UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CENTRALSQUARE TECHNOLOGIES, LLC,
Petitioner,

v.

CARBYNE, LTD,
Patent Owner.

Case No. IPR2025-01179
U.S. Patent No. 11,689,383

DECLARATION OF STUART J. LIPOFF

TABLE OF CONTENTS

I. INTRODUCTION

1. I have been retained by CentralSquare Technologies, LLC ("Petitioner") as an independent expert consultant in this proceeding before the Patent Trial and Appeal Board of the United States Patent and Trademark Office.

2. I am over 18 years of age and, if I am called upon to do so, I would be willing and able to testify as to the matters set forth herein.

3. My compensation is in no way contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of any related proceeding.

4. I understand that this proceeding involves U.S. Patent No. 11,689,383 ("the '383 patent") (Ex. 1001). The application for the '383 patent was filed September 13, 2022, as U.S. Patent Application No. 17/943,956.

5. I have been asked by Petitioner to provide my opinion on whether the claims of the '383 patent would have been obvious to a person of ordinary skill in the art ("POSITA") at the time of the earliest claimed priority date of the '383 patent. In performing my analysis, I have been asked to assume that the priority date is August 13, 2017 the date of U.S. Provisional Application No. 62/544,835, to which the '383 patent claims priority. My opinions are set forth below.

6. Throughout this declaration, I refer to specific pages, figures, or line numbers of various exhibits. These citations are illustrative and are not intended to suggest that they are the only support for the propositions for which they are cited.

II. SUMMARY OF OPINIONS

7. This declaration considers claims 1-20 of the ’383 patent. Below, I set forth the opinions I have formed, the conclusions I have reached, and the bases for these opinions and conclusions. I believe the statements contained in this declaration to be true and correct to the best of my knowledge.

8. Based on my experience and knowledge of the art at the time of the earliest claimed priority date of August 13, 2017, it is my opinion that claims 1-20 of the ’383 patent would have been obvious based on the asserted grounds discussed below. A person of ordinary skill in the art (“POSITA”) would have found it obvious to combine the prior art references I cite and would have been motivated to do so before the priority date.

III. QUALIFICATIONS AND BACKGROUND

9. I believe that I am well qualified to serve as a technical expert in this matter based upon my qualifications, discussed in detail below.

10. My *curriculum vitae* (“CV”) is included as Exhibit 1004.

11. I am currently president of IP Action Partners Inc., a consulting practice that serves the telecommunications, information technology, media, electronics, and e-business industries.

12. I earned a Bachelor of Science degree in Electrical Engineering in 1968 and a second Bachelor of Science degree in Engineering Physics in 1969, both from Lehigh University. I also earned a Master of Science degree in Electrical Engineering from Northeastern University in 1974, and then a Master of Business Administration degree from Suffolk University in 1983.

13. I hold a Federal Communications Commission ("FCC") General Radiotelephone License. I also hold a Certificate in Data Processing ("CDP") from the Association for Computing Machinery ("ACM")-supported Institute for the Certification of Computing Professionals ("ICCP").

14. I am a registered professional engineer in the Commonwealth of Massachusetts also in the State of Nevada.

15. I am a fellow of the Institute of Electrical and Electronics Engineers ("IEEE") Consumer Electronics, Communications, Computer, Circuits, and Vehicular Technology Groups. I have been a member of the IEEE Consumer Electronics Society National Board of Governors (formerly known as the Administrative Committee) since 1981, and I was Boston Chapter Chairman of the IEEE Vehicular Technology Society from 1974 to 1976. I previously served as the

1996-1997 President of the IEEE Consumer Electronics Society, and as Chairman of the Society's Technical Activities and Standards Committee. I also served as Vice President of Publications for the Society, and as VP of Industry Activities & Standards. I currently serve on the Board of Governors as The Historian for the society. I have also served as an Ibuka Award committee member to select the recipient of the IEEE's award in the field of Consumer Electronics.

16. I have also prepared and presented many papers at IEEE and other professional meetings. For example, in Fall 2000, I served as general program chair for the IEEE Vehicular Technology Conference on advanced wireless communications technology. I have also organized sessions at The International Conference on Consumer Electronics and was the 1984 program chairman. I also conducted an eight-week IEEE sponsored short course on Fiber Optics System Design. I was awarded IEEE's Centennial Medal in 1984 and I was awarded the IEEE's Millennium Medal in 2000. A listing of my publications is included as part of my CV (Ex. 1004).

17. As Vice President and Standards Group Chairman of the Association of Computer Users ("ACU"), I served as the ACU representative to the ANSI X3 Standards Group. I also served as Chairman of the task group on user rule compliance for the FCC's Citizens Advisory Committee on Citizen's Band ("CB") radio ("PURAC").

18. I have been elected to membership in the Society of Cable Television Engineers ("SCTE"), the ACM, and The Society of Motion Picture and Television Engineers ("SMPTE"). I also served as a member of the USA advisory board to the National Science Museum of Israel, presented a short course on international product development strategies as a faculty member of Technion Institute of Management in Israel, and served as a member of the board of directors of The Massachusetts Future Problem Solving Program.

19. I am a named inventor on seven United States patents and have several publications on data communications topics in Electronics Design, Microwaves, EDN, The Proceedings of the Frequency Control Symposium, Optical Spectra, and IEEE publications.

20. For 25 years, I worked for Arthur D. Little, Inc. ("ADL"), where I became Vice President and Director of Communications, Information Technology, and Electronics ("CIE"). At ADL, I was responsible for the firm's global CIE practice in laboratory-based contract engineering, product development, and technology-based consulting. While employed at ADL, my projects included multiple projects involving call center hardware and systems including projects on behalf of suppliers of technology as well as assisting end users design, procure, and deploy call center technology. End users I have assisted have include organizations that deployed the most advanced sophisticated technology such as electric power

utilities and financial institutions.

21. Prior to my time at ADL, I served as a Section Manager for Bell & Howell Communications Company for four years. Prior to working at Bell & Howell, I served as a Project Engineer for Motorola's Communications Division for three years. At both Bell & Howell and Motorola, I had project design responsibility for wireless communication and paging products.

IV. MATERIALS CONSIDERED

22. In forming my opinions, I have reviewed the following documents, as well as other documents cited throughout this declaration:

Exhibit	Description
1001	U.S. Patent No. 11,689,383 to Dizengof ("the '383 patent")
1002	Prosecution History of U.S. Patent No. 11,689,383
1005	U.S. Patent No. 9,762,733 to Ramanujaiaha et al. ("Ramanujaiaha")
1006	U.S. Patent No. 9,420,099 to Krishnan et al. ("Krishnan")
1007	Scott B. Guthery, Mary J. Cronin, *Mobile Application Development with SMS and the SIM toolkit*, McGraw-Hill (2002).

23. I have also relied on my education, experience, research, training, and knowledge in the relevant art, and my understanding of legal principles described in this declaration.

24. All of the opinions contained in this declaration are based on the documents I reviewed and my knowledge and professional judgment. My opinions have also been guided by my understanding of how a POSITA would have understood the claims of the ’383 patent at the time of the earliest claimed priority date.

25. I reserve the right to supplement and amend any of my opinions in this declaration based on documents, testimony, and other information that becomes available to me after the date of this declaration.

V. LEGAL STANDARDS

26. I am an engineer and not a lawyer. My understanding of the legal standards to apply in reaching the conclusions in this declaration is based on discussions with counsel for Petitioner, my experience applying similar standards in other patent-related matters, and my reading of the documents submitted in this proceeding. I have applied these legal standards in preparing this declaration.

27. I have been informed that there are two ways in which prior art may render a patent claim unpatentable. First, I have been informed that the prior art can “anticipate” a claim. Second, I have been informed that the prior art can render a claim “obvious” to a POSITA. I understand that a claim is patentable if it was not anticipated and would not have been rendered obvious by the prior art at the effective filing date of the patent.

28. I have been informed that a dependent claim is a patent claim that refers back to another patent claim. I have been informed that a dependent claim includes all of the limitations of the claim to which it refers plus its own limitation(s).

29. I have been asked to provide my opinions as to whether the cited prior art discloses or renders obvious claims 1-20 of the ’383 patent from the perspective of a POSITA at the time of the earliest claimed priority date of August 13, 2017 as described in more detail below.

30. I have been informed that in IPR proceedings, such as this one, the party challenging the patent bears the burden of proving unpatentability by a preponderance of the evidence. I understand that a preponderance of the evidence means “more likely than not.”

31. For purposes of this declaration, I have been asked to provide my opinions on issues regarding unpatentability. I have been informed of the following legal standards, which I have applied in forming my opinions.

A. Level Of Ordinary Skill

32. I have been informed that a POSITA is determined by considering several factors, including the (i) type of problems encountered in the art; (ii) prior art solutions to those problems; (iii) rapidity with which innovations are made;

(iv) sophistication of the technology; and (v) educational level of active workers in the field.

33. I have been instructed to assume that a POSITA is not a specific real individual, but rather a hypothetical individual having the qualities reflected by the factors discussed above. A POSITA is assumed to be person of ordinary creativity familiar with the prior art as of the priority date of the patent at issue.

B. Prior Art

34. I have been advised and understand that the information used to evaluate whether an invention was new and not obvious when made is generally referred to as "prior art." I understand that in an IPR proceeding, prior art includes patents and printed publications that existed before the earliest claimed priority date or the earliest filing date of the patent (which I have been informed is also called the "effective filing date"). I have been informed and understand that a patent or published patent application is prior art if it was filed before the earliest filing date of the claimed invention and that a printed publication is prior art if it was publicly available before the earliest filing date.

C. Anticipation

35. I have been informed that under 35 U.S.C. § 102, a patent claim is unpatentable for anticipation if the claimed subject matter was patented or described in a printed publication before the effective filing date of the claimed

invention. I have been informed that this is referred to as unpatentability by anticipation. I have been informed that a patent claim is anticipated under § 102 if a single prior art reference discloses all the limitations of the claimed invention. I understand that limitations may be expressed or inherent such that the limitation is essential to the prior art.

D. Obviousness

36. I have been informed that for obviousness under 35 U.S.C. § 103, a patent claim is unpatentable if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a POSITA to which said subject matter pertains at the time the invention was made. I have been informed that this is referred to as unpatentability by obviousness.

37. I have been informed that an obviousness analysis includes the following considerations:

a. Determining the scope and content of the prior art;

b. Ascertaining the differences between the prior art and the claims at issue;

c. Resolving the level of ordinary skill in the pertinent art; and

d. Considering evidence of secondary indicia of nonobviousness (if available).

38. I have been informed that the relevant time for considering whether a claim would have been obvious to a POSITA is the time of invention. For my obviousness analysis, counsel for Petitioner instructed me to assume that the date of invention for the challenged claims is August 13, 2017. My opinions would not change if I assumed another, e.g., later, date of invention.

39. I have been informed that a reference may be modified or combined with other references or with a POSITA's own knowledge if the person would have found the modification or combination obvious. I have also been informed that a POSITA is presumed to know all the relevant prior art, and the obviousness analysis may take into account the inferences and creative steps that a POSITA would employ.

40. I have been informed that an obviousness determination must be made from the perspective of a POSITA. I have also been informed that there is no requirement that the prior art contain an express suggestion to combine known elements to achieve the claimed invention, and that a suggestion to combine known elements to achieve the claimed invention may come from the prior art as a whole or individually. Also, the obviousness analysis may rely on the inferences and creative steps a POSITA would employ, as filtered through his or her knowledge as of the priority date. But I understand that obviousness grounds cannot be

sustained by mere conclusory statements and must include some articulated reasoning and rationale to support a legal conclusion of obviousness.

41. In determining whether a prior art reference could have been combined with another prior art reference or other information known to a POSITA, I have been informed that the following principles may be considered:

a. A combination of familiar elements according to known methods is likely to be obvious if it yields predictable results;
b. The substitution of one known element for another is likely to be obvious if it yields predictable results;
c. The use of a known technique to improve similar items or methods in the same way is likely to be obvious if it yields predictable results;
d. The application of a known technique to a prior art reference that is ready for improvement to yield predictable results;
e. Any need or problem known in the field and addressed by the reference can provide a reason for combining the elements in the manner claimed;
f. A person of ordinary skill often will be able to fit the teachings of multiple references together like a puzzle; and

g. The proper analysis of obviousness requires a determination of whether a POSITA would have a "reasonable expectation of success"—but not "absolute predictability" of success—in achieving the claimed invention by combining prior art references.

42. I have been informed that, when a work is available in one field, design alternatives and other market forces can prompt variations of it, either in the same field or in another. I have been informed that if a POSITA could have implemented a predictable variation and would have seen the benefit of doing so, that variation is likely to have been obvious. I have been informed that, in many fields, such as the mechanical or electrical arts, market demand—not scientific literature—may drive design trends. I have been informed that, when there was a design need or market pressure and there are a finite number of predictable solutions, a POSITA would have had a good reason to pursue those known options.

43. I have been informed that the law permits the application of "common sense" in examining whether a claimed invention would have been obvious to a POSITA. For example, I have been informed that combining familiar elements according to known methods and in a predictable way may suggest obviousness when such a combination would yield nothing more than predictable results. I understand, however, that a claim is not obvious merely because every claim

element is disclosed in the prior art. A party asserting obviousness must provide a specific motivation to combine or modify the references as recited in the claims and explain why one skilled in the art would have reasonably expected to succeed in doing so.

44. I have been informed that there is no rigid rule that a reference or combination of references must contain a "teaching, suggestion, or motivation" to combine references. But I also understand that the "teaching, suggestion, or motivation" test can be a useful guide in establishing a rationale for combining elements of the prior art. I have been informed that this test poses the question as to whether there is an express or implied teaching, suggestion, or motivation to combine prior art elements in a way that results in the claimed invention, and that it helps to counter the use of hindsight, which is impermissible. Likewise, if a prior art reference "teaches away" from a potential prior art combination, then a motivation to combine may not exist.

45. I am not aware of any evidence of secondary considerations, such as unexpected results, industry skepticism, long-felt unresolved need, commercial success, praise by others, or copying that would alter my opinions set forth below.

46. I have been informed that, in an obviousness analysis, prior art must be analogous art to the patent being considered. I have been informed that a prior art reference is considered to be analogous, or in the same field of art, if the

reference is either (1) in the same field of endeavor as the challenged patent, regardless of the problems the challenged patent and the prior art address, or (2) reasonably pertinent to the particular problem being solved by the challenged patent.

VI. THE '383 PATENT (Ex. 1001)

47. The '383 patent was filed on September 13, 2022 , issued on June 27, 2023, and claims priority to U.S. Provisional Application No. 62/544,835 filed August 13, 2017. Ex. 1001, cover page.

48. The '383 patent discloses systems and methods "for streaming real-time data from a user device to a call center." Ex. 1001, 1:25-28, 4:25-27. The system includes one or more user devices (UD), such as "a smartphone, a mobile phone, a laptop," etc., and one or more "call centers" configured to receive "calls" and "real-time data captured by the [user device]" over a network. Ex. 1001, 5:16-35. The user device "may connect to the network 110 using voice calls as well as voice over internet protocol (VOIP)." Ex. 1001, 5:16-26. Figure 1, below, illustrates the networked system for streaming "real-time data" between a "user device" and a "call center." Ex. 1001, 4:5-6, FIG. 1.

