Id.*, [0037]-[0038]. The URL directs the customer's phone to a "web server" that hosts a "website" that "request[s] GPS data from the client device." *Id.*, [0040]. The obtained "GPS location" data can then be provided to the dispatcher "while the customer is" still "on the phone with the dispatcher." *Id.*, [0037].

## IX. *GROUND 1*: OBVIOUSNESS OVER BROOKS AND SARLOC

Brooks (Ex. 1005) and SARLOC (Ex. 1006), when considered in view of the knowledge of a POSITA, together renders claims 1, 5-9, and 13-16 obvious.

Again, Brooks teaches an emergency communication system that allows a dispatcher to send text messages to a caller. The texts can request GPS location information. SARLOC teaches that text messages sent by such a system can include

a URL that directs a caller's phone to a website that collects the required GPS location information.

## A. Claim-By-Claim Analysis

### 1. *Claims 1 and 9*

Claims 1 and 9 embrace the same subject matter and will be analyzed together.[2]

***[1-p] "1. A system configured to provide, to emergency operators, communication through textual messages, the system comprising:"***

***[9-p] "[9. A computer-implemented method for providing, to emergency operators, communication through textual messages, the method being performed by]"***

To the extent limiting, this is taught by both Brooks and SARLOC. Brooks relates to a system for providing "enhanced control and standardized messaging during emergency calls." Brooks, [0001]. The system allows an "emergency dispatcher" to first "capture and control the call." *Id.*, [0005]. Then, the "dispatcher may … use messaging services to communicate with the caller" for various purposes. *Id.* SARLOC similarly relates to a system intended to allow emergency personnel—in particular "Search and Rescue Teams"—to communicate with lost persons need of assistance. SARLOC, 7. To do so, the system transmits "SMS message[s]" to lost callers. *Id.*, 8; *see also* Ex. 1004, ¶¶ 117-119.

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[2] Language present only in claim 1 is underlined. Language present in only claim 9 is [bracketed]. All other language is shared.

***[1-1]/[9-1] "one or more processors configured to execute computer program modules, <u>the computer program modules</u> [the method] comprising:"***

A POSITA would have understood that Brooks and SARLOC obviously employ the claimed ***"one or more processors"*** that ***"execute computer program modules."*** Again, Brooks teaches an "enhanced emergency call system" that allows an "emergency dispatcher to capture and control the call." Brooks, [0005]. According to Brooks, this emergency call system is implemented as a "system 100" performing a "process 300." *Id.*, [0018]. This process allows an "emergency dispatcher" operating the system to "capture" calls, "activate any messaging features," "conduct a variety of communications or controls via messaging," "communicate with the mobile station," "determine" information about the caller, or "terminate the connection" with the caller. *Id.*, [0018]-[0025].

While Brooks does not state that these functions are performed by a ***"processor"*** running ***"computer program modules,"*** a POSITA would plainly have understood that this is what Brooks intended (or at the very least, would have understood that doing so would be obvious). *See* Ex. 1004, ¶¶ 120-123. At the time the '016 patent was filed, emergency call systems—like all computer systems—were routinely effectuated by processors running computer programs. *E.g.*, Ex 1006, [0010] ("emergency call handling system" that includes a "processor module"); Ex. 1009, 5:17-27 ("platform 200" for providing "emergency services" that includes "one or more controllers (or processors) 203"); Ex. 1010, [0002], [0046], Fig. 1

("[e]mergency service communication system" may include a "Public Safety Answering Point (PSAP)" with a computer "station 26"); Ex. 1011, [0002]-[0003], Fig. 1 ("public safety answering point (PSAP)" in the form of a computer). Brooks' system is no different: it obviously employs a computer with a processor to perform various functions including call control, call management, user input collection, text message generation and display, and information retrieval. *See* Ex. 1004, ¶¶ 124-125.

***[1-2]/[9-2] "<u>a call reception module configured to receive</u> [receiving] incoming emergency voice calls being placed to an emergency call center through an emergency communications network from wireless mobile devices, the incoming emergency voice calls including a first voice call placed from a first wireless mobile device;"***

According to Brooks, a "wireless communication system 100" allows "mobile stations 106"—like "cellular telephone[s]"—to transmit and receive data over a cellular network. Brooks, [0002], [0011], [0015]. The cellular telephone is the claimed ***"wireless mobile device."*** The wireless cellular network over which the cellular telephone communicates—along with its connection to the emergency dispatcher—is the claimed "***emergency communications network."*** *See* Ex. 1004, ¶¶ 126-129.

Next, Brooks' "communication system 100" is able to "receive[] an emergency call from the network." Brooks, [0018]. "An emergency call may be initiated by user on a mobile station 106 dialing 911…." *Id.* Then, "[t]he network

recognizes the emergency number and identifies the call as an emergency call." *Id.* An "emergency dispatcher" in the "communication system 100" "capture[s] the emergency call" so that communication with the caller can proceed. *Id.*, [0019]. This call may entail "voice communications." *Id.*, [0020]. The component of Brooks' system that receives—and then captures—an emergency call is the claimed ***"call reception module"*** that ***"receive incoming emergency voice calls."*** Again, as noted above, a POSITA would have considered it obvious that these components would include processors running software. *See supra* Section IX.A.[1-1]. The facility where Brooks' emergency dispatcher is located is the claimed ***"emergency call center."*** Figure 3 below shows performance of this ***"call reception module"*** functionality:

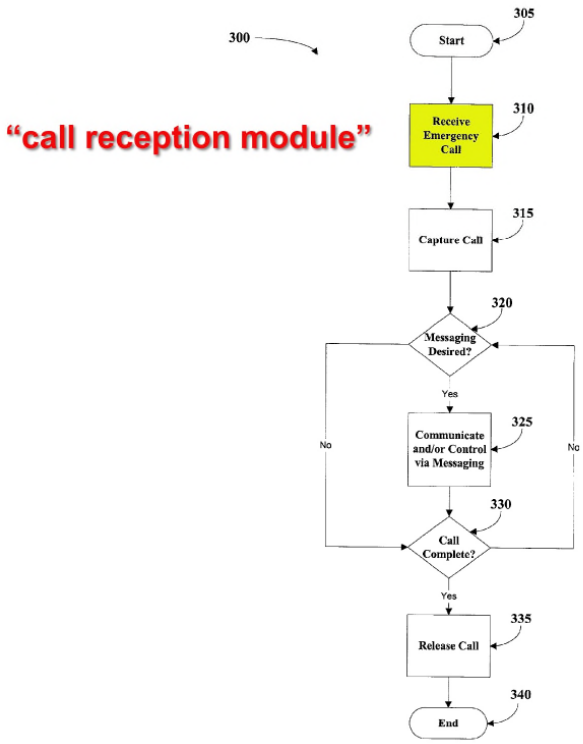


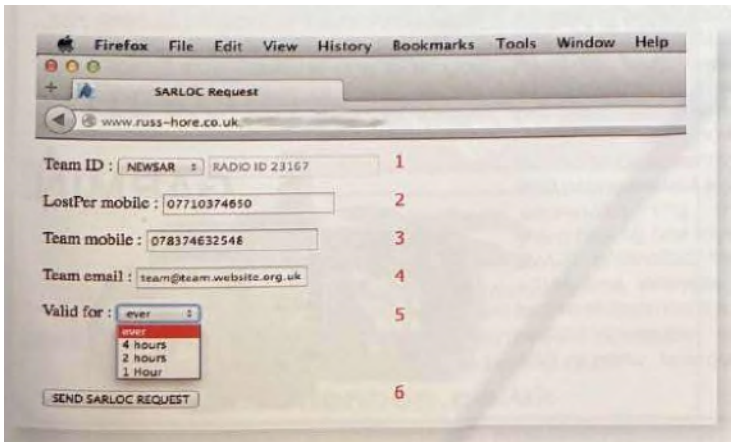

**Figure 3**

*Id.*, Fig. 3 (annotated); *see also* Ex. 1004, ¶¶ 130-136.

***[1-3]/[9-3] "<u>an outgoing message module configured to generate</u> [generating] outgoing textual messages for transmission to wireless mobile devices from which incoming emergency voice calls are received such that a first outgoing textual message is generated for transmission to the first wireless mobile device based on the first voice call;"***

Brooks' system allows an emergency "dispatcher" to "use messaging service to communicate with" an incoming emergency "caller." Brooks, [0005]. Messaging occurs via "SMS or DTMF messages" and "may be activated by … the dispatcher." *Id.*, [0020]. "The dispatcher may conduct a variety of communications or controls via messaging." *Id.*, [0021]. For instance, "the dispatcher may transmit a message causing the mobile station 106 to alert the user," "communicate with the mobile station 106," or "query the user to pinpoint the location of the user." *Id.*, [0021]-[0023]. Transmitted text messages can include "questions … that can be answered by pressing buttons on a keypad," "requesting the nature of the emergency, and whether it is safe for the user to make noise," or "obtain[ing] information such as 'Is there a burglar in the house now?'….." *Id.*, [0022].

Other prior art—including a magazine article discussing SARLOC—provides an example of how a POSITA would have understood Brooks to operate. In particular, a dispatcher is provided with an "interface" (and background software modules) to customize, generate, and send an appropriate text messages to a caller. *See* Ex. 1016, 59. An example of such an interface is shown below:




*Id.*; *see also* Ex. 1004, ¶¶ 137-143.

The component of Brooks' system that allows the dispatcher to generate these different text messages is the claimed ***"outgoing message module."*** As explained, this component generates—at the dispatcher's instruction—a variety of different messages requesting information from the emergency caller. A POSITA would have recognized (or at least found it obvious) that the component would include a processor running software (for instance, the dispatcher would employ software running on a computer or workstation to generate text messages). *See supra* Section IX.A.1.[1-1]. The generated messages are the claimed ***"outgoing textual messages"*** that are ***"generated for transmission to the first wireless mobile device."*** Moreover, because text messages are generated only after Brooks' system "activate[s]" "[m]essaging" in connection with a particular incoming emergency call (*id.*, [0019], [0020], Fig. 3), the messages are ***"based on the first voice call."*** Brooks' ***"outgoing message module"*** functionality is shown in Figure 3 below:

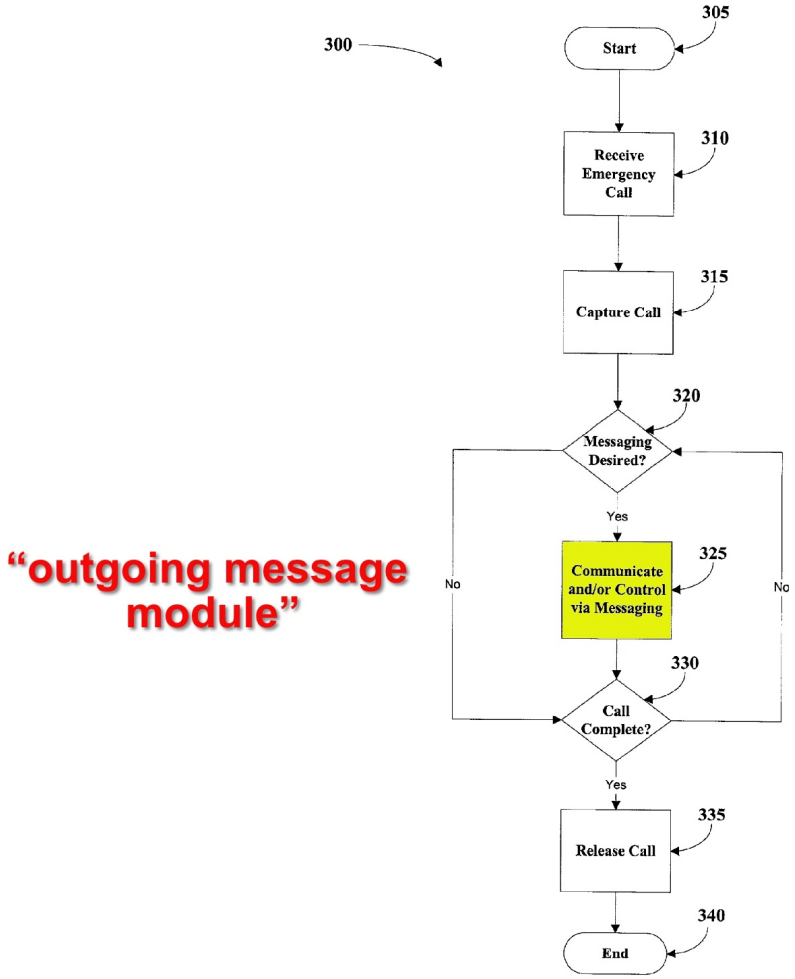



**Figure 3**

*Id.*, Fig. 3 (annotated); *see also* Ex. 1004, ¶¶ 142-145.