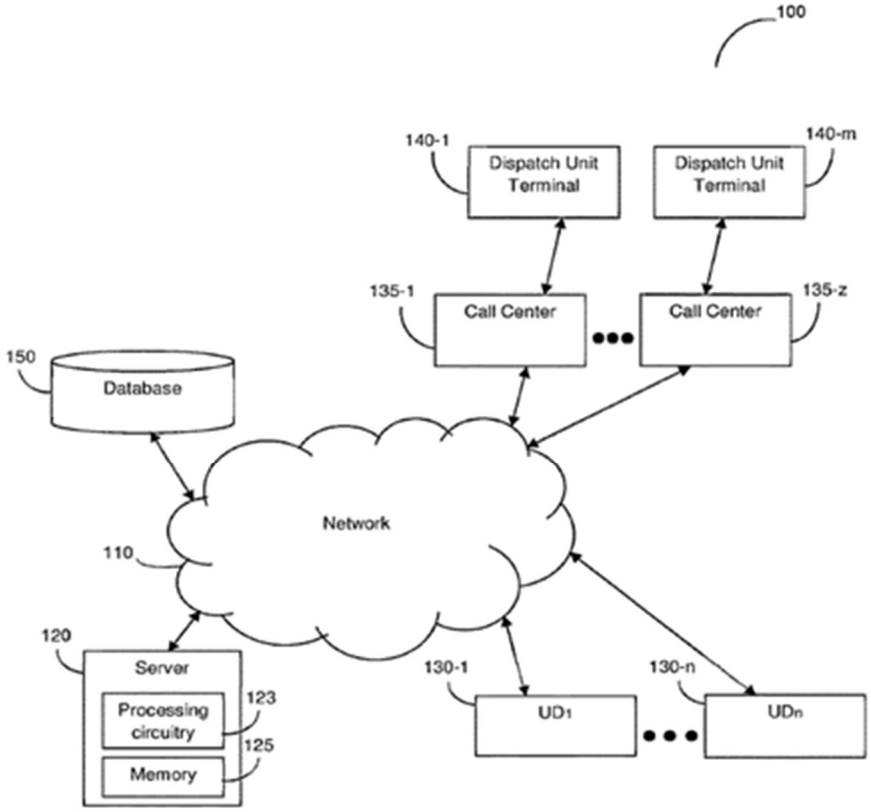


FIG. 1

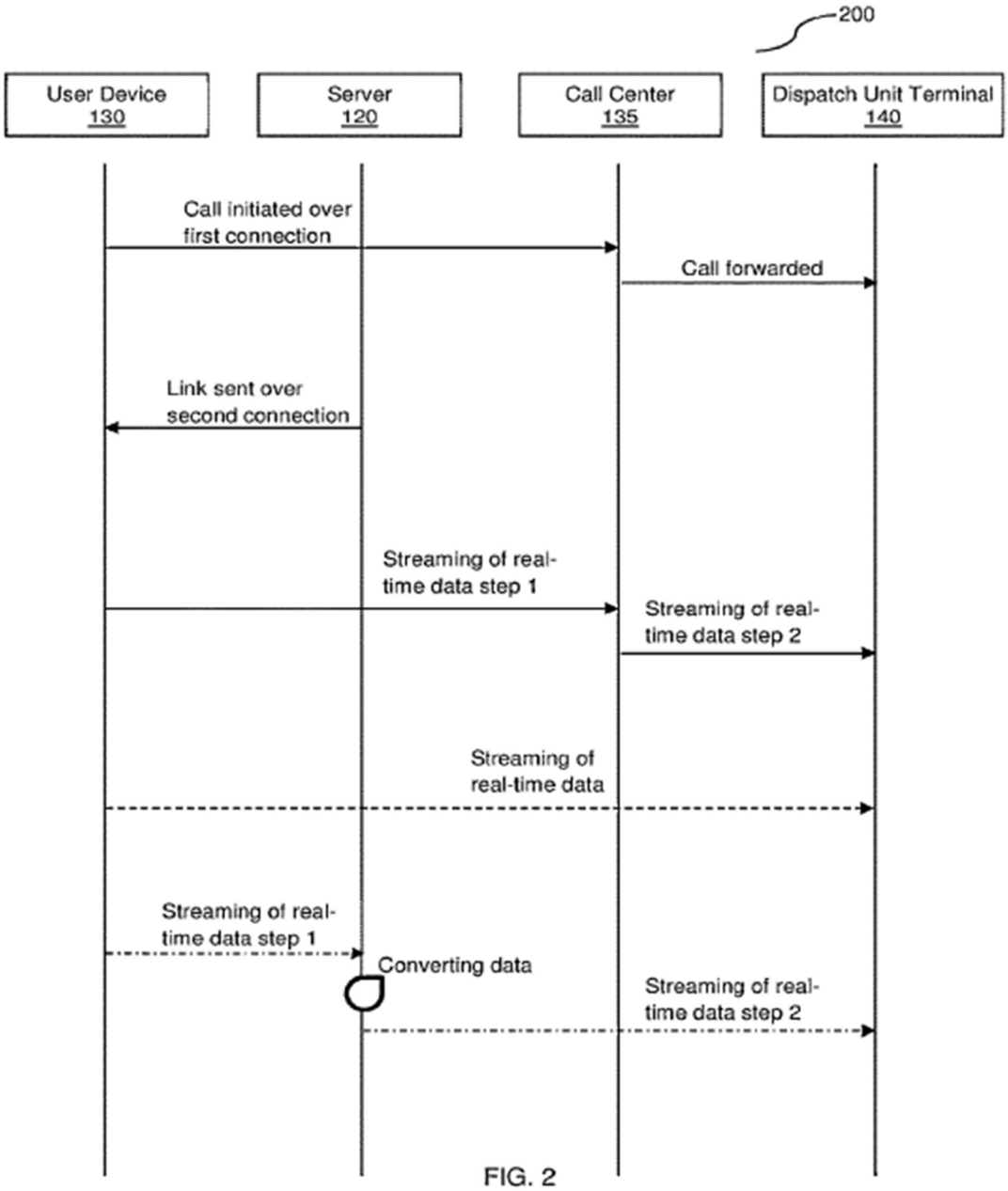
Ex. 1001, FIG. 1.

49. In an exemplary method, UD 130 establishes a "first connection" with a call center over a "cellular network" by dialing 9-1-1. Ex. 1001, 6:58-61, 7:38-41, 8:36-40. The call may also be "forwarded" to a dispatch unit terminal (DUT), "such as police, firefighting, ambulance services, and the like." Ex. 1001, 1:39-44, 5:40-44. "When the call is answered, or while still in queue" a server 120 detects the first connection and "identifies the UD 130" by a "unique identifier" such as a "phone number or other unique identifier associated with the user device." Ex. 1001, 6:7-9, 7:42-55, 8:47-50; *see also* 6:19-22 ("The identifier may be, for

example, a code snippet, a randomly generated string, a signature, and so on."). Using the identifier, the server sends an "electronic message" containing a "link" to the UD "over a second connection over the network." Ex. 1001, 6:10-15. The electronic message may be "a short message service (SMS), an MMS, an electronic mail (email) message, and the like." Ex. 1001, 6:15-17. The "second connection" may also be an SMS. Ex. 1001, 7:43-35 ("the server 120 identifies the UD 130 and sends a link over a second connection, such as an SMS, to the UD 130").

50. When the user selects the link, "a web browser is launched, enabling the streaming of real-time data, such as video, audio, location data, and the like, from the UD 130 to the call center 135. The call center then forwards the real-time data to the DUT 140." Ex. 1001, 7:45-49; *see also* Ex. 1001, 2:66-3:5, 6:26-32. In one example, "streaming the real-time data" (e.g., audio, video, or location data) "is achieved using a Web Real-Time Communication (WebRTC) API that enables real-time communication over peer-to-peer connections." Ex. 1001, 6:61-64. Here, selecting the link "cause[s] the UD 130 to establish a WebRTC session using a WebRTC API that would allow streaming real-time data from the UD 130 to the call center 135 and/or the DUT 140." Ex. 1001, 6:64-7:2.

51. Figure 2 below illustrates the exemplary method for directing communications between a user device and a call center "for emergency or non-emergency situations." Ex. 1001, 2:21-31, 5:9-25, FIG. 2.



Ex. 1001, FIG. 2.

VII. LEVEL OF ORDINARY SKILL IN THE ART

52. In my opinion, a person of ordinary skill in the art ("POSITA") in the field of the '383 patent would have had at least a bachelor's degree in electrical engineering, computer science, or a related discipline, and two years of experience in telecommunication systems or services using Internet protocols for sharing multimedia. Relevant work experience can substitute for formal education and additional education could substitute for work experience.

VIII. CLAIM CONSTRUCTION

53. I understand that, in this proceeding, the claims are construed according to their ordinary and customary meaning, in light of the specification and prosecution history, as understood by a POSITA at the time of the invention. I understand that this is the same claim construction approach used in district court litigation.

54. In my opinion, none of the claim terms in the '383 patent require an explicit construction.

IX. THE PRIOR ART

55. As I explain in Section X below, it is my opinion that claims 1-6, 8-13, and 15-19 are disclosed by or obvious over Ramanujaiaha. It is also my opinion that claims 1-20 would have been obvious over a combination of

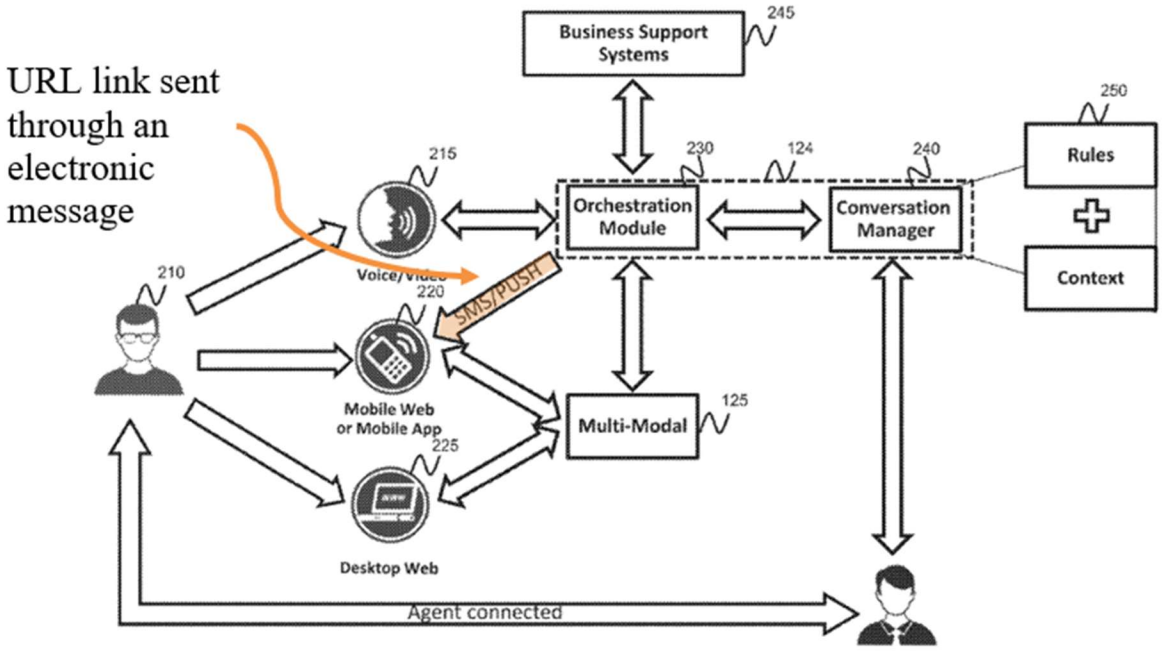
Ramanujaiaha and Krishnan, each of which I have been instructed to assume is prior art.

A. Ramanujaiaha (Ex. 1005)

56. Ramanujaiaha was filed on September 21, 2016 and issued on September 12, 2017. Ramanujaiaha, cover page. I understand that Ramanujaiaha is prior art to the ’383 patent.

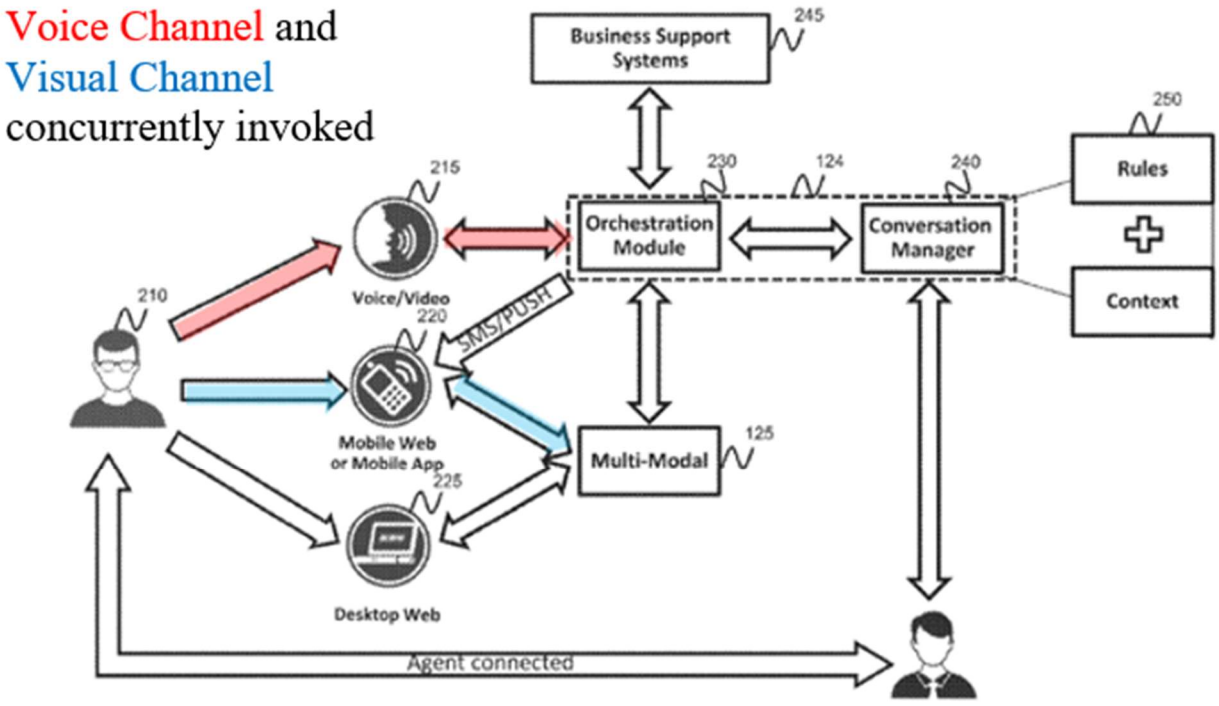
57. Ramanujaiaha discloses systems and methods for “manag[ing] resources (e.g. personnel, computers, software programs, data management, and telecommunication equipment) to enable delivery of services via telephone or other communication mechanisms.” Ramanujaiaha, 6:13-17. These “services” include “emergency response.” Ramanujaiaha, 6:17-20.

58. As Ramanujaiaha explains, an emergency contact center (also referred to as a call center) may “identify” that a “caller” (also called a “user”) is engaging with the contact center “via a smart phone or a mobile phone” and send “a link including a unique URL or corresponding to the user’s phone number … to the user’s device via an SMS…, to invite the user to a multimodal session.” Ramanujaiaha, 12:5-13, FIG. 2.



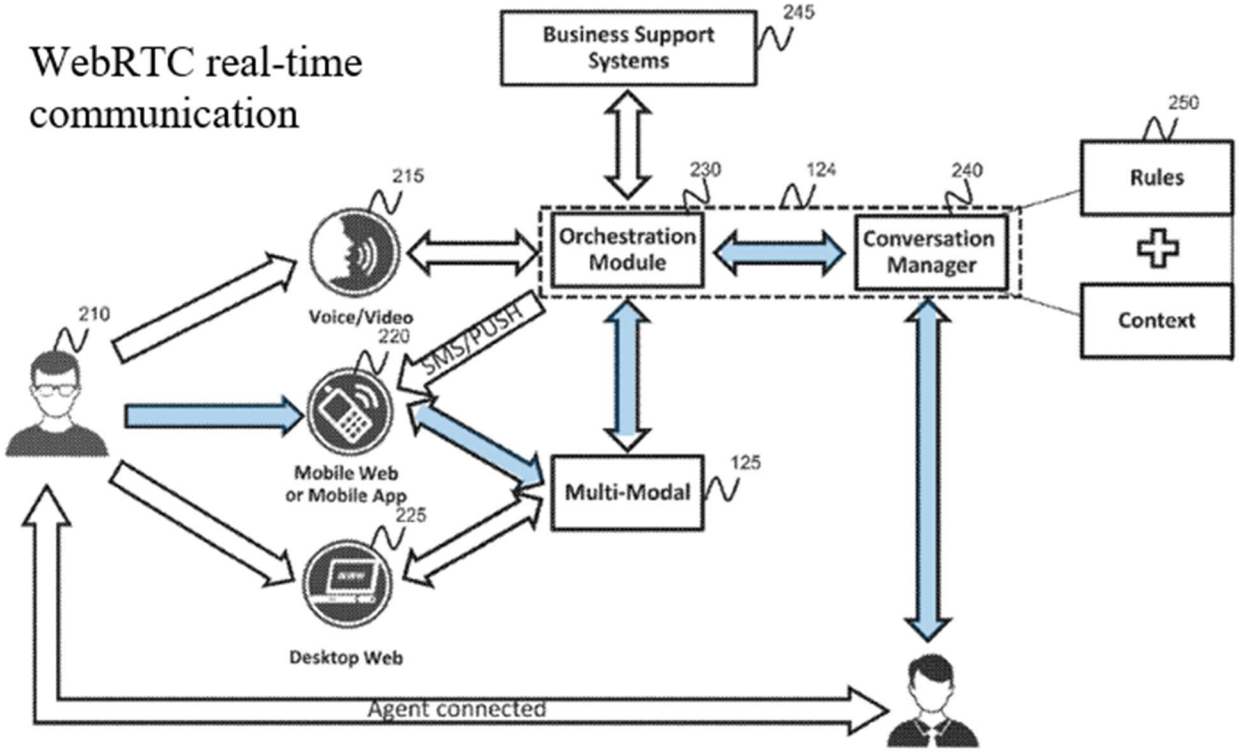
Ramanujaiaha, FIG. 2 (annotated).

59. As Ramanujaiaha explains, "clicking on the link" opens a "visual communication channel" using the "mobile web" such that the user is "engaged" with the call center "through two modalities, a voice media channel that uses the media connection device 215, and a visual media channel that uses the … mobile web 220." Ramanujaiaha, 12:14-26; *see also* 10:38-42 (explaining the user device may access a visual interface device "such as mobile web browser … to render visual content."), 10:55-59 (explaining that a voice channel and a visual channel are concurrently invoked"). Annotated Figure 2 below illustrates a multimodal communication between the user's mobile device and the emergency contact center.



Ramanujaiaha, FIG. 2 (annotated).

60. Using the visual channel, the user may transmit "video communications" to the emergency contact center, using e.g., "web real-time communication" so to that the center can provide emergency response service. Ramanujaiaha 9:46-52, 10:34-42, FIG. 2. Annotated Figure 2 below illustrates a pathway of the visual communication from the mobile device to the call center, and its agent.



Ramanujaiaha, FIG. 2 (annotated).

B. Krishnan (Ex. 1006)

61. Krishnan was filed on March 30, 2015, and issued on August 16, 2016. Krishnan, cover (code (45)). I understand that Krishnan is prior art to the '383 patent.

62. Krishnan discloses a method for facilitating communication between an "emergency caller" and an emergency call center, such as a "Public Safety Access Point (PSAP)" over a "cellular" or "other type of packet-switched or circuit switched network." Krishnan, Abstract, 1:41-49, 2:4-21, 4:28-47, FIGS. 1-3. Figure 2 illustrates a "caller 204" placing an emergency voice call using a "[customer] communication device 206," such as a "cellular phone" or "smart

phone … adapted to support video, audio, text, and/or data communications" to report an "emergent event 202." Krishnan, 4:61-62, 5:46-56, 6:43-49. The call is transmitted over the "communication network" to the "PSAP agent 112" via a "PSAP server." Krishnan, 1:44-49, 7:7-17, FIG. 2.

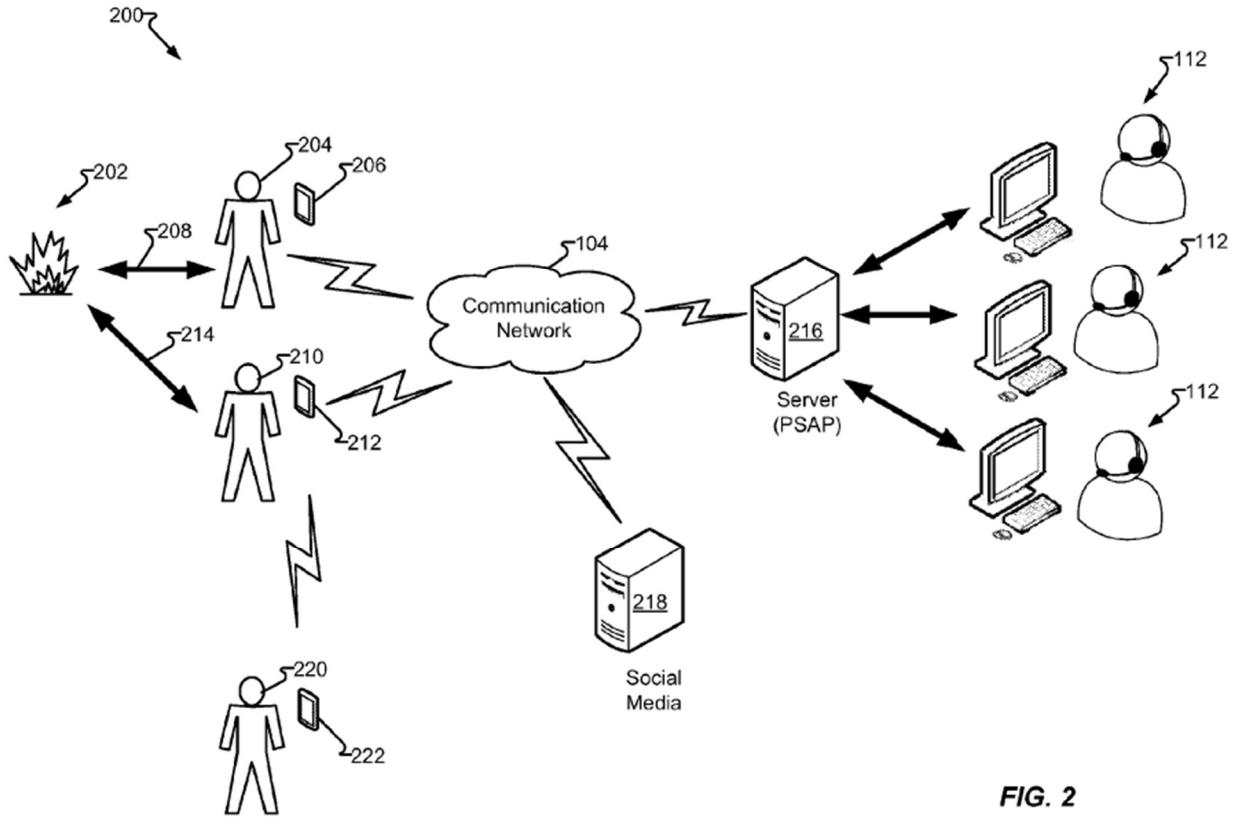


FIG. 2

Krishnan, FIG. 2.

63. To improve emergency reporting, Krishan (like Ramanujaiaha) also utilizes multiple data channels to enable the user to maintain a voice call with the emergency center while sending video footage of the emergent event. Krishnan, 1:41-49. The emergency caller may be "asked to establish a trusted data channel (e.g., a WebRTC call) with a PSAP system then provide their perspective about the

event via the data channel." Krishnan, 1:41-45, 7:27-35. For example, if the caller initiates "a voice only communication channel, PSAP server 216, may *prompt the user* device and/or user to cause the user device to establish a data interaction connection" by "*sending a text message with a link to cause the establishment of the data channel*. The establishment of a data channel may convey packets, such as Internet Protocol (IP) packets over communication network 104 and may further comprise a WebRTC, HTML5, or other data channel paradigm." Krishnan, 7:27-35 (emphases added). In this way, the PSAP "can use *information incoming from each of the data channels* (*e.g.*, pictures, *videos*, text information, etc.) to help determine information about the event." Krishnan, 1:45-49 (emphases added), 10:56-66 (describing "sending video of an emergent event" while "audio communications" are provided via "voice-only channel"), 11:28-31, FIG. 3.

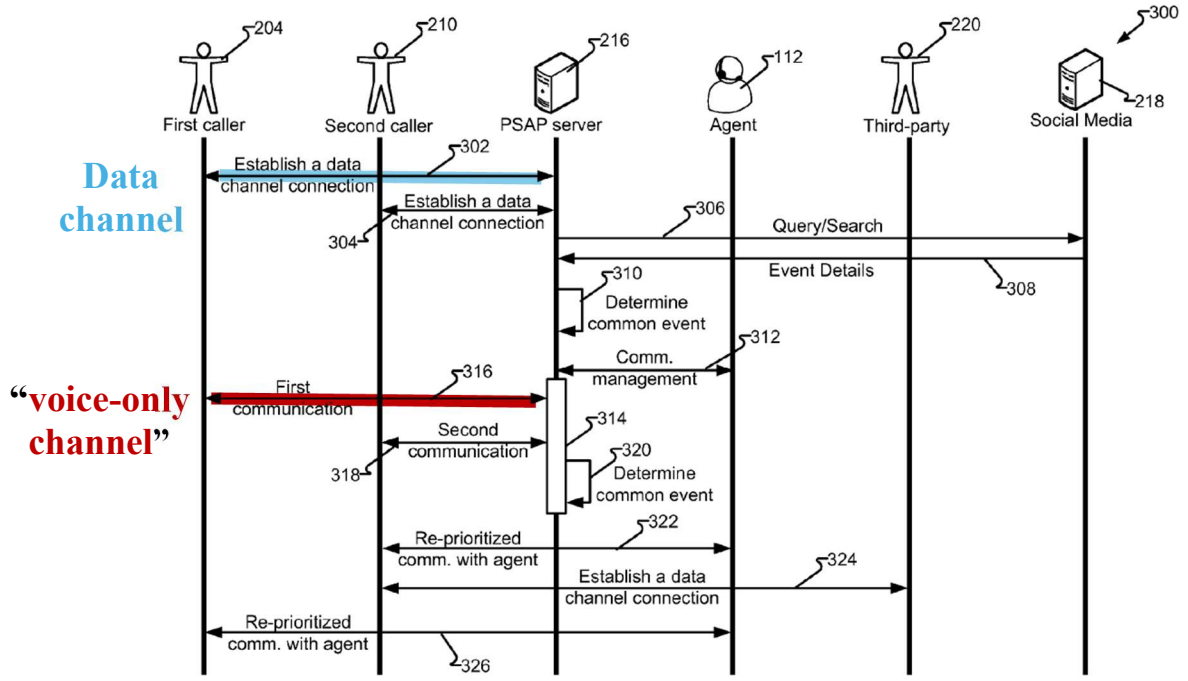


FIG. 3

Krishnan, FIG. 3 (annotated).

C. Ramanujaiaha and Krishnan Are Analogous Art

64. In my opinion, Ramanujaiaha and Krishnan are each directed to the same field of endeavor as the '383 patent: streaming data from a user device. *Compare* Ramanujaiaha, Abstract, 5:6-21, 10:28-38 and Krishnan, Abstract, FIG. 3 *with* Ex. 1001, Abstract, 1:25-28. Ramanujaiaha and Krishnan are also directed to the same problem as the '383 patent: improving call center response services (such as emergency response services) by allowing a user to provide visual and audio communications. *Compare* Ramanujaiaha, 5:6-21, 6:13-20, 10:28-38, FIG. 2 and Krishnan, Abstract, FIG. 3 *with* Ex. 1001, Abstract, 1:45-50, FIG. 3. Thus, it is my opinion that Ramanujaiaha and Krishnan are analogous art to the '383 patent.

X. GROUNDS OF UNPATENTABILITY

65. Based on my review of the materials set forth above, including my application of the knowledge of a POSITA, it is my opinion that claims 1-20 of the '383 patent were disclosed and/or would have been obvious to one of ordinary skill in the art as of August 13, 2017.

66. In particular, it is my opinion that claims 1-20 of the '383 patent were disclosed and/or would have been obvious based on the following grounds:

Grounds	Claims	Basis	Prior Art
1A	1-6, 8-13, and 15-19	§102	Ramanujaiaha
1B		§103	
2	1-20	§ 103	Ramanujaiaha and Krishnan

A. Grounds 1A-1B: Claims 1-6, 8-13, and 15-19 Are Anticipated or Obvious over Ramanujaiaha.

1. Independent Claim 1

67. In my opinion, Ramanujaiaha alone anticipates or renders obvious claims 1-6, 8-13, and 15-19 for reasons discussed below.

a. [1Preamble]: "A method implemented via execution of computing instructions configured to run at one or more processors, the method comprising:"

68. Ramanujaiaha discloses [1Preamble] because it discloses that its "various [disclosed] functionalities" (methods) may be implemented using "one or more processors, in one or more computing devices 1500 (e.g., FIG. 15A, FIG. 15B), executing computer program instructions." Ramanujaiaha, Abstract, 35:10-18.

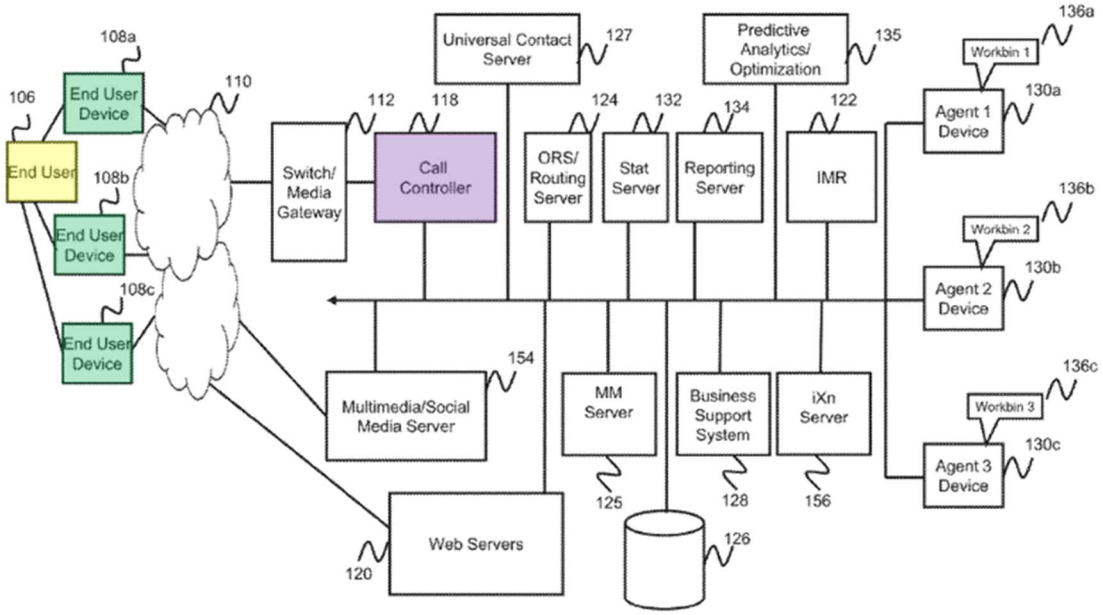
69. Ramanujaiaha's system uses servers that "may each include one or more processors executing computer program instructions and interacting with other system components for performing the various functionalities …. The computer program instructions are stored in a memory implemented using a standard memory device, such as, for example, a random access memory (RAM). The computer program instructions may also be stored in other non-transitory computer readable media such as, for example, a CD-ROM, flash drive, or the like." Ramanujaiaha, 9:30-45. For example, Ramanujaiaha explains that a "contact center system manages resources (e.g. personnel, *computers, software programs*, data management, and telecommunication equipment) to enable delivery of services via telephone or other communication mechanisms." Ramanujaiaha, 6:13-17 (emphasis added).

70. The contact center's "services" include "emergency response" services as I explain in [1a]-[1b], below. Ramanujaiaha, 6:17-20.

b. [1a]: "obtaining a phone number of a mobile device used by a user making an emergency call,"

71. Ramanujaiaha discloses [1a] because it discloses *receiving*, at an "emergency service" contact center, "inbound communications (e.g., telephony calls)" from one or more "end users" operating "one or more end user devices" such as a "wireless phone, smart phone, personal computer, electronic tablet, and/or the like" and "*extract[ing]*… the caller's telephone number" once received. Ramanujaiaha, 6:13-32, 7:11-14.

72. As Ramanujaiaha explains, each emergency call center may be associated with a "call controller" configured to "process PSTN calls, VoIP calls, and the like." Ramanujaiaha, 7:4-5. When the center receives a call from the user's mobile device (smart phone, wireless phone, etc.), the controller "extract[s] data about the customer interaction such as the caller's telephone number, often known as the automatic number identification (ANI) number, or the customer's internet protocol (IP) address, or email address." Ramanujaiaha, 7:10-16. Annotated Figure 1 below illustrates an emergency call center system including a call controller for extracting a telephone number during an interaction between the end user's (customer's) end user device and call center:



Ramanujaiaha, FIG. 1 (annotated).

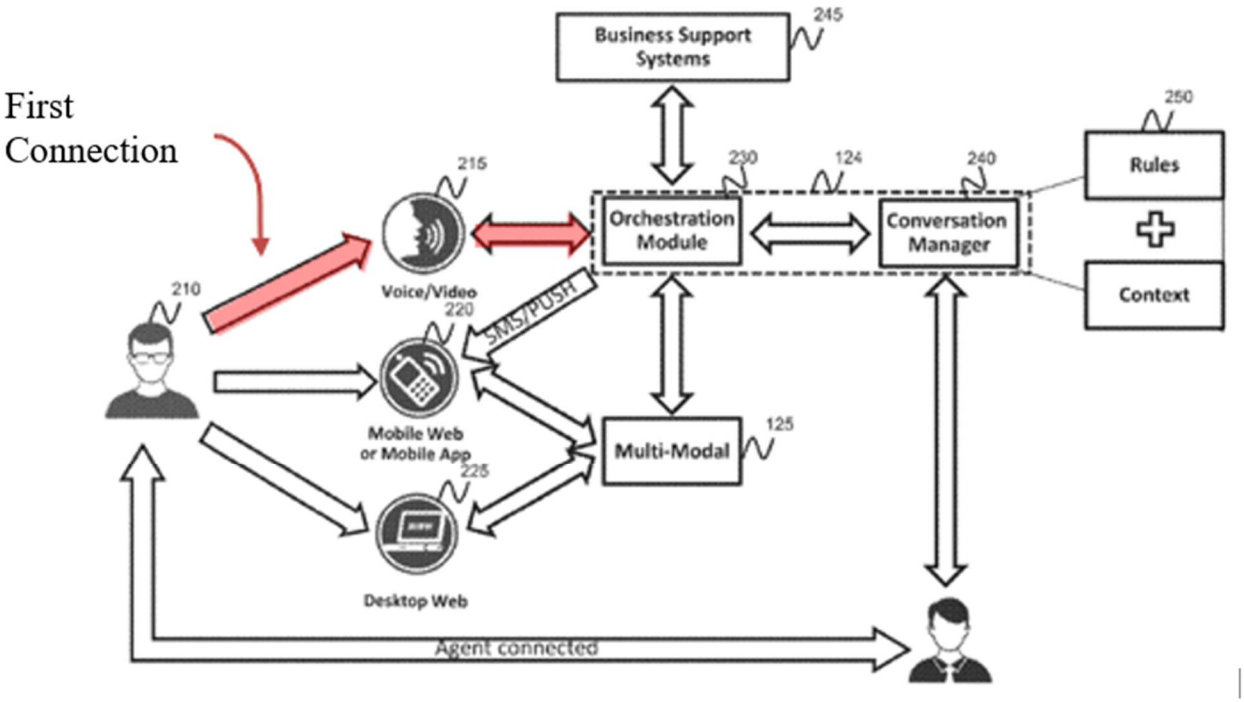
73. Thus, it is my opinion that Ramanujaiaha discloses obtaining a phone number (telephone number) of a mobile device (smart phone, wireless phone, etc.) used by a user making an emergency call (end user calling an emergency call center).

c. [1b]: "wherein the emergency call is conducted with a recipient through a first connection;"

74. Ramanujaiaha discloses [1b] because as I explain for [1a], the "telephony call" is received by a "call center" (recipient) through a first "communication channel[] e.g., medium[] or modalit[y])" such as PSTN, VoIP, or "the like" (first connection). Ramanujaiaha, 5:9-16, 7:4-5.