***[1-4]/[9-4] "<u>a transmission module configured to transmit</u> [transmitting] the outgoing textual messages to the appropriate wireless mobile devices through a second communications network that is different than the emergency communications network such that the first outgoing textual message is transmitted to the first wireless mobile device through the second communications network; [wherein the first outgoing textual message includes a link to web resources;]"***

This is taught by Brooks and SARLOC. Brooks explains that an "application residing on a mobile network element, such as a message center" handles the transfer of "SMS (short message service)" messages directed to calling mobile devices.

Brooks, [0004]. This message center facilitating the transfer of SMS message to mobile devices (like cellular telephones) is the claimed ***"transmission module."*** *See* Ex. 1004, ¶¶ 146-147.

Next, Brooks' system allows for communications over at least two different types of networks: a traditional cellular network and the "Internet." Brooks, [0011]. This allows for mobile devices to both engage in "voice communications" and transmit/receive "SMS … messages. *Id.*, [0020]; *see also* [0014] (referencing both "voice" and "data" communications). Voice communications involve the use of "cell 108" managed by a "base station 104." *Id.*, [0011]. SMS messages employ other, different network infrastructure, including "a message center." *Id.*, [0004]. Relatedly, Brooks explains that "[o]ne technique used by the mobile station 106 to interface with the wireless communication system is the Wireless Application Protocol (WAP)." *Id.*, [0012]. This allows messages to be transmitted to a mobile device in the form of "multiple WEB pages…." *Id.* "The use of WAP along with SMS provides on technique for communication of short messages to the mobile station 106." *Id.*

Given all this, a POSITA would have understood that Brooks transmits ***"textual messages"*** to mobile devices ***"through a second communication network that is different than the emergency communications network."*** Again, Brooks ***"emergency communications network"*** is the traditional cellular network with cells

and network hubs that allows for voice communication. Its ***"second communication network"*** is the additional, different network infrastructure, such as the Internet and a message center, that allows for the transmission of textual messages in the form of web pages or SMS messages. *See* Ex. 1004, ¶¶ 148-151.

The prior art's teaching of the final requirement added to this limit by claim 9—"***wherein the first outgoing textual message includes a link to web resources"***—is discussed below when addressing limit [1-6]. *See infra* Section IX.A.1.[1-6].

***[1-5]/[9-5] "<u>a presentation module configured to present</u> [presenting] incoming emergency voice calls to emergency operators through a user interface, wherein the user interface includes a set of user-selectable options, <u>and wherein the presentation module is further configured to receive</u> [receiving] user input from emergency operators to select one or more of the set of user-selectable options; and [querying, through the web resources, wireless mobile devices for location information;]"***

Brooks' "communication system 100" is managed by an "emergency dispatcher." Brooks, [0019]. The system allows the dispatcher to perform various functions, including "captur[ing] the emergency call," "activat[ing]" "[m]essaging," and "conduct[ing] a variety of communications or controls via messaging." *Id.*, [0019]-[0021]. The dispatcher is also able to control when the call is "release[ed]" such that the "mobile station 106" can "terminate the connection." *Id.*, [0025].

While Brooks does not state that this functionality is accomplished via a ***"presentation module"*** with a ***"user interface"*** that presents "***a set of user-***

***selectable options"*** and ***"receive[s] user input,"*** a POSITA would nonetheless have understood that this is what Brooks employs. Again, Brooks' system allows an emergency dispatcher to receive an emergency call, activate text messaging in connection with that call, and then both send text messages to and receive text messages from the caller. Various different text message options are also available to the dispatcher, including commands and different types of information queries. And, the dispatcher can select when to terminate the call. A POSITA would have considered it obvious that these various call/messaging management options—along with the caller's responses—would be presented to the dispatcher via a user interface display. *See* Ex. 1004, ¶¶ 153-159. This would include, for example, call management software with an interface running on a computer. *See id.*, ¶¶ 159-160. The displayed software would present the dispatcher with selectable options allowing the dispatcher to choose, and then perform, the functions made available by Brooks—such as initiating messaging, selecting/generating/sending particular messages, or terminating the call—as the call (and then messaging) proceed. *See id.*, ¶ 160. Brooks system would have obviously received (and acted on) a variety of user inputs during the progress of a call, including call initiation and the generation and sending of appropriate text messages. *Id*.

The prior art's teaching of the final requirement added to this limit by claim 9—***"querying, through the web resources, wireless mobile devices for location***

***information"***—is discussed below when addressing limit [1-6]. *See infra* Section IX.A.1.[1-6].

***[1-6] "a web-hosting module configured to host web resources configured to: (i) query wireless mobile devices for location information; and (ii) share, responsive to receipt of location information, received location information with the presentation module;"***

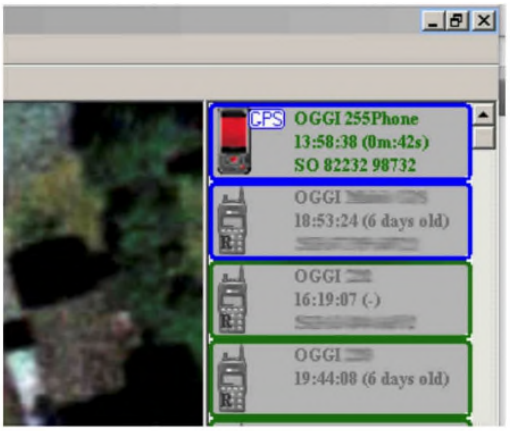
According to Brooks, "[t]he dispatcher may … use the messaging system to query the user to pinpoint the location of the user for rescue purpose[s]." Brooks, [0023]. "Determination of the position of a mobile station may be accomplished in a variety of manners known in the art, such as global positioning…." *Id.* The location information can then be "used by fire, police, or other rescue personnel to aid the caller." *Id.* Thus, just as this limitation requires, Brooks ***"quer[ies] wireless mobile devices for location information."*** Ex. 1004, ¶¶ 162-164.

SARLOC exemplifies how an emergency call system like that taught in Brooks would have been understood to employ text messaging to determine a caller's location. SARLOC explains that emergency services "often receive calls for assistance from people … who have mobile 'phone contact but little if any navigation equipment i.e. map, compass, GPS…." SARLOC, 8. To locate such a caller, an "SMS message" with a "URL … is sent" to the caller. *Id.* The caller then "browse[s] to the SARLOC web page" referenced by the URL, where "PHP and JavaScript" are used to "request the 'phones location." *Id.* This in turn triggers "the geo-location API of the 'phone's web browser to obtain its location." *Id.*; *see also* 7

("the geo-location API of" a smart phone "web browser" collects location information). Once obtained, the location information is "pass[ed] … to a web based database" (via, for instance, an "Ajax call") "which can then be interrogated by" rescue personnel. *Id.*, 8. As a result, the "user's location can then be retrieved from a web page showing the tabular data…." *Id.* An example of stored location data is shown below:

| OS Ref. | LAT | LON | ACC | ALT | ALT_ACC | HEADING | SPEED | TAG | TIMESTAMP |
|---|---|---|---|---|---|---|---|---|---|
| SN604812 | 52.41020 | -4.05274 | 24 | 119 | 0 | 0 | 0 | Cas 1 | 2012-02-09 14:23:40 |
| NY055852 | 55.15221 | -3.48317 | 48 | 122 | 0 | 0 | 0 | Cas 2 | 2012-02-06 21:13:27 |
| TQ280046 | 50.82581 | -0.18174 | 88 | 11 | 18 | 0 | 0 | Cas 3 | 2012-02-06 20:27:11 |

*Id.* Additionally, gathered location information is also displayed in a user interface along with a map:




*Id.*

This teaches the remainder of this claim limitation. SARLOC teaches ***"a web-hosting module configured to host web resources"***: a web page stores code—such as PHP and JavaScript—intended to collect phone location. Next, this web-hosting

module ***"queries wireless mobile devices for location information"***: GPS location information is extracted from a phone that browses to the SARLOC web site. Finally, SARLOC teaches a system that ***"share[s], responsive to receipt of location information, received location information with the presentation module"***: an Ajax call is used to update an online database with obtained position information and make it available to a call dispatcher. This in turn causes the phone's location to be displayed to the call dispatcher in a mapping application. *See* SARLOC, 8; Ex. 1004, ¶¶ 165-175.

***[1-7] "wherein the first outgoing textual message includes a uniform resource locator (URL) link to the web resources; and;"***

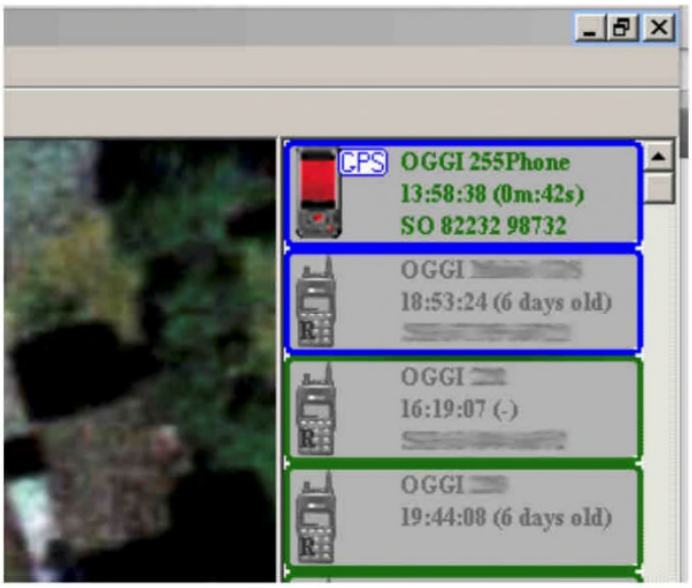
This is taught by SARLOC. Upon receipt of an emergency call, an "SMS message" with a "URL … is sent" to the user making the call. SARLOC, 8. The URL directs the user's phone to "the SARLOC web page" which includes "PHP and JavaScript" that determines the phone's location. *Id.*; *see also* Ex. 1004, ¶ 176.