75. For example, Ramanujaiaha discloses that "[i]nbound and outbound communications from and to the end user devices 108 may traverse a telephone,

cellular, and/or data communication *network* 110 depending on the type of device that is being used." Ramanujaiaha, 6:33-36 (emphases added); *see also* 5:9-16 (explaining that "interactions between contact center resources (e.g., live agents and self-service systems) and outside entities (e.g., customers) may be conducted over communication channels such as voice/telephony (e.g., telephone calls, voice over IP or VoIP calls, etc.)." The communications network 110 may include "a wireless carrier network including a code division multiple access (CDMA) network, global system for mobile communications (GSM) network, or any wireless network/technology conventional in the art, including but to limited to 3G, 4G, LTE, and the like." Ramanujaiaha, 6:39-44. Annotated Figure 2 below illustrates a user 210 initiating "a first interaction by placing a phone/video call to the call center" via a first connection. Ramanujaiaha, 11:59-61; FIG. 2.



Ramanujaiaha, FIG. 2 (annotated).

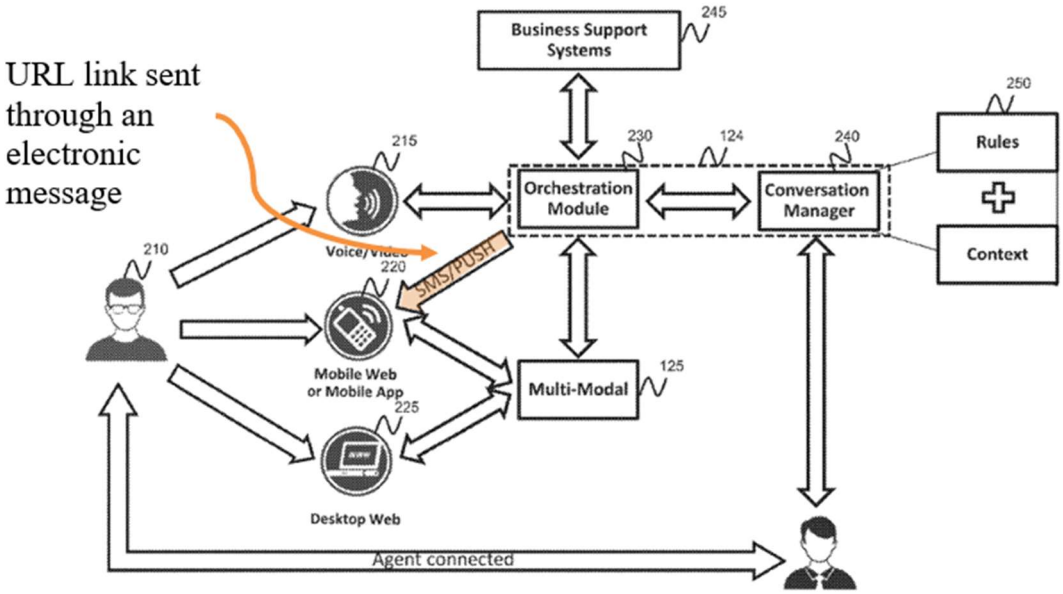
76. The ’383 patent similarly discloses that the “first connection may be, for example a voice call over a cellular network, such as when a phone call is established between the user device and a call center.” Ex. 1001, 5:56-58.

77. Thus, it is my opinion that Ramanujaiaha discloses that the emergency call (emergency service center telephony call) is conducted with a recipient (call center) through a first connection (voice call), as recited in [1b].

d. [1c]: "transmitting a uniform resource locator (URL) link to the mobile device through an electronic message,"

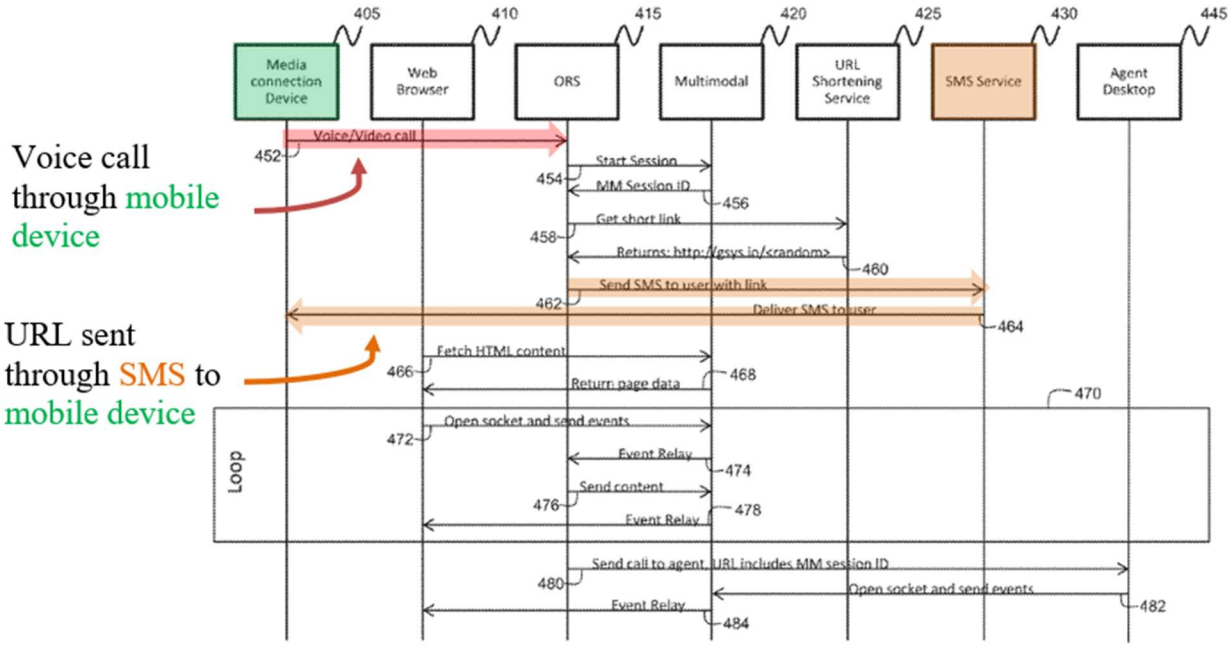
78. Ramanujaiaha discloses [1c] because it discloses sending (transmitting) "a link including a unique URL… *to the user's device via an SMS*." Ramanujaiaha, 12:6-12 (emphasis added), FIG. 2.

79. For example, the contact center may use an "orchestration module" to "identify that the user is engaging via a smart phone or a mobile phone" and send "a link including a unique URL or corresponding to the user's phone number … to the user's device via an SMS …, to invite the user to a multimodal session." Ramanujaiaha, 12:5-13, FIG. 2. Annotated Figure 2 below illustrates the transmitting SMS containing the URL link.



Ramanujaiaha, FIG. 2 (annotated).

80. Figure 4 similarly illustrates a process whereby "a user places a voice/video call at act 452 to the contact center via a media connection device (e.g., a mobile phone or a LAN line phone) 405, and in response, an orchestration module 415 and … *sends an SMS with the short link URL* at act 462 to an SMS service 430, and the SMS service 430 delivers the SMS at act 464 to the user's media connection device 405." Ramanujaiaha, 14:57-15:8 (emphasis added).



Ramanujaiaha, FIG. 4 (annotated).

81. This is consistent with the '383 patent, which also sends a URL link through an "electronic message" such as "a short message service (SMS), an MMS, an electronic mail (email) message, and the like." Ex. 1001, 6:10-17. Accordingly, it is my opinion that Ramanujaiaha discloses transmitting a uniform

resource locator (URL) link to the mobile device (user smart phone/wireless phone) through an electronic message (SMS), as recited in [1c].

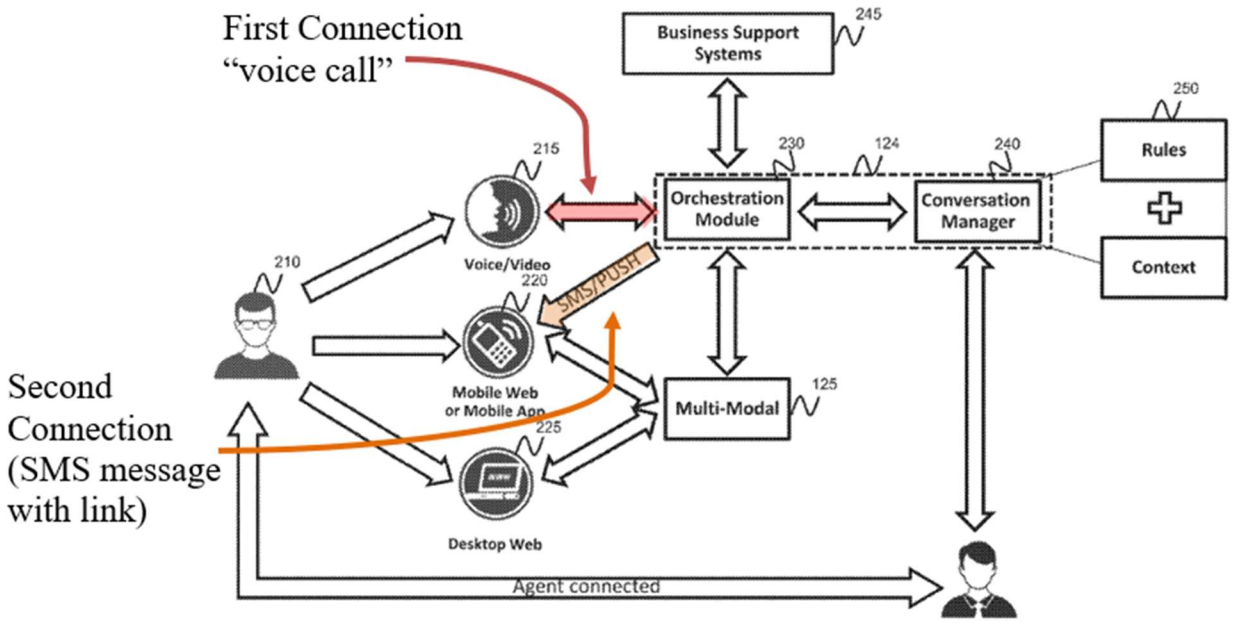
e. [1d]: "wherein the electronic message is transmitted through a second connection using the phone number,"

82. Ramanujaiaha discloses [1d] because the SMS (electronic message) is transmitted through a "digital" (e.g., "text" or "SMS") "communication channel" (second connection) to the caller's mobile device (using the phone number). Ramanujaiaha, 4:59-5:3, 5:9-16, 12:5-13, 14:57-15:8, FIGS. 2, 4.

83. As I explain for [1a], each emergency contact center may be associated with a "call controller" configured to "process PSTN calls, VoIP calls, and the like" and "extract data about the customer interaction *such as the caller's telephone number*, often known as the automatic number identification (ANI) number, or the customer's internet protocol (IP) address, or email address." Ramanujaiaha, 7:4-5, 7:10-16 (emphasis added).

84. And as I explain for [1c], the call center may use an "orchestration module" to send "a link including a unique URL or corresponding to the user's phone number … to the user's device via an SMS …, to invite the user to a multimodal session." Ramanujaiaha, 12:5-13, 14:57-15:8, FIGS. 2, 4. Ramanujaiaha further discloses that users "regularly use two or more communication channels to accomplish their goals" and that "interactions between

contact center resources (e.g., live agents and self-service systems) and outside entities (e.g., customers) may be conducted over [multiple] communication channels such as voice/telephony (e.g., telephone calls, voice over IP or VoIP calls, etc.)" (the first connection of [1b]) and "text (e.g., emails, text chat, etc.)" (a second connection). Ramanujaiaha, 5:9-16; *see also* Ramanujaiaha, 4:59-5:3 (describing chat and SMS as a "digital" "communication channel" distinct from "voice/telephony" communication channel).



Ramanujaiaha, FIG. 2 (annotated). Because Ramanujaiaha explains that the emergency contact center sends the electronic message to the "user's device via an SMS… to invite the user to a multimodal session" when it "identif[ies] that the user is engaging via a smart phone or a mobile phone," a POSITA would have understood that Ramanujaiaha likewise discloses that the electronic message is

transmitted through the second connection using the user's phone number. Ramanujaiaha, 12:5-13 (emphasis added), FIG. 2; *see also* Ex. 1007, 11[1] (explaining that the "destination telephone number" is "needed" to "send[] a simple 'Hello, world' message to the mobile phone.").

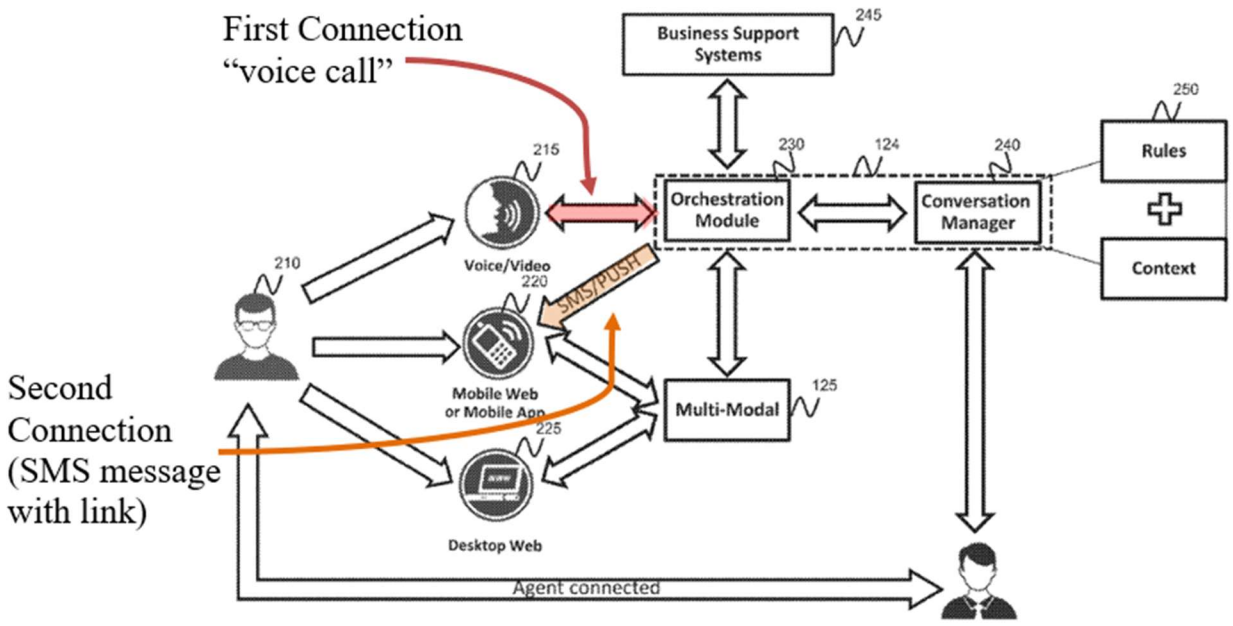
85. The '383 patent similarly discloses that the "second connection" may be an "SMS." Ex. 1001, 7:43-45, claim 10, 11:66-12:2 ("the electronic message is a text message; and the second connection is a text message service."). Accordingly, Ramanujaiaha discloses the electronic message (SMS) is transmitted through a second connection (digital communication channel such as SMS) using the phone number.

f. [1e]: "wherein the second connection is different from the first connection,"

86. Ramanujaiaha discloses [1e] because as I explain in [1b] and [1d], the first connection is a "voice/telephony" communication channel, and the second connection is a separate "digital," e.g., "text" communication channel such as SMS. Ramanujaiaha, 5:9-16; *see also* Ramanujaiaha, 4:59-5:3 (describing chat and SMS as a "digital" communication channel that is distinct from the "voice/telephony" communication channel). Using the fist "voice/telephony" communication channel "end users … desiring to receive services from the contact

[1] I refer to the PDF page number of Ex. 1007.

center may initiate inbound communications (*e.g., telephone calls*) to the contact center via one or more end user devices," and using the second, different, "digital" communication channel, a link is "*sent to the user's device via an SMS*." Ramanujaiaha, 5:9-16, 6:21-29 (emphasis added), 12:6-12 (emphasis added), FIG. 2.



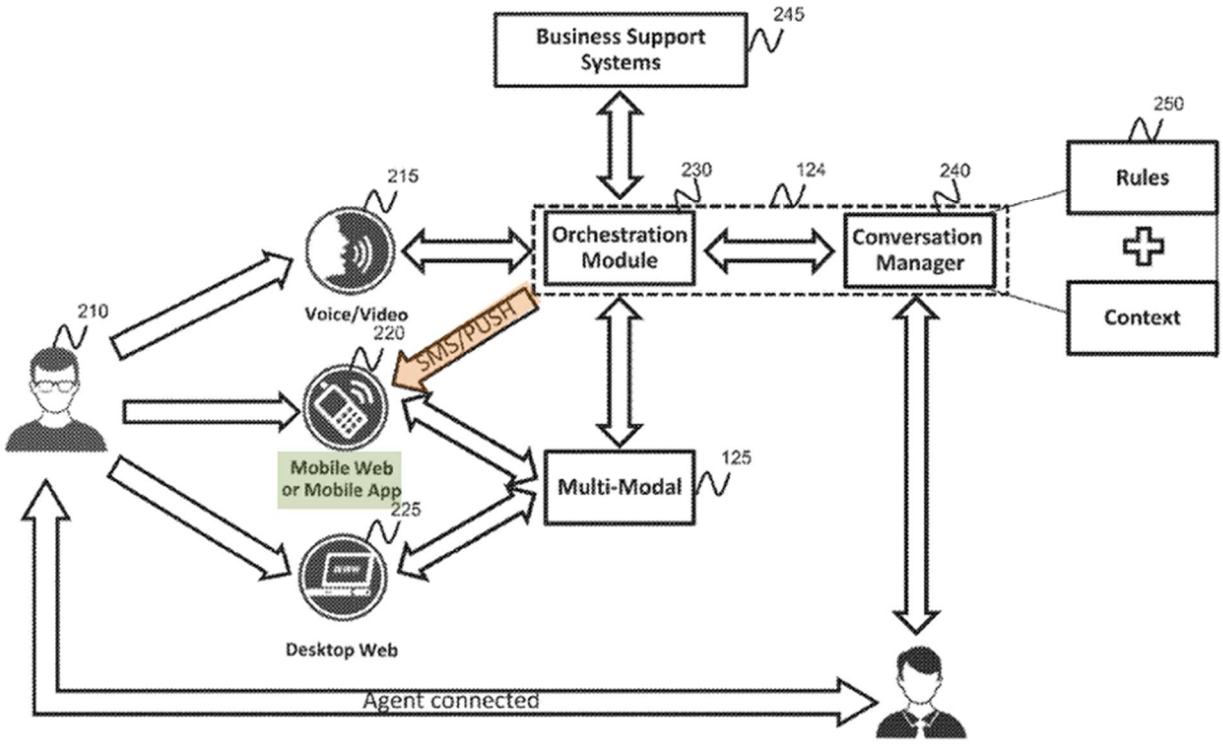
Ramanujaiaha, FIG. 2 (annotated).

g. [1f]: "wherein the electronic message allows the user to click on the URL link to access a web browser on the mobile device, instead of a full application on the mobile device,"

87. Ramanujaiaha discloses [1f] because it discloses that "the user may utilize the link to open a visual communication channel on [] the smart phone/mobile phone 220." Ramanujaiaha, 10:38-42, 11:3-12, 12:14-26.

88. As I explain for [1c], the call center may use an "orchestration module" to "identify that the user is engaging via a smart phone or a mobile phone" and send "a link including a unique URL or corresponding to the user's phone number … to the user's device via an SMS … to invite the user to a multimodal session." Ramanujaiaha, 12:5-13, FIG. 2.

89. Ramanujaiaha further explains that "clicking on the link" opens a "visual communication channel" using the "mobile web" such that the user is "engaged" with the call center "through two modalities, a voice media channel that uses the media connection device 215, and a visual media channel that uses the … mobile web 220." Ramanujaiaha, 12:14-26; *see also* Ramanujaiaha, 10:38-42 (explaining the user device may access a visual interface device "such as *mobile web browser* … to render visual content."), 11:3-12 ("the multimodal server 125 may dynamically generate visual user interfaces (e.g., IVR menu, video, etc.) that are rendered by the one or more end user devices (e.g., visual interface device 220, web browser device 225, etc.)").



Ramanujaiaha, FIG. 2 (annotated).

90. Like in the '383 patent, clicking the link directs the user to a "native application, e.g. a mobile web browser" for rendering visual content (Ramanujaiaha, 10:38-42) and does not require "a user to download and install a full application file." Ex. 1001, 6:33-37, 9:7-12 (distinguishing "native" browser applications from "full" applications that require downloading). Accordingly, it is my opinion that Ramanujaiaha discloses the electronic message (SMS) allows the user to click on the URL link to access a web browser on the mobile device (mobile web browser), instead of a full application on the mobile device, as recited in [1f].

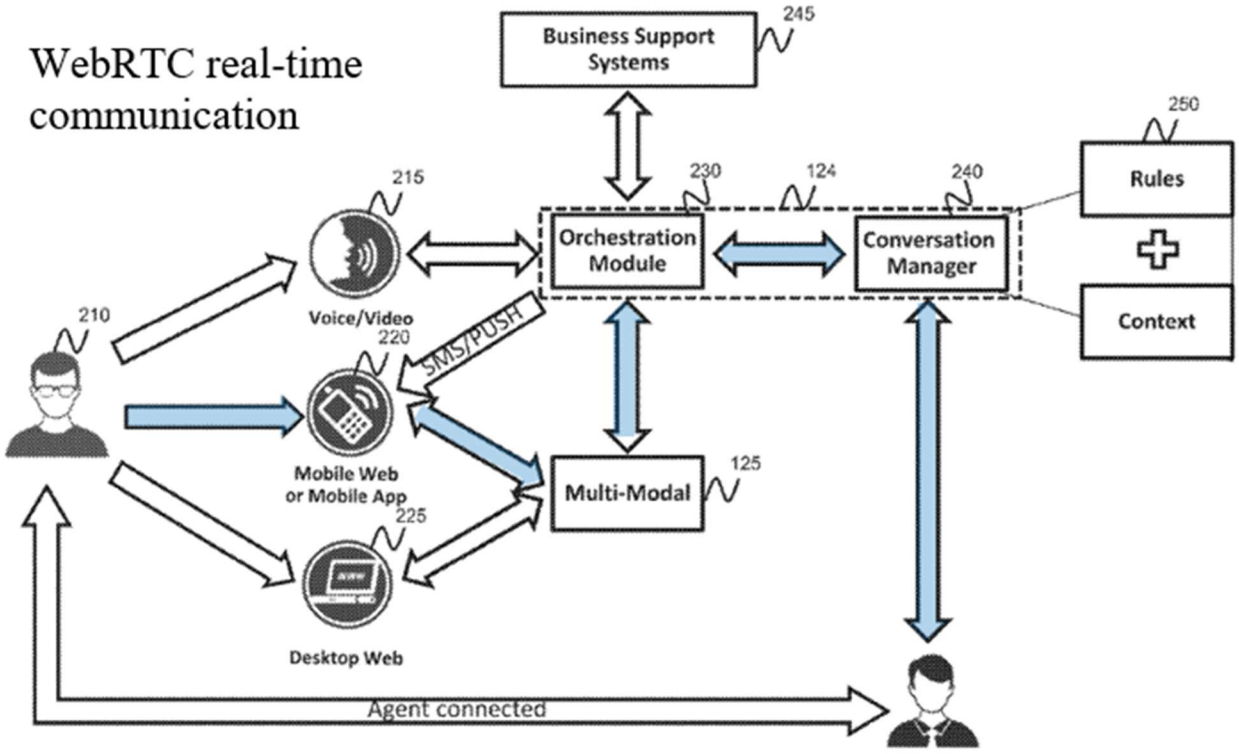
h. [1g]: "to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device,"

91. In my opinion, Ramanujaiaha at least suggests [1g] because it discloses that the user may use the web browser to send the call center "visual content" such as "video communications" using "web real time communication (WebRTC)." Ramanujaiaha, 9:46-52, 10:34-42.

92. As I explain in [1f], Ramanujaiaha discloses that "clicking on the link" opens a "visual communication channel" using the "mobile web" such that the user is "engaged" with the call center "through two modalities, a voice media channel that uses the media connection device 215, and a visual media channel that uses the … mobile web 220." Ramanujaiaha, 12:14-26.

93. Ramanujaiaha further discloses that visual media communicated over the visual media channel (e.g., "video communications") may be transmitted to the contact center using WebRTC. 9:46-52 (explaining the terms "interaction" and "communication" encompasses "real-time" interactions that use "web real-time communication (e.g. WebRTC calls)"), 10:34-42 ("the user 210 may have access to a media connection device (e.g., a mobile phone or a LAN line phone) 215 capable of voice or video communications (e.g., PSTN, WebRTC, Siri, Facetime, etc.)."). Thus, a POSITA would have understood that opening a "visual communication channel" using the "mobile web" such that the user is "engaged"

with the contact center through "a visual media channel" likewise establishes a WebRTC session that allows the user to transmit "video communications" to the contact center. Ramanujaiaha, 9:46-52, 10:34-42, FIG. 2.



Ramanujaiaha, FIG. 2 (annotated).

94. I have also been asked to consider whether a POSITA would have found it obvious to use Ramanujaiaha's mobile web browser to establish a WebRTC session to transmit a real-time video stream from the mobile device. It is my opinion that a position would have.

(i) Motivation

95. As I explain above, Ramanujaiaha expressly contemplates using a WebRTC session to transmit video communications from the user device to the

contact center. Ramanujaiaha, 9:46-52, 10:34-42. Accordingly, a POSITA would have been motivated to establish a WebRTC session because it would have comported with Ramanujaiaha's express goal of facilitating "real-time" interactions between the "contact center resources (e.g., live agents)" and "outside entities (e.g., customers)." Ramanujaiaha, 5:9-15, 9:46-52, 10:46-51 (describing "deliver[ing] real-time updates and actions on each of the channels in response to customer activities").

96. A POSITA would have also appreciated the advantages of utilizing such real-time communication in emergency situations. For example, a POSITA would have recognized that real-time communication via WebRTC would have allowed the user to quickly and accurately convey the nature of their emergency (e.g., through video communication), thus enabling the contact center to provide more timely emergency services.

(ii) Expectation of Success

97. It is also my opinion that a POSITA would have also reasonably expected to succeed in establishing the WebRTC session because it is expressly envisioned by Ramanujaiaha and would have only required routine skill to implement. Ramanujaiaha, 9:46-52, 10:34-42. Establishing a WebRTC session would have been a straightforward application of known, conventional techniques used according to their known functions to yield predictable results. Accordingly, it

is my opinion that a POSITA would have found it obvious to use Ramanujaiaha's mobile web browser to establish a WebRTC session to transmit a real-time video stream from the mobile device.

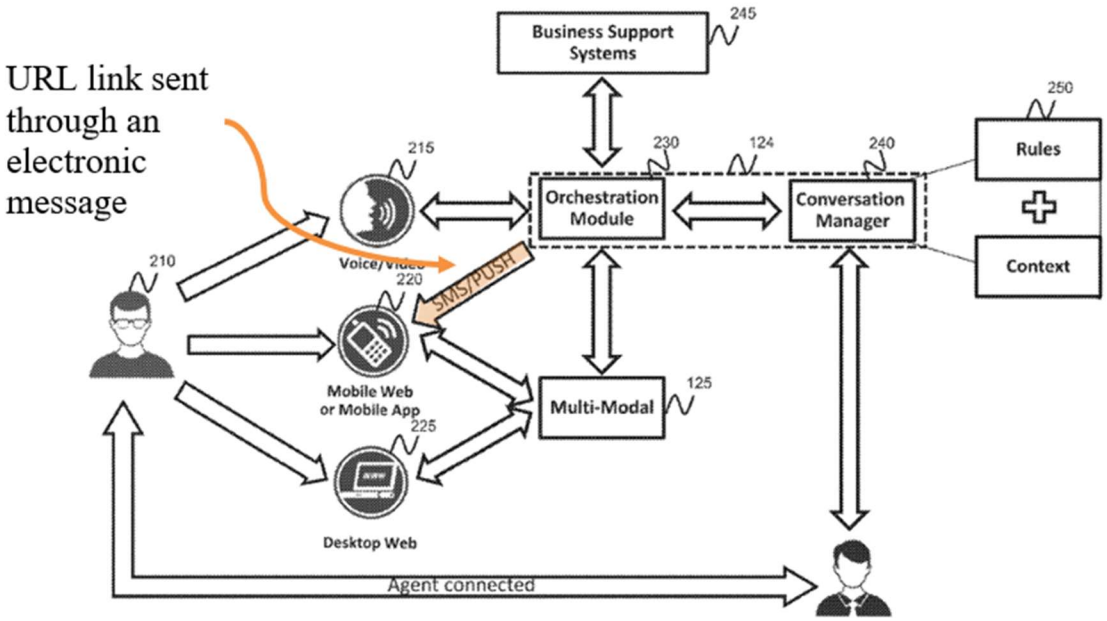
i. [1h]: "and wherein the URL link is associated with the phone number of the mobile device;"

98. Ramanujaiaha discloses or renders obvious [1h] because the emergency contact center "extract[s] data about the customer *interaction such as the caller's telephone number*" and sends the URL to the user "over SMS" when it "*identif[ies]* that the user is engaging via a smart phone or a mobile phone." Ramanujaiaha, 7:4-5, 7:10-16 (emphases added), 12:6-12, FIG. 2; *see also* Ramanujaiaha, [1a], [1c], and [1f].

99. As I explain for [1a], each emergency contact center may be associated with a "call controller" configured to "process PSTN calls, VoIP calls, and the like" and "extract data about the customer interaction *such as the caller's telephone number*, often known as the automatic number identification (ANI) number, or the customer's internet protocol (IP) address, or email address." Ramanujaiaha, 7:4-5, 7:10-16 (emphasis added).

100. And as I explain for [1c], Ramanujaiaha further discloses that the emergency contact center may use an "orchestration module" to send the link including the "unique URL" to the "user's device via an SMS … to invite the user

to a multimodal session" when it "identif[ies] that the user is engaging via a smart phone or a mobile phone." Ramanujaiaha, 12:5-13, FIG. 2.



Ramanujaiaha, FIG. 2 (annotated). Thus, it is my opinion that a POSITA would have understood that the URL link is associated[2] with the phone number of the mobile device because it is transmitted via an SMS that is associated with the mobile device's identity—i.e., "the *caller's telephone number*, often known as the

[2] The '383 patent does not define "associated with" but explains that its "call center," like the contact center described in Ramanujaiaha, identifies the user's phone number when a call is made, and that a link is subsequently sent to the same calling device from which the number was extracted. Ex. 1001, 6:1-13.

automatic number *identification* (ANI) number." Ramanujaiaha, 7:4-5, 7:10-16, (emphases added), 12:6-12.

101. It is also my opinion that a POSITA would have found it obvious to associate the user's phone number with the URL because Ramanujaiaha expressly contemplates associating the users' telephone number with user communications. Ramanujaiaha, 17:7-10.

102. A POSITA would have been motivated to associate the user's phone number with the URL because it would have comported with Ramanujaiaha's express goal of facilitating and tracking communications between the "contact center resources (e.g., live agents)" and "outside entities (e.g., customers)." Ramanujaiaha, 5:9-15, 9:46-52, 11:63-67, 12:21-26. A POSITA would have also appreciated that associating the phone number with the URL would have been a straightforward and routine solution for tracking the communication because Ramanujaiaha's controller is already configured to extract and provide the phone number to the contact center (as I explain in [1a]) and may be used to track user communications.

103. Similarly, a POSITA would have reasonably expected to succeed in associating the phone number with the URL because Ramanujaiaha expressly contemplates associating the user's telephone number with the user's communications, and would have only required routine skill to implement.

Accordingly, it is my opinion that it would have also been obvious to associate the URL link with the phone number of the end user's mobile device.

j. [1i]: "receiving the real-time video stream from the mobile device through the WebRTC session; and"

104. Ramanujaiaha discloses or renders obvious [1i] because as I explain above for [1g], the real-time video communication is transmitted from the user's device and received by the emergency contact center through the WebRTC session.. Ramanujaiaha, 9:46-52, 10:34-42.

105. For example, Ramanujaiaha discloses that visual media communicated over the visual media channel (e.g., "video communications") may be transmitted to the contact center using WebRTC. Ramanujaiaha, 9:46-52 (explaining the terms "interaction" and "communication" encompasses "real-time" interactions that use "web real-time communication (e.g. WebRTC calls)"), 10:34-42 ("the user 210 may have access to a media connection device (e.g., a mobile phone or a LAN line phone) 215 capable of voice or video communications (e.g., PSTN, WebRTC, Siri, Facetime, etc.).").