***[1-8] "<u>wherein the presentation module is further configured to present</u> shared queried location information to emergency operators through the user interface."***

***[9-6] "[sharing, responsive to receipt of location information, received location information with the presentation module user interface; and presenting] shared queried location information to emergency operators through the user interface."***

This is taught by Brooks and SARLOC. Again, Brooks employs a "messaging system to query the user to pinpoint the location of the user for rescue purpose[s]." Brooks, [0023]. Obtained position information can then be "used by fire, police, or other rescue personnel to aid the caller." *Id.* SARLOC provides an example of how

this occurs. After location information is collected from a user's phone, an "online database" is updated. SARLOC, 8. This allows the location to be graphically displayed to rescue personal in a user interface along with a map:




*Id.* A POSITA would have understood that Brooks displays (or at the very least would obviously display) collected location information in the same way. Per Brooks, its system allows a dispatcher to "communicate with the caller" via text message. Brooks, [0005], [0022]. Thus, a POSITA would have understood that caller text message responses are obviously displayed to the dispatcher. *See* Ex. 1004, ¶¶ 177-180. Responses to location query texts would be no different. Once the user selects the message's link, the user's location would obviously be displayed to the emergency dispatcher in an interface along with a map. *See id.*, ¶ 180.

### 2. *Claims 5 and 13*

Claims 5 and 13 respectively depend on claims 1 and 9. Both further require:

***"wherein the outgoing textual messages include one or both of short message service (SMS) messages and/or multimedia messaging service (MMS) messages."***

This is disclosed by Brooks and SARLOC. Brooks explains that its system can employ "SMS" messages to query a user. Brooks, [0012], [0020], [0022]. SARLOC similarly communicates via "SMS message." SARLOC, 8; *see also* Ex. 1004, ¶¶ 181-182.

### 3. *Claims 6 and 15*

Claims 6 and 15 respectively depend on claims 1 and 9. Both further require:

***"wherein the transmission module is further configured to receive [receiving] textual messages from wireless mobile devices through the second communications network."***

This is taught by Brooks. Brooks' system includes an "application residing on a … message center" that is responsible for transferring SMS messages to and from "mobile devices." Brooks, [0004]. As explained, this would obviously entail transmissions occurring over networks like the Internet. *See supra* limitation [1-4]; *see also* Ex. 1004, ¶¶ 183-185.

### 4. *Claims 7 and 16*

Claims 7 and 16 respectively depend on claims 6 and 15. Both further require:

***"wherein the presentation module is further configured to present received textual messages through the user interface."***

This is taught by Brooks and SARLOC for the same reasons discussed for claim 1: incoming messages are (or obviously would be) displayed to a dispatcher in a user interface. *See supra* limitation [1-8]; *see also* Ex. 1004, ¶¶ 186-187.

**5. *Claims 8 and 14***

Claims 8 and 14 respectively depend on claims 1 and 9. Both further require:

***"wherein the web resources is configured to query [querying] wireless mobile devices for location information [includes accessing,] through an application programming interface (API) function[,] that accesses one or both of global positioning system (GPS) information and/or geolocation information."***

This is taught by SARLOC. SARLOC explains that upon clicking a link in a texted URL, the "SARLOC web page" runs scripts that cause "functions of" a caller's "'smartphones' web browser" to "obtain a location for the handset." SARLOC, 7-8. These functions include the browser's "geo-location API." *Id.*, 7, 8; *see also* Ex. 1004, ¶¶ 188-189.

**B. Motivation to Combine**

Brooks and SARLOC are analogous art. Like the '016 patent, both relate to systems for handling emergency calls. *See supra* Section IX.A.1.[1-p]. A POSITA would also have been motivated to employ the method of obtaining phone locations (and updating rescue personnel) discussed in the SARLOC article with Brooks. While Brooks' system uses messaging to obtain a caller's GPS location, Brooks does not detail exactly how this occurs. Instead, Brooks explains that "[d]etermination of

the position of a mobile station 106 may be accomplished in a variety manners known in the art … .” Brooks, [0023]. SARLOC provides this missing information. *See* Ex. 1004, ¶¶ 190-193. A text message relayed to a phone user includes a clickable URL that directs the caller to a web site that collects location information and then relays it to appropriate emergency personnel. This similarity in purpose (both Brooks and SARLOC teach the collection of phone location), operation (both Brooks and SARLOC employ text messaging), and result (both Brooks and SARLOC relay location information to emergency service) would have provided a POSITA with a strong motivation to apply SARLOC’s teachings to Brooks. *See id.*, ¶ 194.

SARLOC also teaches a system and method for locating a “smartphone” “without having to install any software.” SARLOC, 7. The system uses built-in functionality already existing on the smartphone—including text messaging, web browsers, and geolocation functionality—to determine location. *See id.*, 7-8. Moreover, it does not require the phone user to have significant technical skills: the user “only needs to browse to the SARLOC web page” for phone location to be collected. *Id.*, 8. And the system also employs existing database functionality to relay collected location information to emergency service providers. *See id.* This would have provided a further motivation to employ the SARLOC article’s teachings with Brooks. No special purpose software would be needed: existing smartphone

functionality would be used to collect location information. *See* Ex. 1004, ¶¶ 195-197. Moreover, Brooks' system would be simplified: callers would be provided with a straight-forward, user-friendly way to relay location information to emergency dispatchers: the caller would simply click on a provided link. *See id.*, ¶ 198.

A POSITA would also have had a more than reasonable expectation of success. Brooks' emergency management system already employs text messaging to communicate and specifically contemplates using the messaging system to query the user for the user's location. SARLOC simply provides an example of one type of text message such a system can transmit: a message with a link that collects phone location. *See* Ex. 1004, ¶ 199. Moreover, Brooks' system is intended to both collect user location information and display that information to an emergency dispatcher. *See id.*, ¶ 200. Again, a POSITA would understand that SARLOC facilitates this very thing. *See id*.

## X. *GROUND 2*: *OBVIOUSNESS* OVER SALAFIA AND MARR

Salafia (Ex. 1007) and Marr (Ex. 1008), when considered in view of the knowledge of a POSITA, together renders claims 1, 5-9, 13-17, and 25-27 obvious.

Salafia teaches an emergency communication system that allows a dispatcher / call handler to send text messages to a caller. The texts can include URLs. The system is also able to obtain caller GPS location information. Marr provides an example of how a system like that in Salafia would go about obtaining this

information: the system sends a text to the caller with a URL that directs a caller's phone to a website that collects GPS location.

## A. Claim-by-Claim Analysis

### 1. *Claims 1 and 9*

Claims 1 and 9 will again be analyzed together.

***[1-p] "1. A system configured to provide, to emergency operators, communication through textual messages, the system comprising:"***

***[9-p] "[9. A computer-implemented method for providing, to emergency operators, communication through textual messages, the method being performed by]"***

To the extent limiting, this is disclosed by Salafia. Salafia teaches a "call handling system" that is "used by a call handler to communicate" with an individual who has "dial[ed] 911 seeking emergency assistance." Salafia, [0002]. Unlike prior art systems that relied only on verbal communication, Salafia's system is "significantly enhanced through the incorporation of the transfer of visual and/or textual information." *Id.*, [0040], [0010]. To allow for "textual and visual communication," Salafia's system includes a "electronic message processing module" that allows textual messages to be sent to and received from emergency callers. *Id.*, [0062]-[0063]; Ex. 1004, ¶¶ 204-206.

***[1-1]/[9-1] "one or more processors configured to execute computer program modules, the computer program modules [the method] comprising:"***

Salafia's system includes "call handler workstation 202" that allows a "call handler 104" to receive incoming emergency calls and compose outgoing messages.

Salafia, [0054], [0059]. Further, the system can include an "electronic message processing module 228" to facilitate the transmission of messages to callers. *Id.*, [0062]; *see also* [0021], [0063]. The various call handling and messaging functions performed by these components is also facilitated by "software running at [a] PSAP 212." *Id.*, [0127]. The workstation, message processing module, and PSAP hardware—along with the driving software—are all examples of the claimed ***"processors"*** that ***"execute computer program modules."*** Ex. 1004, ¶¶ 207-210.

***[1-2]/[9-2] "<u>a call reception module configured to receive</u> [receiving] incoming emergency voice calls being placed to an emergency call center through an emergency communications network from wireless mobile devices, the incoming emergency voice calls including a first voice call placed from a first wireless mobile device;"***

Salafia's system includes a "telephonic interface" that allows for "audio communication between at least one call handler and at least one caller over a telephone network." Salafia, [0016]. An "emergency services call handler 104" receives and manages calls. Salafia, [0054]. The call handler may be located at a "PSAP" (or "Public Safety Answering Point"). *Id.*, [0004], [0010]; *see also* [0021]. The call handler 104 manages and interacts with a "workstation 202" with a "phone 204 for audio communications…." *Id.*, [0059]. The PSAP (and call handler workstation) receives calls from a "cell phone" and has "the capability to generate, send, and receive electronic messages." *Id.*, [0058].

In operation, "[a] typical … 911 call from a cell phone user" initiates communication via a "cellular network 222." *Id.*, [0060]-[0061]. The call is then routed from the cellular network through a "PSTN 224" (or public switched telephone network) and on to a "PSAP 212." *Id.*, [0059], [0061]. This in turn allows "[t]he call handler 104" at the PSAP "and the caller 102" to establish an "audio communication link" for purposes of "discuss[ing] the emergency situation…." *Id.*, [0061]; *see also* [0054] (a "caller 102" "dial[s] 911" and is "routed to an appropriate emergency services call handler 104"); Fig. 3 (a "911 call is presented to call handler" at step 306).

This teaches everything this limitation requires. Salafia includes a ***"call reception module"*** (its workstation / telephonic interface that receives and manages incoming calls) associated with an ***"emergency call center"*** (the PSAP that includes the call handler). "***Wireless mobile devices"*** (cell phones) can make ***"emergency voice calls"*** (911 calls) that are received by this ***"call reception module"*** over an ***"emergency communication network"*** (the cellular/PSTN network that routes emergency calls to the PSAP). *See* Ex. 1004, ¶¶ 211-219. These components are annotated in Figure 2:

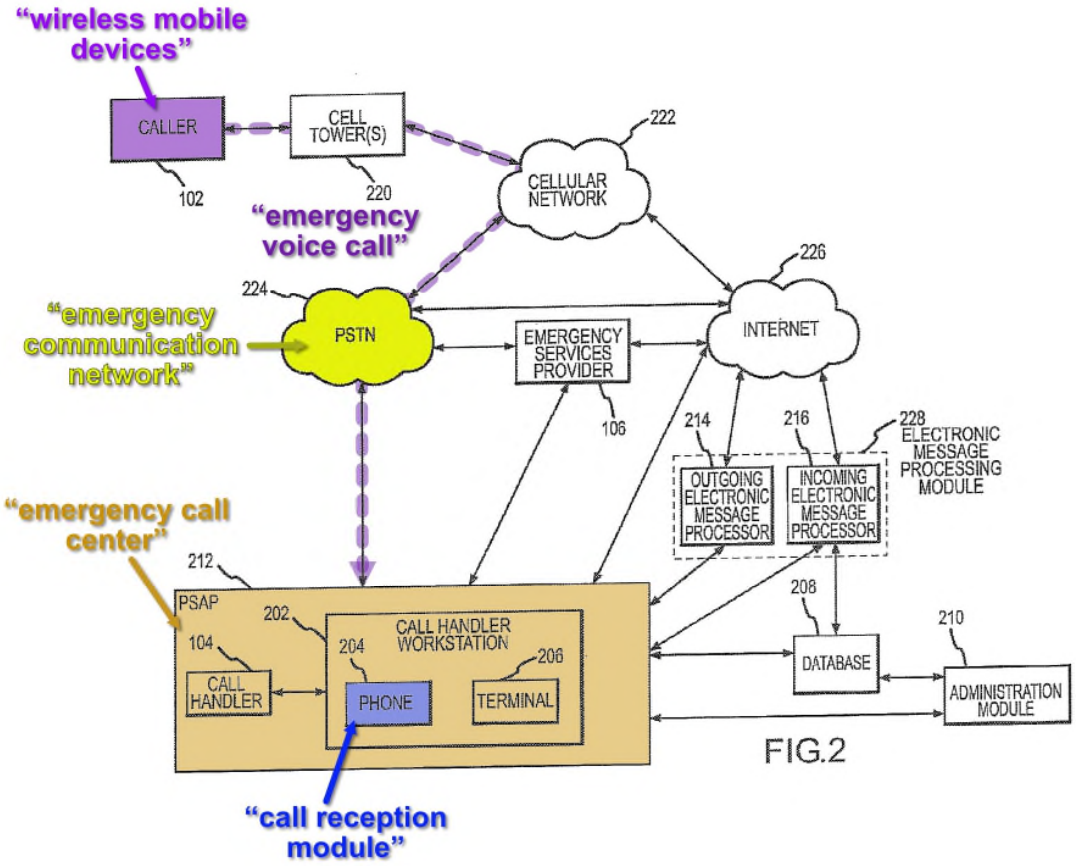



FIG.2

Salafia, Fig. 2 (annotated); *see also* Ex. 1004, ¶¶ 220-221.

***[1-3]/[9-3] "<u>an outgoing message module configured to generate</u> [generating] outgoing textual messages for transmission to wireless mobile devices from which incoming emergency voice calls are received such that a first outgoing textual message is generated for transmission to the first wireless mobile device based on the first voice call;"***

Salafia explains that its system includes a "call handler interface" that allows the call handler to "generate at least one outgoing message" to be sent to a caller. Salafia, [0017]. In one example, this is a "call handler workstation 202" with a "terminal 206" "in the form of a computer interface including, for example, a video display device, keyboard, and mouse." *Id.*, [0058]. The "outgoing message may be an electronic message" like an "electronic mail message." *Id.* Alternatively, it may

be a "multimedia message service (MMS)" message that allows a "range of media formats to be attached to messages." *Id.*, [0130]; *see also* [0133] ("a call handler … can activate a function that sends an MMS message to the communication device … from which the caller is calling from"); [0008] (system can "send[] a … MMS"). Each outgoing message includes a "unique identifying component" that allows it to be associated with a particular incoming emergency call. *Id.*, [0018]; *see also* [0068] Fig. 3 (referencing message generation steps 308-316); Fig. 6 (similarly showing message generation steps). The outgoing message are intended to elicit, for example, a "textual message" or "visual response" from the caller. *Id.*, [0067].

This is what this limitation requires: Salafia includes an ***"outgoing message module"*** (the call handler's workstation) that generates ***"outgoing textual messages"*** (electronic mail or MMS messages) for transmission to wireless devices that made emergency calls. *See* Ex. 1004, ¶¶ 221-226. The messages are also ***"based"*** on a received call (they are associated with a particular call with a unique identifying component). *Id.* This is shown in Figure 2:

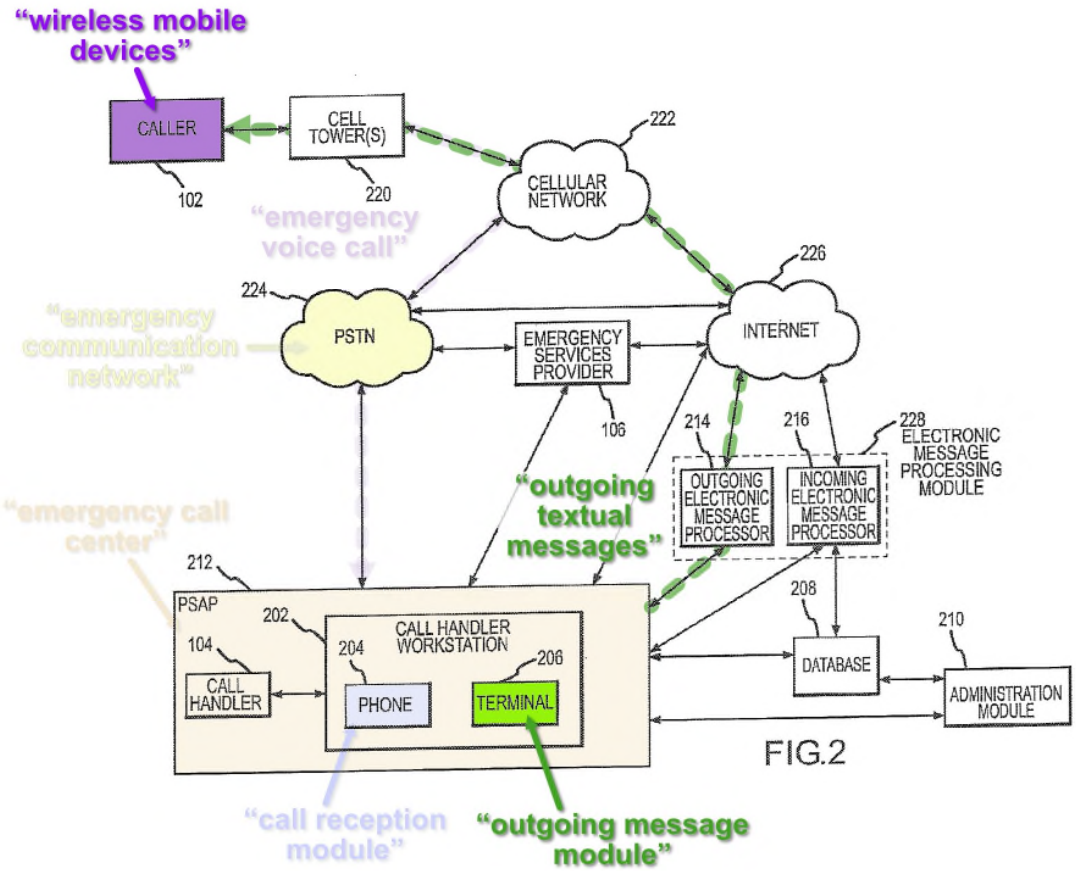



FIG.2

Salafia, Fig. 2 (annotated); *see also* Ex. 1004, ¶ 226.

***[1-4]/[9-4] "<u>a transmission module configured to transmit</u> [transmitting] the outgoing textual messages to the appropriate wireless mobile devices through a second communications network that is different than the emergency communications network such that the first outgoing textual message is transmitted to the first wireless mobile device through the second communications network; [wherein the first outgoing textual message includes a link to web resources;]"***

Salafia explains that its "PSAP 212" (and the call handler workstation 202 it contains) either includes or is interconnected with "an electronic message processing module 228." Salafia, [0062]. This module "facilitate[s] the sending and receiving of electronic messages between the PSAP 212 and the Internet 226 and therefor to

any other user or users connected to the Internet 226." *Id.* To do so, the "electronic message processing module" employs "one or more network interfaces." *Id.*; *see also* [0015] (a "network interface" is "operable to receive and transmit packetized information over a computer network" like the "Internet"); [0021] (similar). In Figure 2, outgoing message transmission is handled by "outgoing electronic message processor 214" in this "module 228." *Id.*, [0063]. After the call handler assembles a textual message for deliver to an emergency caller, the "message may then be transferred from the call handler workstation 202 to an outgoing electronic message processor 214." *Id.*, [0073]. "The … processor 214" then "send[s] the electronic mail to the caller 102 over the Internet 226 and the caller's 102 cellular network 222." *Id.*; *see also* Fig. 3 ("outgoing" message sent in step 316); Figs. 6-7 (similar).

So, Salafia includes the claimed ***"transmission module"*** (its messaging processing module 228 / outgoing electronic message processor 214). This module transmits ***"outgoing textual messages"*** (the electronic mail or MMS messages generated by workstation 202) to ***"appropriate wireless mobile devices"*** (the original 911 caller's cell phone) via ***"a second communication network"*** (the Internet). *See* Ex. 1004, ¶¶ 227-234. This is shown in Figure 2:



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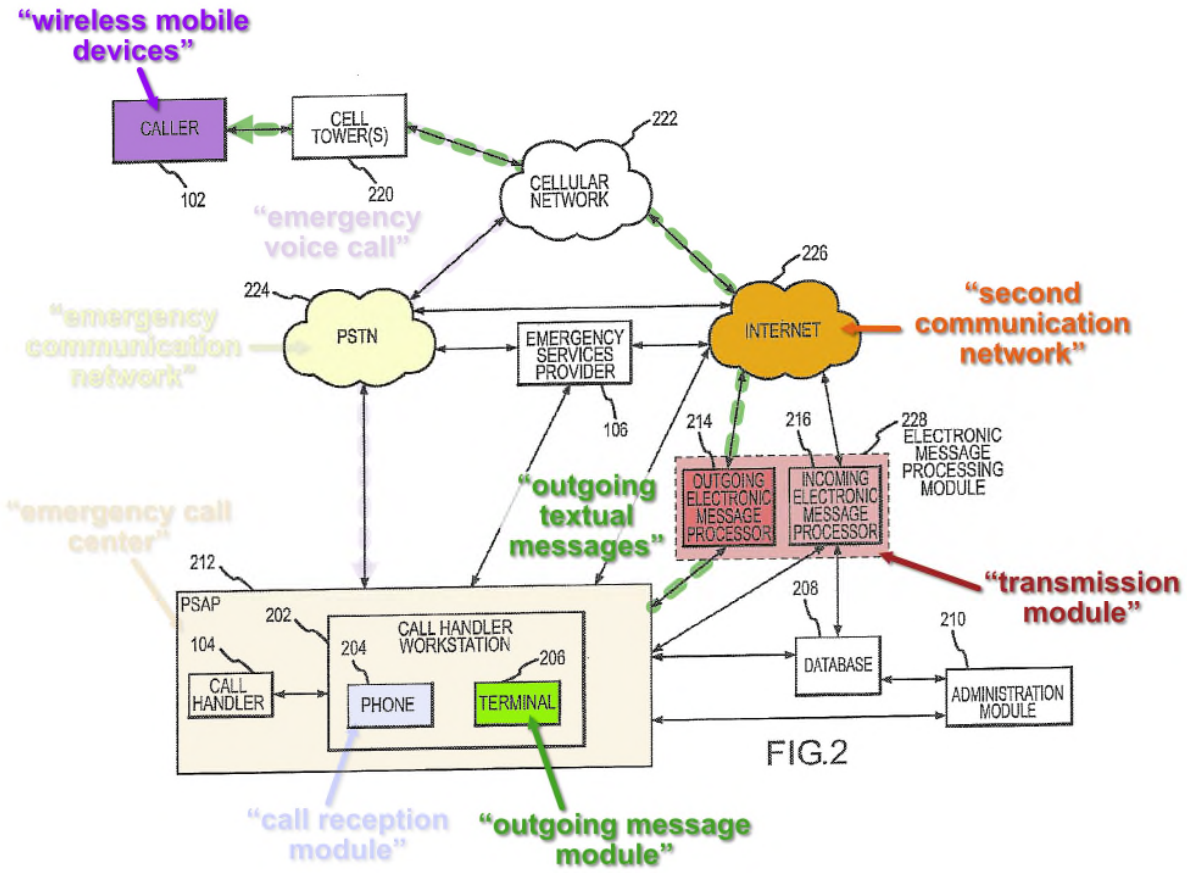



Salafia, Fig. 2 (annotated); *see also* Ex. 1004, ¶ 235.