106. Ramanujaiaha also explains that the contact center's "orchestration module may contain logic for handling [the] multimodal/omnichannel interactions utilizing two or more communication channels" such that it "coordinate[s] with the multimodal server 125 to deliver real-time updates and actions on each of the

channels *in response to* customer activities on any of the channels." Ramanujaiaha, 10:46-55 (emphasis added).

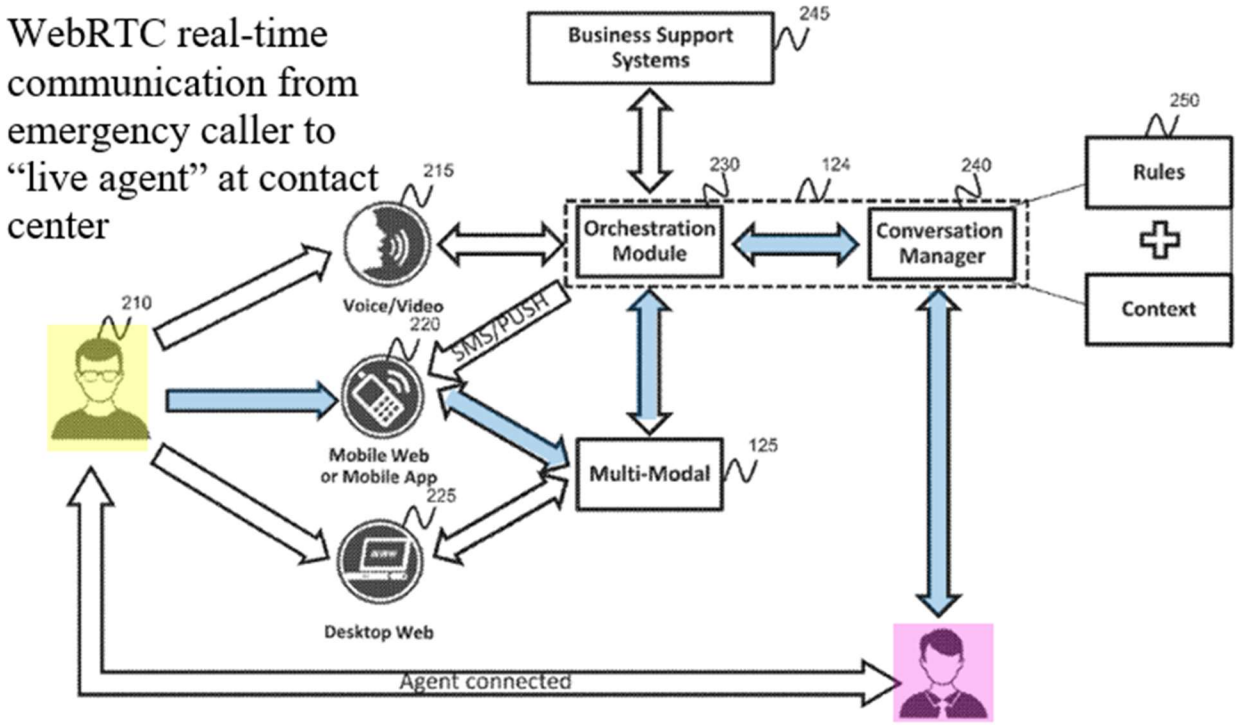
107. Accordingly, it is my opinion that Ramanujaiaha discloses or renders obvious receiving (at the call center) the real-time video stream from the mobile device through the WebRTC session.

k. [1j]: "sending the real-time video stream to the recipient for display on a screen of the recipient,"

108. Ramanujaiaha discloses or renders obvious [1j] because as I explain for [1g] and [1i], the real-time video communication is transmitted from the user's device and *received* by the contact center through the WebRTC session. Ramanujaiaha, 9:46-52 (explaining the terms "interaction" and "communication" encompasses "real-time" interactions that use "web real-time communication (e.g. WebRTC calls)"), 10:34-42 ("the user 210 may have access to a media connection device (e.g., a mobile phone or a LAN line phone) 215 capable of voice or video communications (e.g., PSTN, WebRTC, Siri, Facetime, etc.)."); *see also* Ramanujaiaha, 5:9-15 ("interactions between contact center resources (e.g., live agents and self-service systems) and outside entities (e.g., customers) may be conducted over communication channels such as … *video (e.g., video chat, video conferencing, etc.*)." (emphasis added)), FIG. 2.

109. A POSITA would have understood that the received real-time video communication is for display on a screen at the contact center because an "agent

device" at the contact center may include a computer for "interfacing with customers via voice and other multimedia communication mechanisms." Ramanujaiaha, 7:66-8:3. Indeed, Ramanujaiaha expressly discloses that the computing devices of the disclosed system include "one or more display devices." Ramanujaiaha, 35:57-66, 36:55-56 ("output devices include video display devices").



Ramanujaiaha, FIG. 2 (annotated).

110. Thus, Ramanujaiaha discloses sending the real-time video stream to the recipient (contact center/agent) for display on a screen (computer video display) of the recipient, as recited in [1j].

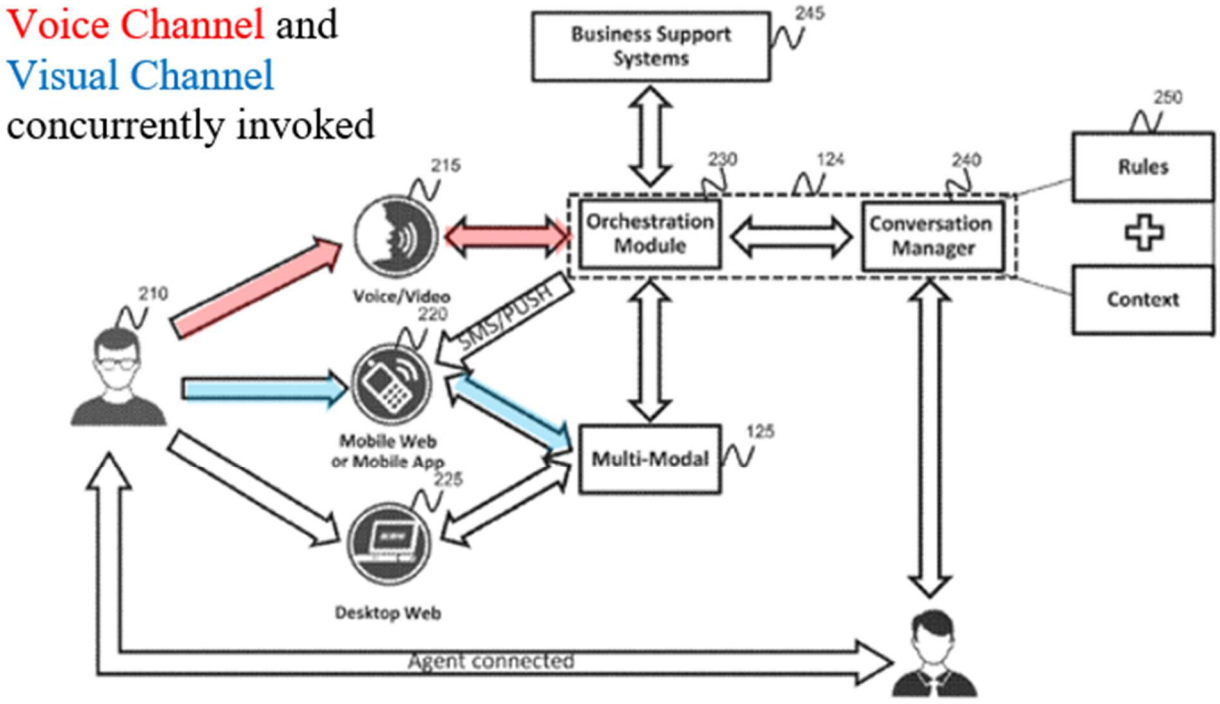
111. I have been asked to consider whether it would have also been obvious to display the real-time video stream on a screen of the recipient. In my opinion, a POSITA would have found it obvious to do so because it would have comported with Ramanujaiaha's goal of providing interactions between the "contact center resources (e.g., live agents)" and "outside entities (e.g., customers) …. over communication channels such as … video (e.g., video chat, video conferencing, etc.)." Ramanujaiaha, 5:9-15.

112. A POSITA would have understood that video interactions, such as "video chat" and "WebRTC," as disclosed in Ramanujaiaha, would necessarily require that the "real-time video stream" be "display[ed] on a screen of the recipient." Failing to display such content on a screen would have undermined the entire premise of video communications.

l. [1k]: "wherein the real-time video stream is received through the WebRTC session while audio content of the emergency call is received through the first connection, and"

113. Ramanujaiaha discloses or renders obvious [1k] because as I explain for [1g], "clicking on the link" opens a "visual communication channel" (e.g., WebRTC) using the "mobile web" such that the user is "engaged" with the call center "through *two modalities, a voice media channel that uses the media connection device 215, and a visual media channel that uses the … mobile web 220*." Ramanujaiaha, 9:46-52, 10:34-42, 12:14-26 (emphasis added).

114. Ramanujaiaha further discloses that communications over the two modalities—video stream using WebRTC session over the video media channel, and a voice call over the voice media channel (first connection)—are received together because it describes "concurrently invok[ing]" such communications: "if a *voice channel and a visual channel are concurrently invoked during an interaction*, the orchestration module 230 *provides visual content and corresponding voice content to the multimodal server* 125." Ramanujaiaha, 10:55-59 (emphasis added), FIG. 2. Moreover, Ramanujaiaha explains that when the user is "engaged through two modalities, … [t]he interaction in both modalities is *tracked and synchronized*, *and context is maintained as the customer concurrently utilizes both modalities at the same tim*e." Ramanujaiaha, 12:23-30 (emphasis added). Annotated Figure 2 below illustrates receiving the real-time video stream through the WebRTC session while audio content of the emergency call is received through the first connection.



Ramanujaiaha, FIG. 2 (annotated).

115. Accordingly, it is my opinion that Ramanujaiaha discloses or renders obvious [1k].

m. [1l]: "wherein the real-time video stream is associated with a unique identifier for the mobile device."

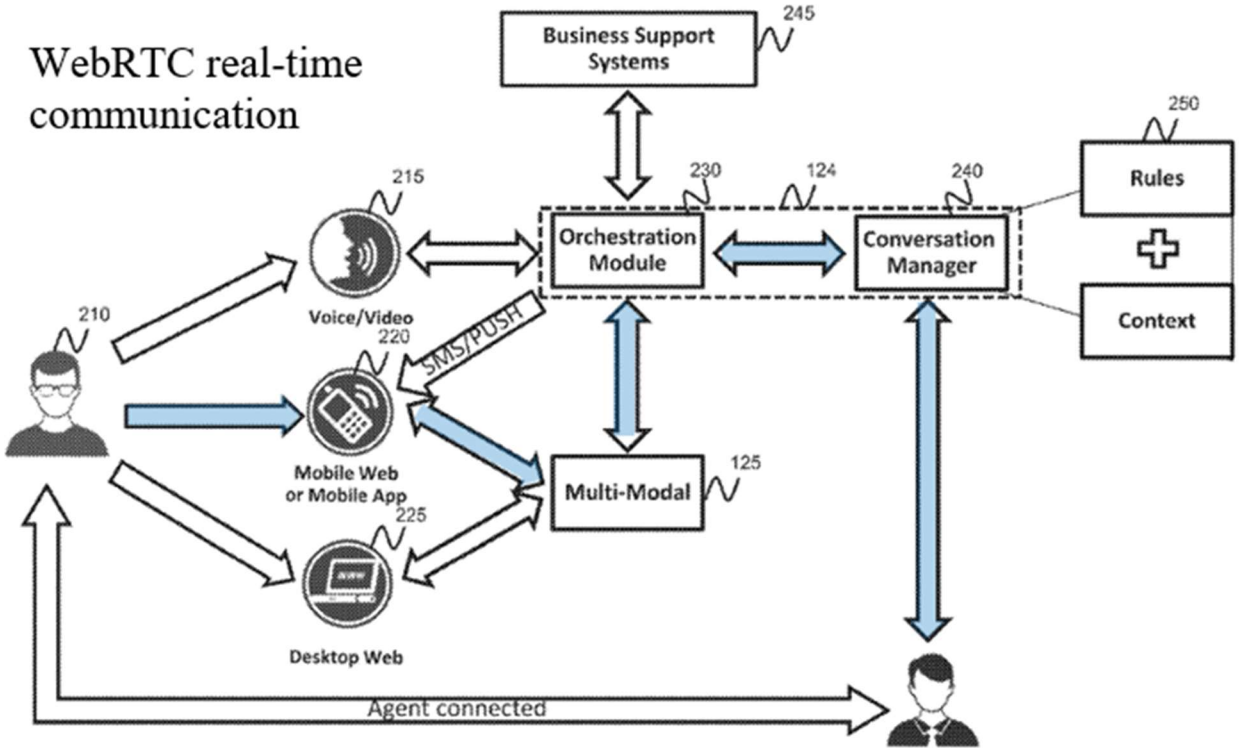
116. Ramanujaiaha discloses [1l] because the multimodal session, which includes the real-time video stream, is "associated with" a "session ID" uniquely identifying the communication between the end user and the contact center, and the "caller's telephone number." Ramanujaiaha, 10:55-59, 11:63-67, 12:3-11, 12:21-30, 15:3-9, 16:48-51.

117. For example, Ramanujaiaha discloses that the controller (1) "generate[s]" a "session ID" "associated with" the "first interaction" (the user's

call over the "voice media channel" described in [1a]-[1b], [1e]) and the "multimodal session" (the session comprised of the voice media channel and the visual media channel that uses the mobile web, as described in [1e]-[1g]), and (2) "passe[s] along" the session ID to the orchestration module. Ramanujaiaha, 11:63-67 ("the first interaction is associated with a session ID which may be generated, for example, by the call controller 118 and passed along to the orchestration module 230."), 12:21-26 ("The multimodal session is associated with the session ID of the first interaction."). A POSITA would have understood that the session ID is a unique identifier because it corresponds to specific interactions between a specific caller device and the emergency contact center. Ramanujaiaha, 11:63-67, 12:21-26. A POSITA would have also understood that the "session ID" is a unique identifier associated with the real-time video stream, as recited in [1l] because it is also associated with the visual media channel via the mobile web. Ramanujaiaha, 11:63-67, 12:21-26.

118. Ramanujaiaha also discloses [1l] because the real-time video stream is associated with the caller's telephone number (another type of unique identifier). Ramanujaiaha, 10:55-59, 12:23-30. As I explain for [1k], communications over the two modalities—video stream using WebRTC session over the video media channel, and voice call over the voice media channel (first connection)—are "concurrently invoke[ed]" such that "visual content and corresponding voice

content" are transmitted from the mobile device to the call center. Ramanujaiaha, 10:55-59, 12:23-30. Thus, the video stream originates from (and is therefore associated with) the calling mobile device and its corresponding telephone number. Ramanujaiaha, 7:4-5, 7:10-16, 10:55-59, 12:23-30, FIG. 3; *see also* [1d] and [1h], *supra* (explaining that the mobile device's identity corresponds to "the *caller's telephone number*, often known as the automatic number *identification* (ANI) number.").



Ramanujaiaha, FIG. 2 (annotated).

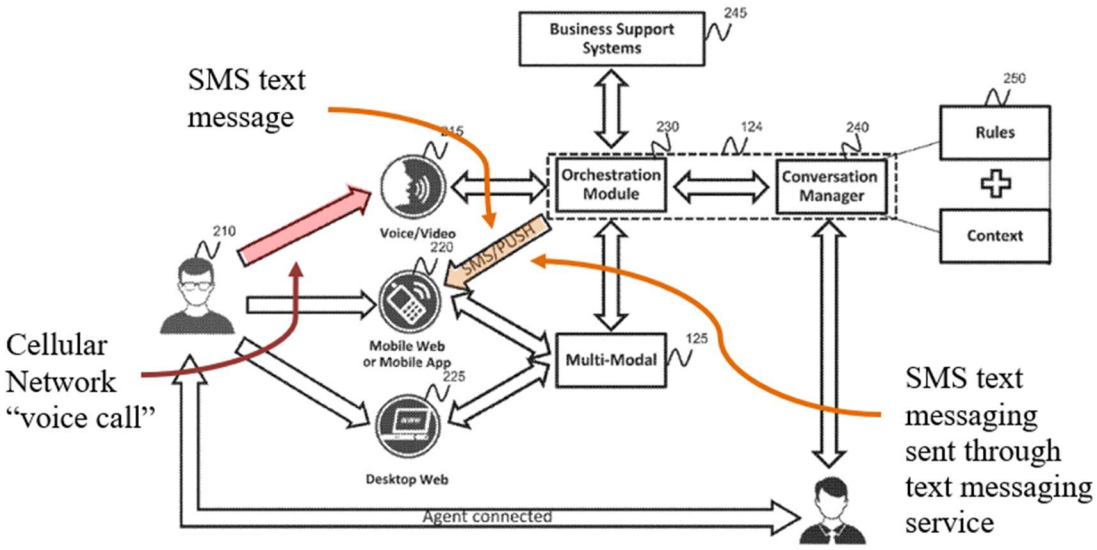
2. Claim 2: "The method of claim 1, wherein the recipient is at least one of an emergency call center or a dispatch unit."