The prior art's teaching of the final requirement added to this limit by claim 9—"***wherein the first outgoing textual message includes a link to web resources***"—is discussed below when addressing limit [1-6]. *See infra* Section X.A.1.[1-6].

***[1-5]/[9-5] "<u>a presentation module configured to present</u> [presenting] incoming emergency voice calls to emergency operators through a user interface, wherein the user interface includes a set of user-selectable options, <u>and wherein the presentation module is further configured to receive</u> [receiving] user input from emergency operators to select one or more of the set of user-selectable options; and [querying, through the web resources, wireless mobile devices for location information;]"***

Salafia includes the claimed ***"presentation module"*** that ***"present[s] incoming emergency voice calls to emergency operators through a user interface."*** Salafia's "call handler workstation 202" includes a "terminal 206" with a "video display device, keyboard and mouse." Salafia, [0059]. Upon receipt of an incoming emergency call, "[t]extual information about the call may appear on the terminal 206 of the call handler workstation 202" while the handler engages in "audio communication" with the caller. *Id.*, [0061]. This "textual information" may include the "phone number of the caller 102" along with any "location data forwarded to the PSAP 212 by the cellular network 222." *Id.*

Figure 5 "illustrat[es]" an example "graphical user interface for communicating textual and visual information to a call handler." *Id.*, [0044]

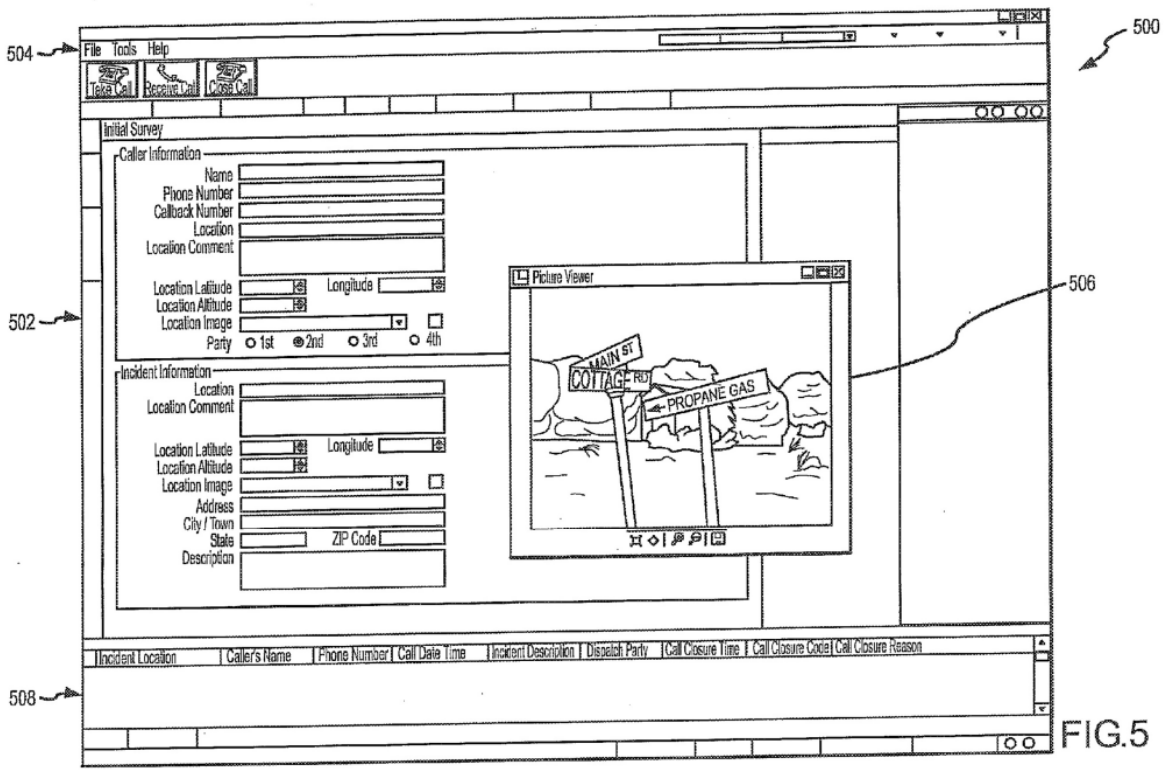


FIG.5

*Id.*, Fig. 5. The interface includes a "call display window 500" listing "recent calls to the PSAP 212 or the particular call handler workstation 202 within the PSAP 212…." *Id.*, [0078]. The interface's "main window 502 … display[s] details of an in-process call between the call hander 104 and the caller 102" including the "caller 102 name, a phone number, and location." *Id.*; *see also* [0078]-[0079]; Ex. 1004, ¶¶ 237-242.

Next, Salafia's ***"user interface"*** includes ***"a set of user-selectable options"*** that can be selected via ***"user input from emergency operators."*** Salafia explains that "[o]nce it has been determined that an electronic message from the caller 102 would be beneficial[,]" messaging may be initiated by "entering a command using a

keyboard or clicking on a button on the display of terminal 206 using a mouse." Salafia, [0068]. This causes a "pop-up window 400" like that shown in Figure 4 to be "displayed on the terminal 206…." *Id.*, [0069]. The "pop-up window 400 may present multiple electronic mail templates to the call handler 104 in the form of a pull-down list … accessed by activating the pull-down menu button 401…." *Id.* The different templates generate different messages, request different information from the caller, and provide different instructions. *Id.*; *see also* [0017] (different "outgoing message templates" can be "select[ed]" depending on the "circumstances of the call"). An example is shown in Figure 4 below. As shown, Salafia includes a ***"user interface"*** (pop-up window 400 and associated window 500) with ***"selectable options"*** (the original options in window 500 and the list of templates accessed by clicking menu button 401):

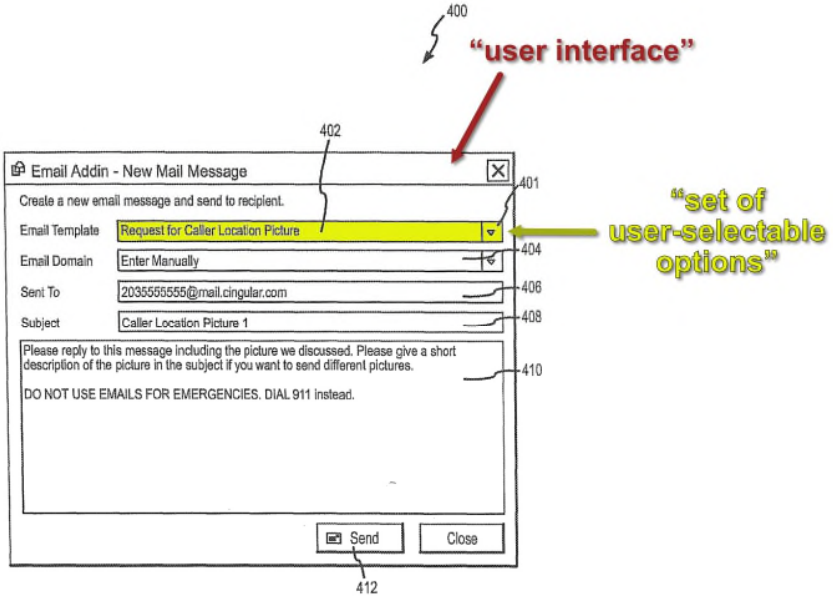



FIG.4

*Id.*, Fig. 4 (annotated); *see also* Ex. 1004, ¶¶ 243-247.

The prior art's teaching of the final requirement added to this limit by claim 9—***"querying, through the web resources, wireless mobile devices for location information"***—is discussed below when addressing limit [1-6]. *See infra* Section X.A.1.[1-6].

***[1-6] "a web-hosting module configured to host web resources configured to: (i) query wireless mobile devices for location information; and (ii) share, responsive to receipt of location information, received location information with the presentation module;"***

This is rendered obvious by the combination of Salafia and Marr. Salafia explains that "a call handler working in a PSAP will receive textual information, displayed on a computer terminal, regarding the probable location of a caller." Salafia, [0005]. Salafia identifies various ways that this location information can be obtained. For instance, if the "caller is calling from a landline, systems at the PSAP may access an automatic location information (ALI) database to determine the location of the caller." *Id.* If, however, the caller is calling "from a mobile wireless device (e.g., cell phone)" ALI database information is not available and location must be determined using other methods. One way to do so is "from triangulation signals transmitted by the cell phone." *Id.* Alternatively, "[g]lobal Positioning System (GPS) location data may also be available if the caller is using a cell phone with GPS capabilities." *Id.*, [0005]. This "GPS information" may be "obtained from the cell phone" and then displayed on the "call handler workstation 202" as "textual

information about the call." *Id.*, [0061]; *see also* [0066] (noting that the "PSAP 212" provides the "call handler 104" with a "visual display of data associated with the call displayed on the terminal 206 of the call handler workstation 202" that includes the "approximate location of the caller 102.")