119. Ramanujaiaha discloses the additional limitations of claim 2 because as I explain in [1a], an "emergency service" contact center receives "inbound communications (e.g., telephony calls)" from one or more "end users" operating "one or more end user devices" such as a "wireless phone, smart phone, personal computer, electronic tablet, and/or the like." Ramanujaiaha, 6:13-32.

3. Claim 3: "The method of claim 1, wherein at least one of: (a) the first connection is a voice call over a cellular network; (b) the electronic message is a text message; or (c) the second connection is a text messaging service."

120. Ramanujaiaha discloses the additional limitations of claim 3 because as I explain for [1b], [1c], and [1d], the first connection is a "voice/telephony" communication channel for facilitating a voice call from the end user to the contact center over a cellular network; the electronic message is an SMS (text message); and the second connection is a separate "digital" communication channel such as SMS (a text messaging service). Ramanujaiaha, 4:59-5:3 (describing chat and SMS as a "digital" communication channel that is distinct from the "voice/telephony" communication channel), 5:9-16, 6:39-44, 11:59-61, 12:5-13, FIG. 2.

121. Annotated Figure 2 below illustrates (a) the voice call over a cellular network; (b) the SMS text message; and (c) the SMS text messaging service for transmitting the SMS text.



Ramanujaiaha, FIG. 2 (annotated).

4. Claim 4: "The method of claim 1, wherein the unique identifier comprises the phone number of the mobile device."

122. Ramanujaiaha discloses or renders obvious the additional limitations of claim 4 because as I explain for [1l], a POSITA would have understood that the caller's telephone number (unique identifier) is associated with the video stream. Ramanujaiaha, 7:4-5, 7:10-16, 10:55-59, 12:23-30.

5. Claim 5: "The method of claim 1, wherein the real-time video stream is transmitted from the mobile device to the recipient through a server that is separate from the mobile device and the recipient."

123. Ramanujaiaha discloses the additional limitations of claim 5 because the real-time video stream (as I explain in [1g] and [1i]) is transmitted to the call center from the end-user device (mobile device) through a series of servers such as

an "off-site" or "remote" "orchestration server" and "multimodal server." Ramanujaiaha, 9:5-9, 9:53-59, 10:46-51, 12:14-30, 35:38-43.

124. As I explain in [1g] and [1i], Ramanujaiaha discloses that the real-time video stream is transmitted from the mobile device to the recipient because it discloses (1) that visual media communicated over the visual media channel (e.g., "video communications") may be transmitted to the contact center using WebRTC, and (2) that the contact center's "orchestration module may contain logic for handling [the] multimodal/omnichannel interactions utilizing two or more communication channels" such that it "coordinate[s] with the multimodal server 125 to deliver real-time updates and actions on each of the channels *in response to* customer activities on any of the channels." Ramanujaiaha, 9:46-52, 10:34-42, 10:46-55.

125. Ramanujaiaha further explains that the "orchestration module" facilitating the transmission resides on an "orchestration server" and that the orchestration module "coordinates" with the "multimodal server." Ramanujaiaha, 9:53-59, 10:46-51. For example, when the user "initiates a second interaction through the link by clicking on the link" (as described in [1f] and [1g]), "[a]n event is relayed from the user device to the multimodal server 125, which is then forwarded to the orchestration module 230" residing on the orchestration server. Ramanujaiaha, 9:53-59 ("orchestration server 124 may include an orchestration

module 230"), 10:46-51 ("the orchestration module 230 may coordinate with the multimodal server 125 to deliver real-time updates and actions on each of the channels in response to customer activities on any of the channels"); *see also* Ramanujaiaha, 9:5-9 ("In some embodiments, the contact center system may include a *multimodal server (MM server) 125 configured to work with the orchestration/routing server 124 for coordinating a multimodal interaction* occurring in two or more communication channels." (emphasis added)). Thus, the real-time video is transmitted through a server.

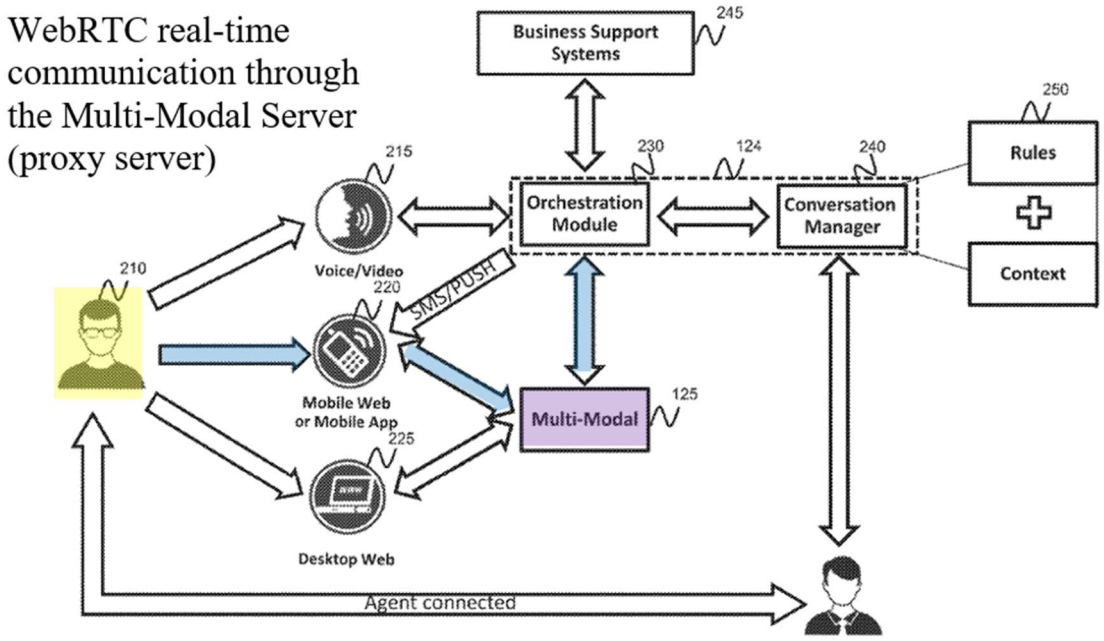
126. Finally, Ramanujaiaha explains that its "various servers may be located on a computing device on-site at the same physical location as the agents of the contact center or *may be located off-site (or in the cloud) in a geographically different location, e.g., in a remote data center*." Ramanujaiaha, 35:38-43 (emphasis added). Thus, the orchestration and multimodal servers may be separate from the mobile device and the recipient (contact center) as recited in claim 5.

6. Claim 6: "The method of claim 5, wherein the server is a proxy server configured to convert a data format of the real-time video stream."

127. In my opinion, Ramanujaiaha at least suggests the additional limitations of claim 6 because it further discloses that "the multimodal server 125 provides a real-time interface to the orchestration module 230 by proxy" and that the multimodal server "adapt[s] incoming data from the orchestration

server 124 into a format that may be rendered on one or more of the end user devices." Ramanujaiaha, 9:11-14, 10:59-64.

128. Because the multimodal server is configured to reformat "incoming data from the orchestration server," a POSITA would have understood data originating at the contact center is not necessarily suitable for the mobile device on which it is received. A POSTA would have similarly recognized that data received from the mobile device (such as the real-time video stream) may not be suitable (or optimal) for the receiving contact center, and that the data would also require reformatting. Thus, a POSITA would have been motivated and found it obvious to configure the multimodal server to convert a data format of the real-time video stream to ensure the contact center is capable of receiving and viewing the video upon receipt. A POSITA would have also had a reasonable expectation of success in making such a modification because the multimodal server is already configured to reformat incoming data and the video stream is one such type of data, as illustrated in annotated Figure 2 below. Ramanujaiaha, 9:11-14, 10:59-64, FIG. 2.



Ramanujaiaha, FIG. 2 (annotated).

7. Independent Claim 8

129. Claim 8 is substantively similar to claim 1 except it recites a system instead of a method. Thus, it is my opinion that claim 8 is disclosed or rendered obvious over Ramanujaiaha for the reasons I discuss in claim 1.

a. [8Preamble]: "A system comprising:"

130. Ramanujaiaha discloses [8Preamble] because it discloses a "contact center system." Ramanujaiaha, 13: 13-20. The "contact center system manages resources (e.g. personnel, computers, software programs, data management, and telecommunication equipment) to enable delivery of services via telephone or other communication mechanisms." Ramanujaiaha, 6:13-17. These "services"

include "emergency response" services as I explain in [1a]-[1b]. Ramanujaiaha, 6:17-20.

b. [8a]: "processing circuitry; and:"

131. Ramanujaiaha discloses [8a] because the system includes "one or more processors" (processing circuity) for executing "various [disclosed] functionalities" in one or more computing devices. Ramanujaiaha, Abstract, 6:13-17 (explaining the "contact center system manages resources (e.g. personnel, *computers, software programs*, data management, and telecommunication equipment) to enable delivery of services via telephone or other communication mechanisms" (emphasis added)), 9:30-45, 35:10-18.

132. For example, the system's servers "may each include one or more processors executing computer program instructions and interacting with other system components for performing the various functionalities …. The computer program instructions are stored in a memory implemented using a standard memory device, such as, for example, a random access memory (RAM). The computer program instructions may also be stored in other non-transitory computer readable media such as, for example, a CD-ROM, flash drive, or the like." Ramanujaiaha, 9:30-45.

c. [8b]: "a non-transitory computer-readable medium storing computing instructions that, when executed on the processing circuitry, cause the processing circuitry to perform:"

133. Ramanujaiaha discloses [8b] because as I explain in [8a], "[t]he computer program instructions are stored in a memory implemented using a standard memory device, such as, for example, a random access memory (RAM)" or "other non-transitory computer readable media such as, for example, a CD-ROM, flash drive, or the like." Ramanujaiaha, 9:33-39.

d. [8c]: "obtaining a phone number of a mobile device used by a user making an emergency call,"

134. Ramanujaiaha discloses [8c] for the reasons discussed for [1a].

e. [8d]: "wherein the emergency call is conducted with a recipient through a first connection;"

135. Ramanujaiaha discloses [8d] for the reasons discussed for [1b].

f. [8e]: "transmitting a uniform resource locator (URL) link to the mobile device through an electronic message,"

136. Ramanujaiaha discloses or renders obvious [8e] for the reasons discussed for [1c].

g. [8f]: "wherein the electronic message is transmitted through a second connection using the phone number,"

137. Ramanujaiaha discloses [8f] for the reasons discussed for [1d].

h. [8g]: "wherein the second connection is different from the first connection,"

138. Ramanujaiaha discloses [8g] for the reasons discussed for [1e].

i. [8h]: "wherein the electronic message allows the user to click on the URL link to access a web browser on the mobile device, instead of a full application on the mobile device,"

139. Ramanujaiaha discloses [8h] for the reasons discussed for [1f].

j. [8i]: "to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device,"

140. Ramanujaiaha discloses or renders obvious [8i] for the reasons discussed for [1g].

k. [8j]: "and wherein the URL link is associated with the phone number of the mobile device;"

141. Ramanujaiaha discloses or renders obvious [8j] for the reasons discussed for [1h].

l. [8k]: "receiving the real-time video stream from the mobile device through the WebRTC session; and"

142. Ramanujaiaha discloses or renders obvious [8k] for the reasons discussed for [1i].

m. [8l]: "sending the real-time video stream to the recipient for display on a screen of the recipient,"

143. Ramanujaiaha discloses or renders obvious [8l] for the reasons discussed for [1j].

n. [8m]: "wherein the real-time video stream is received through the WebRTC session while audio content of the emergency call is received through the first connection, and"

144. Ramanujaiaha discloses or renders obvious [8m] for the reasons discussed for [1k].

o. [8n]: "wherein the real-time video stream is associated with a unique identifier for the mobile device."

145. Ramanujaiaha discloses or renders obvious [8n] for the reasons discussed for [1l].

8. Claim 9: "The system of claim 8, wherein the recipient is at least one of an emergency call center or a dispatch unit."

146. Ramanujaiaha discloses the additional limitations of claim 9 for the reasons discussed for claim 2.

9. Claim 10: "The system of claim 8, wherein at least one of: (a) the first connection is a voice call over a cellular network; (b) the electronic message is a text message; or (c) the second connection is a text messaging service."

147. Ramanujaiaha discloses the additional limitations of claim 10 for the reasons discussed for claim 3.

10. Claim 11: "The system of claim 8, wherein the unique identifier comprises the phone number of the mobile device."

148. Ramanujaiaha discloses or renders obvious claim 11 for the reasons discussed for claim 4.

11. Claim 12: "The system of claim 8, wherein the real-time video stream is transmitted from the mobile device to the recipient through a server that is separate from the mobile device and the recipient."

149. Ramanujaiaha discloses the additional limitations of claim 12 for the reasons discussed for claim 5.

12. Claim 13: "The system of claim 12, wherein the server is a proxy server configured to convert a data format of the real-time video stream."

150. Ramanujaiaha at least suggests and renders obvious the additional limitations of claim 13 for the reasons discussed for claim 6.

13. Independent Claim 15

151. Claim 15 is substantively similar to claims 1 and 8 except it recites a "non-transitory computer-readable medium storing computing instructions," instead of a method or a system as in claims 1 and 8, respectively. Thus, it is my opinion that claim 15 is disclosed or rendered obvious over Ramanujaiaha for the reasons discussed in claims 1 and 8.

a. [15Preamble]: "A non-transitory computer-readable medium storing computing instructions that, when executed on the processing circuitry, cause the processing circuitry to perform:"

152. Ramanujaiaha discloses [15Preamble] for the reasons discussed for [8a]-[8b].

b. [15a]: "obtaining a phone number of a mobile device used by a user making an emergency call,"

153. Ramanujaiaha discloses [15a] for the reasons discussed for [1a].

c. [15b]: "wherein the emergency call is conducted with a recipient through a first connection;"

154. Ramanujaiaha discloses [15b] for the reasons discussed for [1b].

d. [15c]: "transmitting a uniform resource locator (URL) link to the mobile device through an electronic message,"

155. Ramanujaiaha discloses [15c] for the reasons discussed for [1c].

e. [15d]: "wherein the electronic message is transmitted through a second connection using the phone number,"

156. Ramanujaiaha discloses [15d] for the reasons discussed for [1d].

f. [15e]: "wherein the second connection is different from the first connection,"

157. Ramanujaiaha discloses [15e] for the reasons discussed for [1e].

g. [15f]: "wherein the electronic message allows the user to click on the URL link to access a web browser on the mobile device, instead of a full application on the mobile device,"

158. Ramanujaiaha discloses [15f] for the reasons discussed for [1f].

h. [15g]: "to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device,"

159. Ramanujaiaha discloses or renders obvious [15g] for the reasons discussed for [1g].

i. [15h]: "and wherein the URL link is associated with the phone number of the mobile device;"

160. Ramanujaiaha discloses or renders obvious [15h] for the reasons discussed for [1h].

j. [15i]: "receiving the real-time video stream from the mobile device through the WebRTC session; and"

161. Ramanujaiaha discloses or renders obvious [15i] for the reasons discussed for [1i].

k. [15j]: "sending the real-time video stream to the recipient for display on a screen of the recipient,"

162. Ramanujaiaha discloses or renders obvious [15j] for the reasons discussed for [1j].

l. [15k]: "wherein the real-time video stream is received through the WebRTC session while audio content of the emergency call is received through the first connection, and"

163. Ramanujaiaha discloses or renders obvious [15k] for the reasons discussed for [1k].

m. [15l]: "wherein the real-time video stream is associated with a unique identifier for the mobile device."

164. Ramanujaiaha discloses or renders obvious [15l] for the reasons discussed for [1l].

14. Claim 16: "The non-transitory computer-readable medium of claim 15, wherein the recipient is at least one of an emergency call center or a dispatch unit."

165. Ramanujaiaha discloses the additional limitations of claim 16 for the reasons discussed for claim 2.

15. Claim 17: "The non-transitory computer-readable medium of claim 15, wherein at least one of: (a) the first connection is a voice call over a cellular network; (b) the electronic message is a text message; or (c) the second connection is a text messaging service."

166. Ramanujaiaha discloses the additional limitations of claim 17 for the reasons discussed for claim 3.

16. Claim 18: "The non-transitory computer-readable medium of claim 15, wherein the unique identifier comprises the phone number of the mobile device."

167. Ramanujaiaha discloses or renders obvious the additional limitations of claim 18 for the reasons discussed for claim 4.

17. Claim 19: "The non-transitory computer-readable medium of claim 15, wherein (a) the real-time video stream is transmitted from the mobile device to the recipient through a server that is separate from the mobile device and the recipient; and (b) the server is a proxy server configured to convert a data format of the real-time video stream."

168. Ramanujaiaha discloses the additional limitations of claim 19(a)for the reasons discussed for claim 5 and at least suggests and renders obvious the additional limitations of 19(b) for the reasons discussed in claim 6.