Salafia's system also allows the call handler to message a caller to obtain additional details regarding the caller's location, including images showing the "location of an incident." *Id.*, [0069]; *see also* [0010]-[0011] (call handler may request and receive "visual information" relating to the "exact location of the caller"). These messages can include "instruction[s,]" "forms, or Uniform Resource Locators (URLs)." *Id.*, [0011]; *see also* [0120] ("outgoing messages to callers" can include "URLs" and other information). When the caller responds to a message from the call handler, location information provided by the caller automatically "appear[s] in front of the call handler 104" in a "pop-up window 506." *Id.*, [0081]. Both the fields listing GPS location and the pop-up window are shown in Figure 5 below:

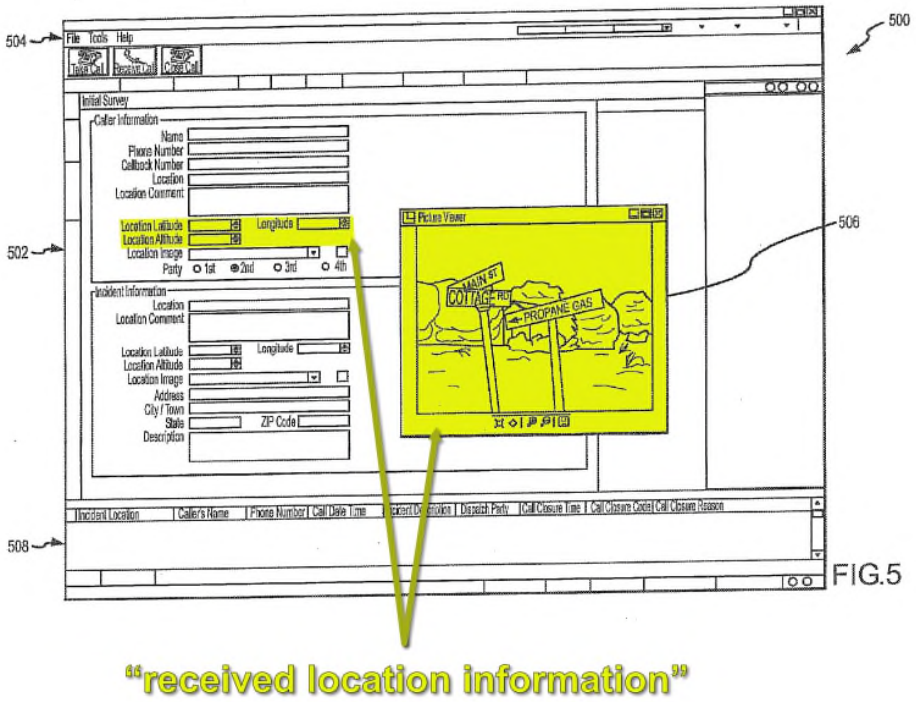


FIG.5

*Id.*, Fig. 5 (annotated). Finally, Salafia explains that its system "may include web hosting capabilities" to allow for communications. *Id.*, [0118].

So, just as this limitation requires, Salafia teaches a system that responsively ***"share[s]" "received location information"*** (either received phone GPS information or location images provided via message) ***"with the presentation module"*** (location information is displayed in, for example, pop-up windows or appropriate interface fields). It also includes a ***"web-hosting module"*** (albeit one that is not specially configured in the way this limitation requires). *See* Ex. 1004, ¶¶ 249-261.

Salafia does not, however, specifically explain how its system obtains GPS information from calling cell phones. Marr does. Marr relates generally to a system

for "initiating, managing, and responding to requests for a roadside service technician." Marr, [0002]. According to Marr, service systems employing a "phone-in process relies heavily" on the caller's "knowledge of his location." *Id.*, [0005]. But callers often do not know where they are located. *Id.*, [0006]. Thus, Marr notes that there is need for a system that "does not rely as heavily" on the caller's own knowledge. *Id.*, [0008].

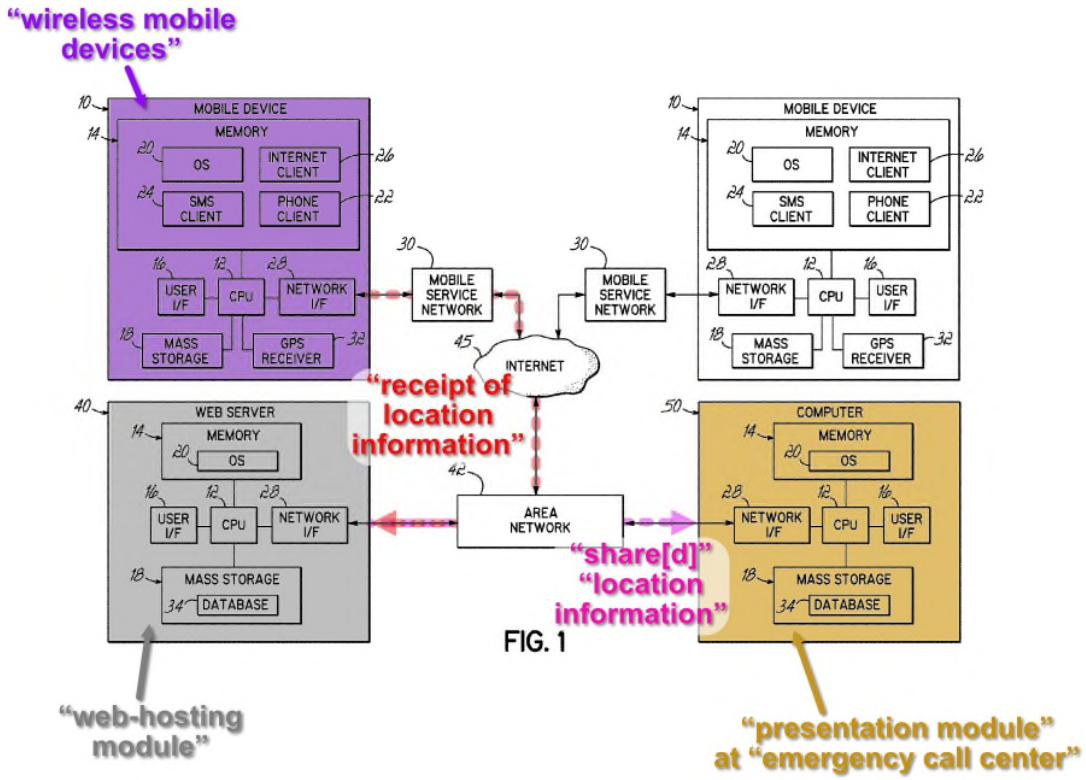
Marr goes on to explain that "many modern web-enabled phones include GPS capability, which may give accurate longitude and latitude coordinates[,] … and … are configured to allow websites and applications to receive and use this location information." *Id.*, [0021]. Marr's system is designed to collect this information. The system includes a "computer 50" that is "operating under the control of a service request dispatcher." *Id.*, [0024]-[0025]. The system also includes a "server 40" that is "capable of serving web pages in response to client requests over the internet 45." *Id.*, [0024]. The web server may be connected to the same "local area network 42" as a "service request dispatcher" "computer 50." *Id.*

According to Marr, a "customer" may "initiate a service request by phone." *Id.*, [0037]. The "dispatcher" can then "provide a URL to the customer that, when accessed, will provide the user's location to the service request system." *Id.* In operation, a call-specific "SMS or other text message" is generated with a "customized URL to enable a GPS signal to be collected from the device." *Id.*,

[0038]-[0039]. The URL may be "shortened" if necessary. *Id.* The text with the URL is then "sent to the customer's mobile communication device through a messaging protocol such as text messaging or instant messaging." *Id.*, [0040]. "[W]hen a URL arrives through a messaging protocol" it is "recognized by the messaging client and can be sent to and opened by the internet client immediately." *Id.* "Upon accessing the URL, the web server receives a website request for the unique URL … which prompts the website to request GPS data from the client device…." *Id.*; *see also* Fig. 4. Received GPS data is "associated" with an existing "service request" being managed by a system dispatcher. *Id.*, [0040]. The dispatcher "confirm[s] receipt of the GPS location while the customer" is still "on the phone." *Id.*, [0037]; Ex. 1004, ¶¶ 263-273.

Applying this to Salafia renders the rest of this claim limitation obvious. Salafia's system is intended to provide a call handler with GPS location information collected from a caller's phone. Salafia, [0005], [0061]. Salafia's system also allows the call handler to send textual messages—including messages with URLs—asking for further location information. *Id.*, [0011]. The dispatcher can select a particular message to send using a user interface. *Id.*, [0017], [0069]. This message can thus account for the "circumstances of the call." *Id.* Salafia's system is also already able to include "web hosting capabilities." *Id.*, [0118]. In view of this disclosure, a POSITA would have understood that if the call handler receives a call from a mobile

device that has GPS capability, the call handler would be able to select to send an outgoing message requesting the device to provide GPS position information. *See* Ex. 1004, ¶¶ 275-276 . The message would include a URL like that taught by Marr. *Id.*, ¶ 276. Upon receipt, the message's URL would direct the mobile device to a web page served by a web server like that referenced in Marr (or Salafia itself). The web page would collect the mobile device's GPS location and relay it to the call handler for display. *Id.*, ¶¶ 277-278. This is exactly what this limitation requires. A ***"a web-hosting module"*** (Marr's web server) "***host[s] web resources"*** that ***"query wireless mobile devices for location information"*** (the web pages that obtain cell phone GPS location) and then provides this information to the ***"presentation module"*** (the location information is displayed by Marr's dispatcher 50 / Salafia's call handler interface window 500). *Id.*, ¶¶ 279-280. This is highlighted in Figure 1 of Marr:




Marr, Fig. 1 (annotated); *see also* Ex. 1004, ¶ 280.

***[1-7] "wherein the first outgoing textual message includes a uniform resource locator (URL) link to the web resources; and;"***

This is taught by Salafia and Marr. Salafia explains that its outgoing messages can include "Uniform Resource Locators (URLs)." Salafia, [0011], [0120]. Marr likewise teaches that caller location can be obtained by sending a text message that includes a "URL to enable a GPS signal to be collected" from the caller's phone. Marr, [0038]-[0041]. The URL directs the phone to a "web server" that hosts a "website" able to collect the required GPS data. *Id.*; *see also* Ex. 1004, ¶¶ 281-282.

***[1-8] "wherein the presentation module is further configured to present shared queried location information to emergency operators through the user interface."***

***[9-6] "sharing, responsive to receipt of location information, received location information with the presentation module user interface; and presenting shared queried location information to emergency operators through the user interface."***

This is also taught by Salafia and Marr. Marr explains that "received location data" collected by its "web server" is "associated with" a particular "service request" so that it can be viewed by a service dispatcher. Marr, [0041]. This allows the dispatcher to not only send messages to callers, but "confirm receipt of the GPS location while" still "on the phone" with the caller. *Id.*, [0037]. Salafia's system also provides a dispatcher/call handler with information regarding the call. In particular, the system includes a "graphical user interface for communicating textual and visual information to a call handler." Salafia, [0044]. The interface's "main window 502" lists, among other information, the caller's "location." *Id.* Per Salafia, this information may be "populated automatically by the call handler workstation 202" if available. *Id.*, [0078]-[0079]. Further, Salafia's system can also display caller message responses in a "pop-up window 506." *Id.*, [0081]; *see also* Fig. 7 (noting that incoming messages are "correlate[d]" to a particular "call").

Thus, a POSITA would have understood that upon receipt of ***"shared queried location information"*** (the caller's GPS location collected by Marr's web server), Salafia's ***"presentation module"*** (the call handler interface) would ***"present"*** this information to the ***"emergency operators through the user interface"*** (the call

handler would be provided with the collected GPS information by either populating the relevant location fields in the interface and/or through a pop-up window). *See* Ex. 1004, ¶¶ 283-287.

### 2. *Claims 5 and 13*

Claims 5 and 13 respectively depend on claims 1 and 9. Both further require: ***"wherein the outgoing textual messages include one or both of short message service (SMS) messages and/or multimedia messaging service (MMS) messages."***

This is disclosed by Salafia. According to Salafia, the outgoing messages sent by its system may be "multimedia message service (MMS)" messages. Salafia, [0130]; *see also id.*, [0008]-[0009] (system can send a "MMS from the call center to the communication device"); Ex. 1004, ¶¶ 288-289.

### 3. *Claims 6 and 15*

Claims 6 and 15 respectively depend on claims 1 and 9. Both further require: ***"wherein the transmission module is further configured to receive [receiving] textual messages from wireless mobile devices through the second communications network."***

Salafia's "electronic message processing module 228" includes an "incoming electronic message processor 216." Salafia, [0062]-[0063]. This processor 216 receives messages sent by callers to the "PSAP 212" over the "Internet 226." *Id.* So ***"textual messages from wireless mobile devices"*** (incoming messages) are received by Salafia's ***"transmission module"*** (electronic processing module 228 / incoming

processor 216) via the same ***"second communications network"*** (the Internet) over which outbound messages are sent. This is shown in Figure 2:

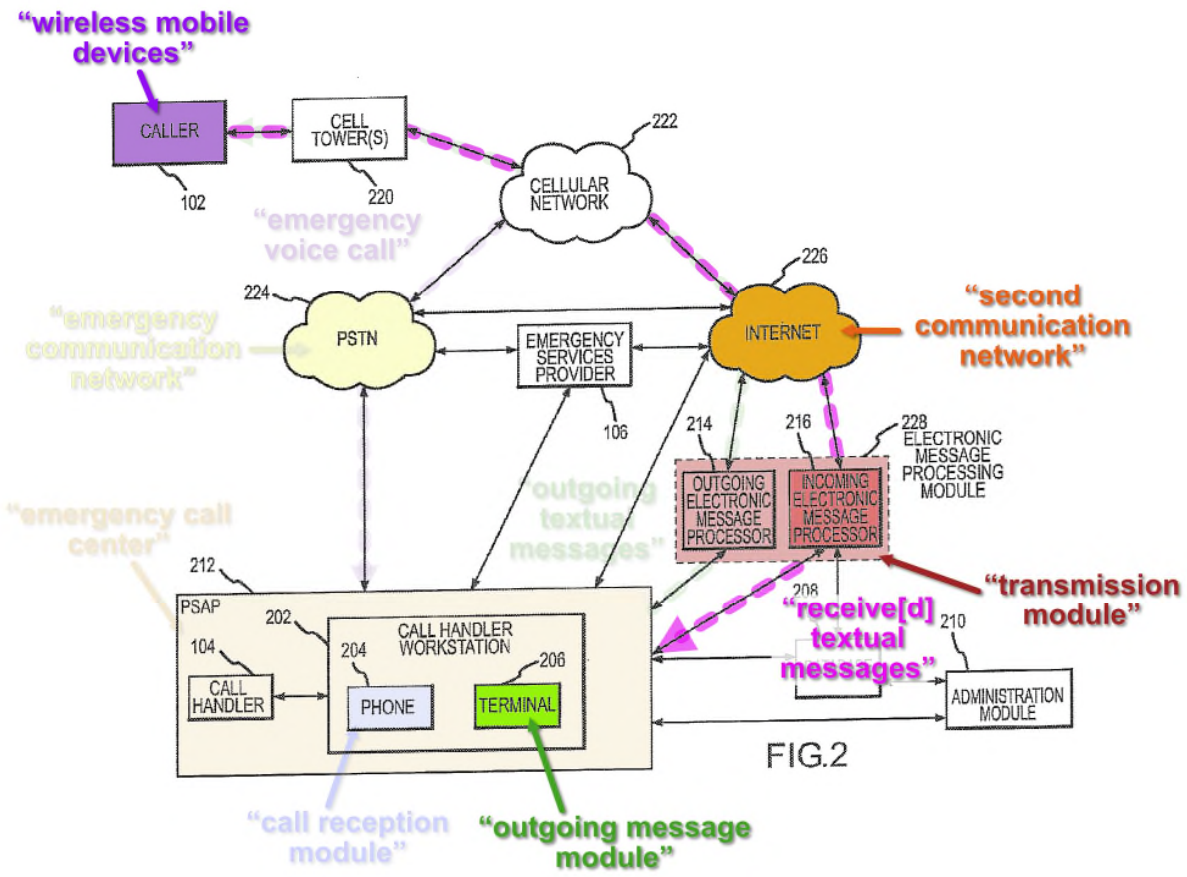



FIG.2

*Id.*, Fig. 2 (annotated); *see also* Ex. 1004, ¶¶ 290-293.

### 4. *Claims 7 and 16*

Claims 7 and 16 respectively depend on claims 6 and 15. Both further require:

***"<u>wherein the presentation module is further configured to</u> present received textual messages through the user interface."***

In Salafia, message responses from callers automatically "appear in front of the call handler 104" in a "pop-up window 506" displayed by the call handler

interface. Salafia, [0081]; *see also* [0077] (incoming messages automatically displayed); Fig. 5; Ex. 1004, ¶¶ 294-295.

### 5. *Claims 8 and 14*

Claims 8 and 14 respectively depend on claims 1 and 9. Both further require:

***"wherein <u>the web resources is configured to query</u> [querying] wireless mobile devices for location information [includes accessing,] through an application programming interface (API) function[,] <u>that accesses</u> one or both of global positioning system (GPS) information and/or geolocation information."***

This is obvious over Salafia and Marr. Again, Salafia's system is designed to obtain calling cell phone GPS information. Salafia, [0061]. A POSITA would have understood that in Marr, this occurs using a website that accesses an "***application programming interface (API)"*** on the user's cell phone for purposes of obtaining ***"global positioning system (GPS) information."*** In particular, rather than requiring users to enter location information and collect GPS data themselves, this occurs automatically and behind-the-scenes upon message receipt. According to Marr, "[o]n many web-enabled mobile devices, when a URL arrives through a messaging protocol, it is recognized by the messaging client and can be sent to and opened by the internet client immediately." Marr, [0040]. This in turn causes the device to contact the "web server" and the "web site to request GPS data from the client device." *Id.* Again, because this process is occurring automatically and without direct user intervention, a POSITA would have understood that it entails the use of APIs. *See* Ex. 1004, ¶¶ 296-302; *see also* Salafia, [0138] (referencing the use of

"middleware" that "can expose its functionality to existing applications" to collect information from emergency callers).

### 6. *Claim 17*

Claim 17 depends on claim 1 and further requires:

***"wherein the user interface includes a first interface element and a second interface element, and the presentation module is configured to display the set of user-selectable options via the first interface element and to display another set of user-selectable options via the second interface element, and wherein the another set of user selectable options displayed via the second interface element changes depending on selection made to the set of user-selectable options"***

This is disclosed (or at very least rendered obvious) by Salafia. In Salafia, a handler can "initiat[e] … image acquisition protocol" by, for example, "clicking on a button" displayed on the terminal. *Id.*, [0068]-[0069]. This results in a "pop-up window 400" with "pull-down menu button[s]" allowing for selection of different template messages. *Id.* Salafia's system can also be employed to generate a variety of messages, including requests for images, audio, and other information. *Id.*, [0058], [0069], [0093], [0094] (explaining that the disclosed system may be used to send audio files to the call handler 104), [0130]. Given this, a POSITA would understand that Salafia's terminal display would (or at the very least obviously could) include multiple separate options to initiate messaging for different categories of information like images and audio (the claimed ***"first interface element"*** with ***"the set of user-selectable options"***). This then results in a pop-up window with a list of category-specific (e.g. image or audio) templates (the ***"second interface***

***element"*** with ***"another set of user-selectable options"*** that ***"change"*** depending upon whether images/audio/other originally selected). Ex. 1004, ¶¶ 304-309.

Alternatively, the pop-up window 400 itself satisfies this claim limitation. The top of the window includes a "template" section with a "pull-down menu button 401" that displays—and allows the handler to select—different available message templates (another example of a ***"first interface element"*** with ***"the set of user-selectable options"***). Salafia, [0069]. Selection of a particular message template will cause template-specific "pre-determined fields" to appear and/or become populated. *Id*., [0070]. This includes further "pull-down menu[s]" like element 404, fillable fields like elements 406 and 408, and message specific editable text in body 410. *Id*., [0070]-[0071]. Salafia explains that these templates may be modified by administrative personnel. *Id*. [0069]. A POSITA would have understood that these fields—and the options they provide to the call-handler—would also obviously change depending on the selected template (another ***"second interface area"*** with ***"another set of user-selectable options"*** that ***"change"***). Ex. 1004, ¶¶ 310-317. An example is shown below:



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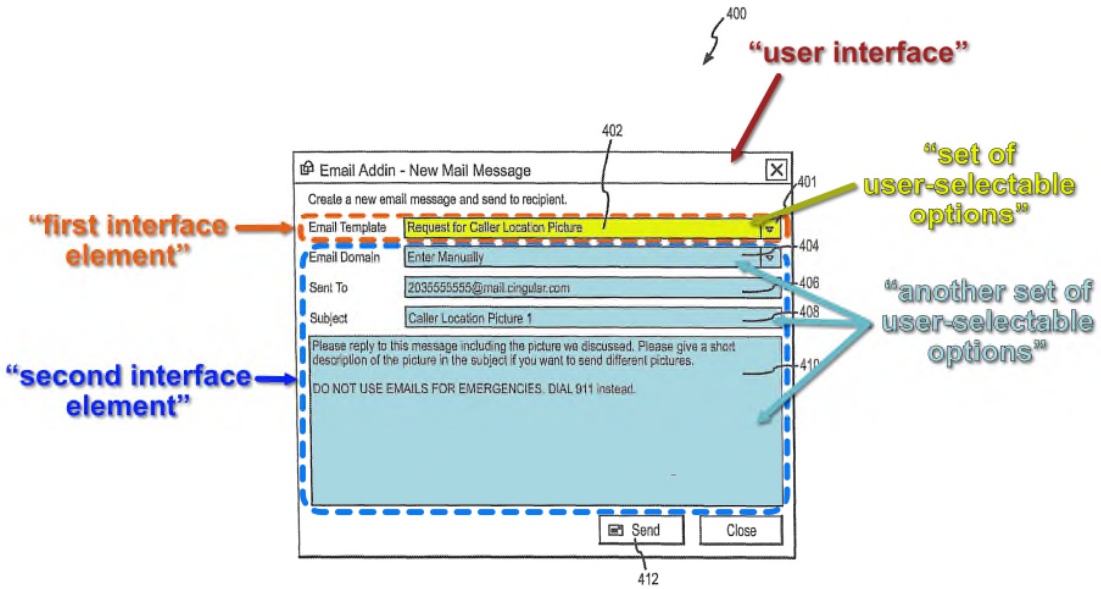


FIG.4

Salafia, Fig. 4 (annotated); *see also* Ex. 1004, ¶ 317.

### 7. *Claim 25*

Claim 25 depends on claim 1 and further requires:

***"wherein the presentation module is further configured to present, with respect to the first voice call, historical emergency information that is associated with one or more previous emergency voice calls."***

Salafia explains that its "[c]all display window 500" not only displays information relating to an "in-process call" in a "main window 502," but also includes a "listing section 508 where recent calls to the PSAP 212 … may be displayed." Salafia, [0078]; Fig. 5; *see also* Ex. 1004, ¶¶ 318-319.

### 8. *Claim 26*

Claim 26 depends on claim 25 and further requires:

***"wherein the one or more previous emergency voice calls are related to the first voice call in view of at least one of a calling device, a caller, or a calling location."***

The "listing section 508" in Salafia's "window 500" identifies—and categorizes—prior calls by "Incident Location," "Caller's Name," and "Phone Number." Salafia, [0078], Fig. 5. Thus, when Salafia's system has received recent calls from the same location, the same caller, or the same phone number as the present call, those calls will be displayed in listing section 508 and will be ***"related"*** to the ***"first voice call***" by ***"calling device," "caller,"*** or ***"location."***. *See* Ex. 1004, ¶¶ 320-321.

**9. *Claim 27***

Claim 27 depends on claim 25 and further requires:

***"wherein the presentation module is further configured to present information from one or more emergency responders to at least one of the one or more previous emergency voice calls and the first voice call."***

This is disclosed (or at least rendered obvious) by Salafia. Salafia's system "may exchange information with emergency services provider 106 regarding the emergency and the status of the caller 102." Salafia, [0055]; *see also* [0059], [0083]-[0084]. And as shown in Figure 5, interface "sections 502 and 508 includes various information fields—such as "Dispatch Party," "Incident Description," and "Incident Information"—that would (or at least obviously could) reflect information relayed by emergency service providers regarding one of the previous emergency voice calls

(section 508) and the first voice call (section 502). *Id.*, Fig. 5; *see also* Ex. 1004, ¶¶ 322-324.

### B. <u>Motivation to Combine</u>

To begin, even though it relates to a system for handling vehicle roadside service requests—and not a 911 call system like the ’016 patent or the other prior art discussed in this Petition—a POSITA would nonetheless have considered Marr to be analogous art. “[C]ourts generally take an expansive view of what constitutes analogous art.” *Netflix, Inc. v. Divx,* LLC, 80 F.4th 1352, 1359 (Fed. Cir. 2003). Art is analogous if it is either “from the same field of endeavor” of the patent-at-issue, or “is reasonably pertinent to the particular problem” addressed by the patent. *In re Bigio,* 381 F.3d 1320, 1325 (Fed. Cir. 2004). Here, the ’016 patent explains that it relates to a communication system for “emergency operators.” Ex. 1001, 1:22-24. This “operator” can be a “dispatcher” handling a variety of “first response” issues. *Id.*, 1:28-41. While these issues can include “police, fire,” or “medical” events, the patent explains that it also extends to “other types of first response.” *Id.* Marr teaches one such “other” system: its system facilitates response to vehicle roadside emergencies. *See* Marr, [0002]. A POSITA would also have considered Marr pertinent to the purported problem addressed by the ’016 patent. According to the patent, dispatchers often have difficulty gathering information—including location—during an emergency call. Ex. 1001, 1:28-45. The ’016 patent’s system

attempts to address this by allowing "communication through textual messages." *Id.*, 1:22-24. Marr similarly notes that service requests relying only on phone conversations are problematic. Marr, [0005]-[0006]. And it presents, among other things, the same solution as the '016 patent: a dispatcher can send text messages to a caller to obtain further information. *Id.*, [0037]-[0040]; *see also* Ex. 1004, ¶¶ 325-330.

Next, a POSITA also would have considered it obvious and would have been motivated to apply Marr's teachings to Salafia. Salafia's system is meant to obtain GPS information from caller cell phones. But Salafia does not explain how this occurs. Thus, a POSITA implementing Salafia would have considered other references discussing this required functionality. *See* Ex. 1004, ¶¶ 331-333. A POSITA would have recognized Marr to be one such reference. Just as Salafia requires, Marr's system allows a dispatcher to request and then obtain GPS location data from the caller's phone. *Id.*, ¶ 333.

Marr also articulates several benefits deriving from its specific system and procedure for obtaining phone location. According to Marr, "many modern web-enabled phones include GPS capability" allowing for very accurate location determination. Marr, [0021]. Marr's system is designed to employ this widely used, already built-in functionality to obtain needed location information. Ex. 1004, ¶¶ 334-335. Next, Marr explains that using "web-enabled devices" to collect GPS

information "increase[s] the accuracy and availability of information while putting fewer demands on" a caller's "time, memory, and knowledge." Marr, [0021]. According to Marr, using text messages with URLs to obtain position information is particularly useful "whenever a customer is not particularly technologically savvy about the data-related functions of his or her mobile device." *Id.*, [0038]. So, Marr's system obtains accurate position information without imposing significant burdens on the callers. Ex. 1004, ¶¶ 336-338.

A POSITA would have recognized that using Marr's approach—as opposed to some other method to obtain phone location—would have improved Salafia in the same way discussed in Marr. Ex. 1004, ¶¶ 339-342. Extensive modification of Salafia's system would not be required: phone GPS location would be obtained using web-browser and GPS functionality that is already built into cell phones. Further, callers would be able to supply location information without technical difficulty: they would simply click on links in sent electronic mail or text messages. *Id.* This would ensure that Salafia's call handler has access to GPS location information (as a supplement to any other location information provided by the telephone network) whenever available. *Id.*, ¶ 342.

Next, a POSITA would have recognized that Salafia and Marr have similar purposes, operation, and functionality. Both Salafia and Marr teach dispatcher systems. Both teach systems that receive incoming calls reporting emergency events

and engage in textual communication with callers to obtain further information. And both teach systems that allow for collection of caller position information during a call. *See id.*, ¶¶ 343-345. These similarities would not only have led a POSITA to identify and consider Marr when implementing Salafia, but would have motivated application of Marr's teachings. *See id.*; *see also id.*, ¶¶ 346-350.

A POSITA would also have had more than a reasonable expectation of success. Salafia's system is already designed to obtain caller GPS location and display this to a call handler. Salafia, [0061]. The system also already allows for the transmission of textual messages—including messages with URLs—to callers to obtain information. *E.g.*, *id.*, [0010]-[0011]. And the system already includes "web hosting capabilities." *Id.*, [0018]. Given this, a POSITA would have recognized that Salafia's system is not only able to request and collect the same type of GPS position information discussed in Marr, but already possesses the components required to do so. *See* Ex. 1004, ¶¶ 351-355.

## XI. *GROUND 3*: OBVIOUSNESS OVER BROOKS, SARLOC, AND SALAFIA

The combination of Brooks (Ex. 1005), SARLOC (Ex. 1006), and Salafia (Ex. 1007) also renders claims 1, 5-9, 13-17, and 25-27 obvious.

As explained in Ground 1, Brooks and SARLOC themselves teach everything independent claims 1 and 9 require. While neither reference uses the phrases "call reception module," "outgoing message module," "transmission module," or

"presentation module," they nonetheless teach a system that performs the functions the claims require: calls are received, outgoing messages are generated and transmitted, and responses are presented to a call operator. Moreover, as explained, a POSITA would have considered it obvious that this functionality would all be effectuated by processors running appropriate computer software. *See supra* Section IX.A.1. Patent Owner explained during prosecution that this is all the claimed "module[s]" are: "computer program modules that are executed by processors." Ex. 1003, 168-169.

While Brooks' and SARLOC's disclosures alone are sufficient for purposes of the claims, if it is determined for some reason that additional structural detail is required, the claims would still be obvious when Salafia's teachings are applied. Salafia discusses an emergency call system—including the hardware and software components such a system uses—at length. In particular, according to Salafia, a call handler workstation 202 located at a PSAP 212 receives incoming emergency calls over a cellular and PSTN network. *See* Salafia, [0059]-[0061]; Fig. 2. A POSITA would have understood that the ***"call reception module"*** in Brooks includes the same structure: a workstation at a PSAP would similarly receive emergency calls over cellular and traditional telephone networks. *See* Ex. 1004, ¶¶ 362-365. Next, in Salafia, the workstation 202 provides a call handler with a user interface—a call display window 500 (with associated pop-up windows)—that displays information

such as caller location, includes various selectable options, and allows for text message generation. *See* Salafia, [0044], [0059], [0061], [0078]-[0079], Fig. 5. A POSITA would have understood that Brooks' and SARLOC's ***"presentation module"*** and ***"outgoing message module"*** would be similarly structured: the call handler's / dispatcher's workstation would provide various user interface options (including different types of text messages to send), facilitate the generation of text messages, and display information received from or about the caller. *See* Ex. 1004, ¶¶ 366-367. Salafia also includes an "electronic message processing module 228" that allows its system to transmit messages to and receive messages from callers over the Internet. Salafia, [0062]; Fig. 2. A POSITA would have understood that Brooks' and SARLOC's ***"transmission module"*** would include an analogous module 228 to similarly facilitate transmission of texts generated by the dispatcher's workstation to callers over the Internet. *See* Ex. 1004, ¶¶ 368-369. Additional details regarding Salafia's teaching of the claimed "modules"—along with the limitations added by certain dependent claims not already discussed in Ground 1—is provided above. *See supra* Sections IX.A.1.[1-1]-[1-5], IX.A.2-9.

A POSITA would have been motivated to employ Salafia's structural components when implementing Brooks' and SARLOC's emergency call system and would have expected to succeed when doing so. *See* Ex. 1004, ¶¶ 371-378. Salafia is in the same technical field as Brooks and SARLOC: all three references

relate to systems for communicating and relaying information during emergency calls. *See* Salafia, Abstract; Brooks, Abstract; SARLOC, 7. Salafia's system is also designed in a way that provides the very functionality Brooks' system requires: it receives emergency calls and then facilitates textual messaging with callers. This similarity in purpose and function would have provided a POSITA with a strong motivation to employ Salafia. Ex. 1004, ¶¶ 371-373. Moreover, Salafia uses well-known, widely available componentry, including public safety answering point hardware, workstations, displays, and modules that are designed to communicate over known networks like a PSTN and the Internet. *Id.*, ¶¶ 374-375. This would have further motivated use of Salafia and led a POSITA to conclude that doing so would result in success. Brooks and SARLOC already detail how their emergency call system is to function. Salafia simply identifies the well-known components that would allow Brooks and SARLOC to perform these functions. *Id.*, ¶ 375.

Additionally, a POSITA would have recognized that use of Salafia's system would have improved Brooks' and SARLOC's system. This would have further motivated combination. *Id.*, ¶¶ 376-378. In particular, the combined system would be able to not only request and receive GPS location and textual information, but could also request that callers send images of the emergency location. As explained in Salafia, this allows the "call handler" to "gain a better understanding of the emergency situation" and more "exact" information about the "location of the

caller." Salafia, [0010]-[0011]. A POSITA would have understood that this would have enhanced Brooks' and SARLOC's ability to both gather information from a caller and then appropriately respond to the caller's emergency. Ex. 1004, ¶ 378.

## XII. CONCLUSION

For the foregoing reasons, Petitioner respectfully requests institution of IPR and cancellation of claims 1, 5-9, 13-17, and 25-27.

Respectfully submitted,

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## CERTIFICATE OF WORD COUNT

The undersigned certifies that the foregoing PETITION FOR *INTER PARTES* REVIEW complies with the type volume limitation in 37 C.F.R. § 42.24. According to the utilized word-processing system's word count, the petition—excluding the caption, table of contents, table of exhibits, mandatory notices, certificate of word count, and certificate of service—contains 13,932 words.

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## CERTIFICATE OF SERVICE

The undersigned hereby confirms that the foregoing PETITION FOR IPR and associated exhibits were caused to be served on May 9, 2025 via overnight courier upon the following counsel of record for Patent Owner:

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