B. Ground 2: Claims 1-20 Are Obvious Over Ramanujaiaha and Krishnan

1. Independent Claim 1

169. I have been asked to consider whether claim 1 would have also been obvious over the combination of Ramanujaiaha and Krishnan. In my opinion, it would have, as discussed below.

a. [1Preamble]: "A method implemented via execution of computing instructions configured to run at one or more processors, the method comprising:"

170. Ramanujaiaha discloses [1Preamble] for the reasons discussed in Grounds 1A-1B.

b. [1a]: "obtaining a phone number of a mobile device used by a user making an emergency call,"

171. Ramanujaiaha discloses [1a] for the reasons discussed in Grounds 1A-1B.

c. [1b]: "wherein the emergency call is conducted with a recipient through a first connection;"

172. Ramanujaiaha discloses [1b] for the reasons discussed in Grounds 1A-1B.

d. [1c]: "transmitting a uniform resource locator (URL) link to the mobile device through an electronic message,"

173. Ramanujaiaha discloses [1c] for the reasons discussed in Grounds 1A-1B.

e. [1d]: "wherein the electronic message is transmitted through a second connection using the phone number,"

174. Ramanujaiaha discloses [1d] for the reasons discussed in Grounds 1A-1B.

f. [1e]: "wherein the second connection is different from the first connection,"

175. Ramanujaiaha discloses [1e] for the reasons discussed in Grounds 1A-1B.

g. [1f]: "wherein the electronic message allows the user to click on the URL link to access a web browser on the mobile device, instead of a full application on the mobile device,"

176. Ramanujaiaha discloses [1f] for the reasons discussed in Grounds 1A-1B.

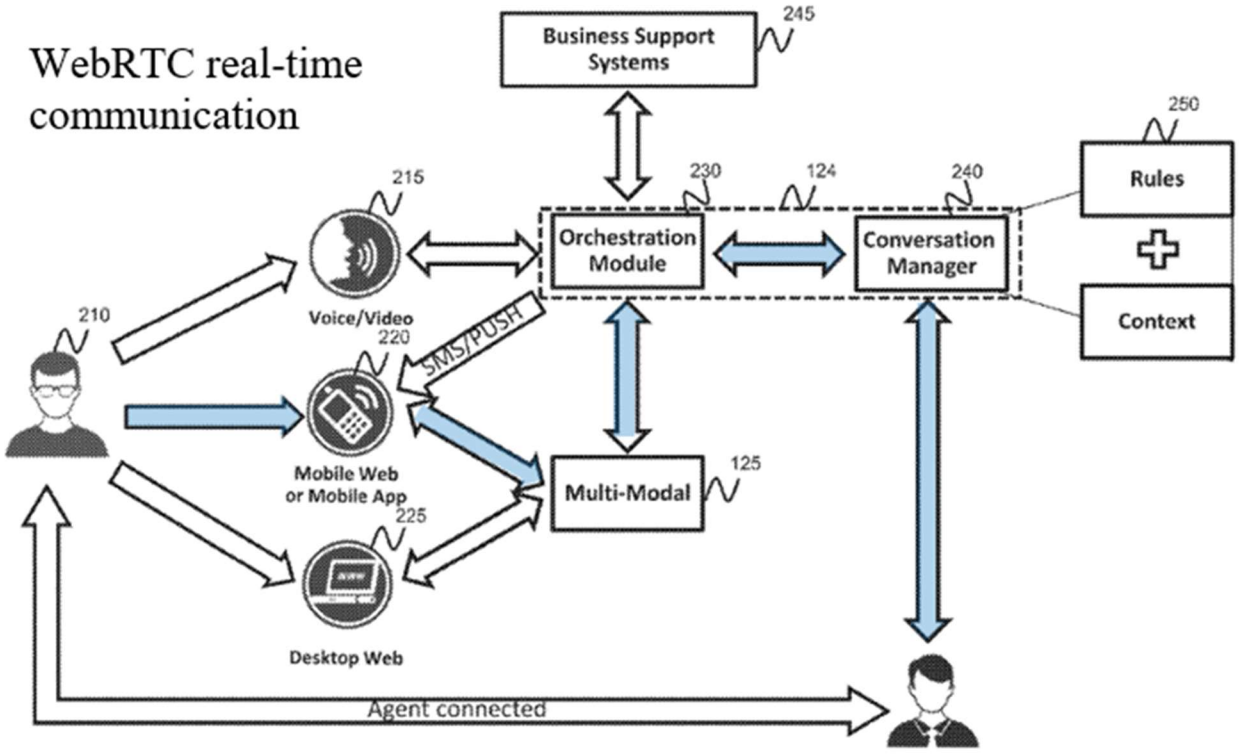
h. [1g]: "to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device,"

177. Ramanujaiaha and Krishnan render obvious [1g].

178. As I explain in Grounds 1A-1B, Ramanujaiaha at least suggests [1g] because it discloses that the user may use the web browser to send the call center "visual content" such as "video communications" using "web real time communication (WebRTC)." Ramanujaiaha, 9:46-52, 10:34-42. For example, a POSITA would have understood that opening a "visual communication channel" using the "mobile web" such that the user is "engaged" with the contact center

through "a visual media channel" likewise establishes a WebRTC session that allows the user to transmit "video communications" to the contact center. Ramanujaiaha, 9:46-52, 10:34-42.

179. A POSITA would have also found it obvious to use Ramanujaiaha's mobile web browser to establish a WebRTC session to transmit a real-time video stream from the mobile device because as I explain in Grounds 1A-1B, Ramanujaiaha expressly contemplates using a WebRTC session to transmit video communications from the user device to the contact center. Ramanujaiaha, 9:46-52, 10:34-42.



Ramanujaiaha, FIG. 2 (annotated).

180. I have been asked to consider whether Krishnan also renders obvious [1g]. In my opinion, it does.

181. Like Ramanujaiaha, Krishnan discloses a method for facilitating communication between an "emergency caller" and an emergency call center, such as a "Public Safety Access Point (PSAP)" over a "cellular" or "other type of packet-switched or circuit switched network." Krishnan, Abstract, 1:41-49, 2:4-21, 4:28-47, FIGS. 1-3; Figure 2 illustrates *inter alia* a "caller 204" placing an emergency voice call using a "[customer] communication device 206" such as a "cellular phone" or "smart phone … adapted to support video, audio, text, and/or data communications" to report an "emergent event 202." Krishnan, 4:61-62, 5:46-56, 6:43-49. The call is transmitted over the "communication network" to the "PSAP agent 112" via a "PSAP server." Krishnan, 1:44-49, 7:7-17, FIG. 2.

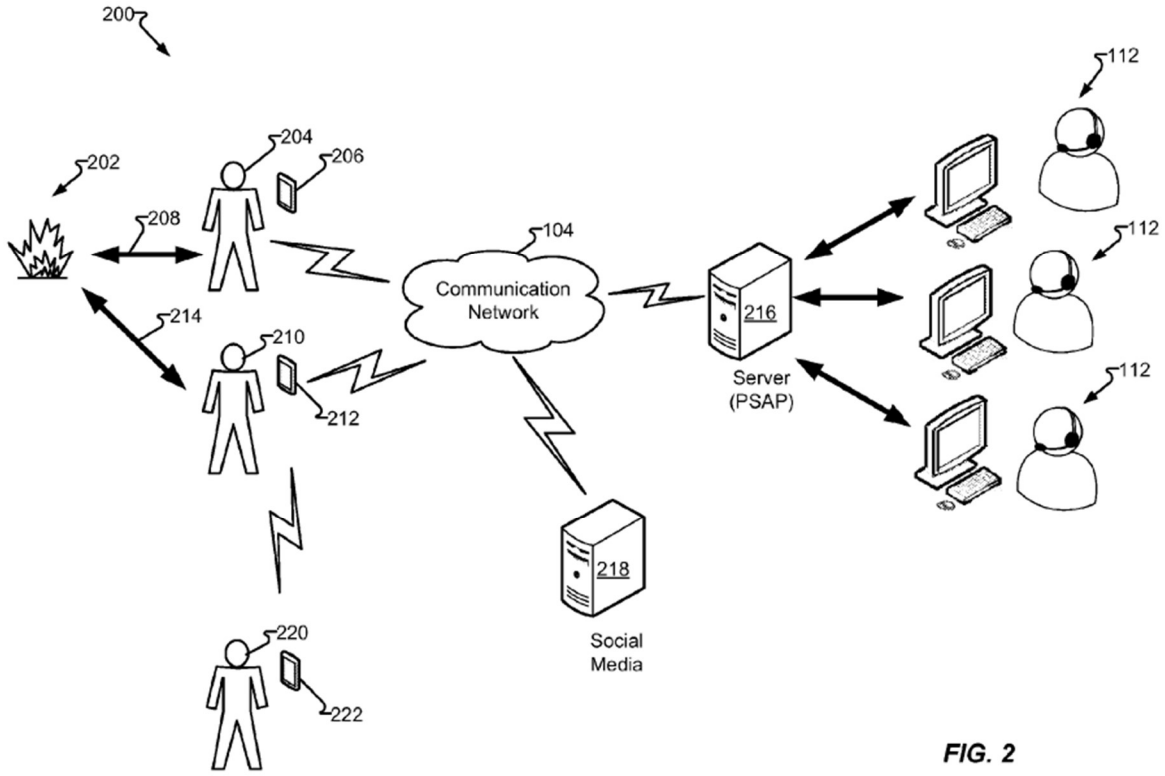


FIG. 2

Krishnan, FIG. 2.

182. To improve emergency reporting, Krishan (like Ramanujaiaha) also utilizes multiple data channels to enable the user to maintain a voice call with the emergency center while sending video footage of the emergent event. Krishnan, 1:41-49. The emergency caller may be "asked to establish a trusted data channel (e.g., a WebRTC call) with a PSAP system then provide their perspective about the event via the data channel." Krishnan, 1:41-45, 7:27-35. For example, if the caller initiates "a voice only communication channel, PSAP server 216, may *prompt the user* device and/or user to cause the user device to establish a data interaction connection" by "*sending a text message with a link to cause the establishment of*

the data channel. The establishment of a data channel may convey packets, such as Internet Protocol (IP) packets over communication network 104 and may further comprise a WebRTC, HTML5, or other data channel paradigm." Krishnan, 7:27-35. In this way, the PSAP "can use *information incoming from each of the data channels* (*e.g.*, pictures, *videos*, text information, etc.) to help determine information about the event." Krishnan, 1:45-49 (emphasis added), 10:56-66 (describing "sending video of an emergent event" while "audio communications" are provided via "voice-only channel"), 11:28-31.

183. Thus, Krishnan expressly discloses transmitting an electronic message (a "text message") through a second connect ("data channel") that is different from a first channel ("voice only communication channel"), wherein the electronic message ("text message") allows the user to click on a "link" on the mobile device ("smart phone," "cellular phone," etc.) to "establish" a WebRTC session to transmit a real-time video stream from the mobile device, as required in [1g]. Krishnan, 1:41-45, 5:49-53, 7:27-35.

(i) Motivation to Combine

184. As I explain in Grounds 1A-1B, Ramanujaiaha expressly contemplates using a WebRTC session to transmit video communications from the user device to the contact center. Ramanujaiaha, 9:46-52, 10:34-42. A POSITA would have been motivated to utilize Ramanujaiaha's link to the web browser to

establish a WebRTC session, as taught by Krishnan, because it would have comported with Ramanujaiaha's express goal of facilitating "real-time" interactions between the "contact center resources (e.g., live agents)" and "outside entities (e.g., customers)." Ramanujaiaha, 5:9-15, 9:46-52, 10:46-51 (describing "deliver[ing] real-time updates and actions on each of the channels in response to customer activities").

185. A POSITA would have also appreciated the advantages of utilizing such real-time communication in emergency situations, as taught by Krishnan. For example, a POSITA would have recognized that real-time communication via WebRTC would have allowed the user to quickly and accurately convey the nature of their emergency (e.g., through video communication); thus enabling the contact center to provide more timely emergency services. Krishnan, 1:45-49, 7:27-35, 10:56-66.

(ii) Expectation of Success

186. A POSITA would have reasonably expected to succeed in configuring Ramanujaiaha to establish the WebRTC session because it is expressly envisioned by Ramanujaiaha and would have only required routine skill to implement. Ramanujaiaha, 9:46-52, 10:34-42. As I explain above, Ramanujaiaha and Krishnan each use similar components (e.g., a smart phone adapted to simultaneously communicate with an emergency call center over voice-only and data channels), to

achieve a common purpose (providing voice and visual communication to improve customer service). *Compare* Ramanujaiaha, 5:9-16, 9:46-52, 10:34-42, FIG. 2 *with* Krishan, Abstract, 1:41-49, 2:4-21, 4:28-47, 10:56-66, FIGS. 1-3. Thus, configuring Ramanujaiaha's mobile web browser link to establish WebRTC data, as taught by Krishnan, would have been a straightforward application of known elements (a mobile device, link and WebRTC session) used according to their known functions (real-time video) to yield predictable results (communicating with an emergency center using distinct voice and data communication channels). Krishnan, 1:41-45, 7:27-35, 10:56-66.

187. Accordingly, it would have been obvious to configure Ramanujaiaha's mobile web browser link to establish a WebRTC session to transmit a real-time video stream from the mobile device, as taught by Krishnan.

i. [1h]: "and wherein the URL link is associated with the phone number of the mobile device;"

188. Ramanujaiaha discloses or renders obvious [1h] for the reasons discussed in Grounds 1A-1B.

j. [1i]: "receiving the real-time video stream from the mobile device through the WebRTC session; and"

189. Ramanujaiaha and Krishnan render obvious [1i] because as I explain for Grounds 1A-1B, the real-time video communication is transmitted from the user's device and received by the emergency contact center. Ramanujaiaha, 9:46-

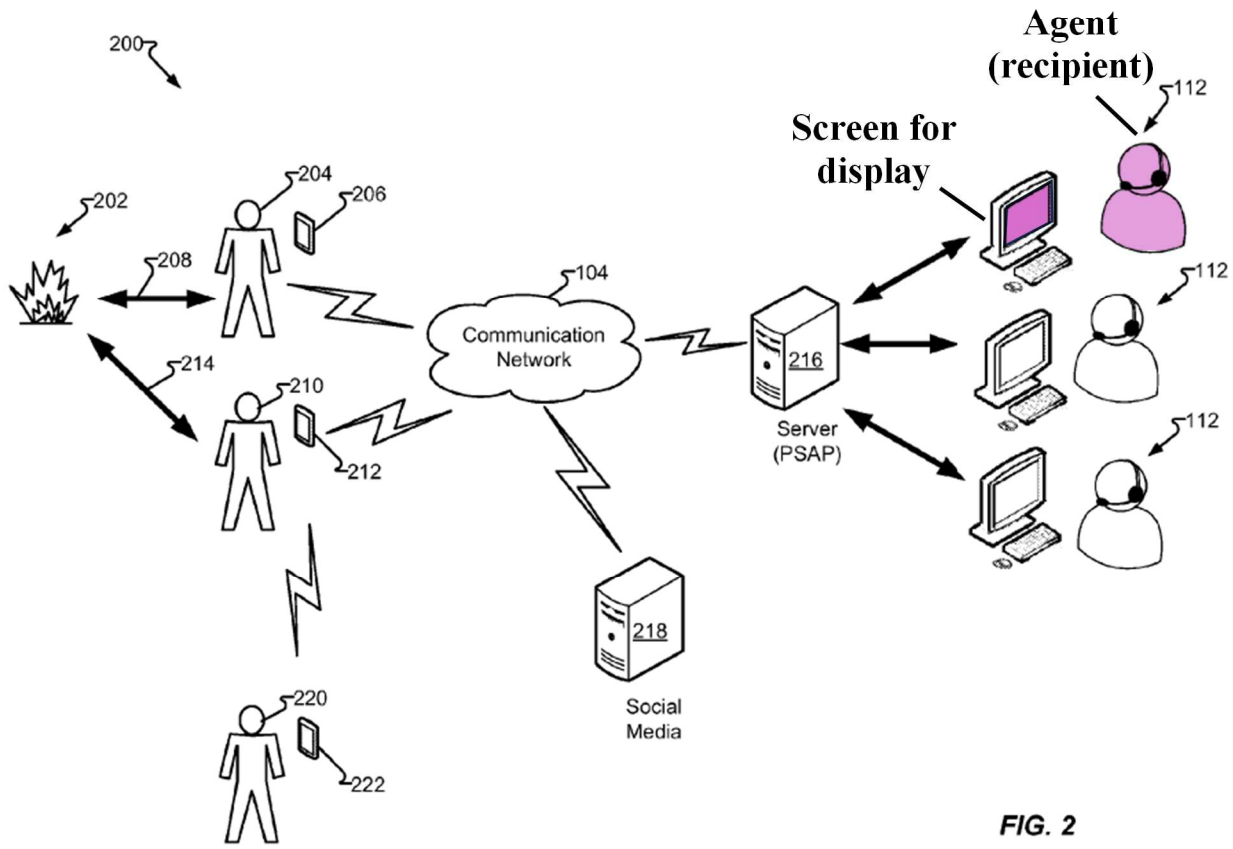
52, 10:34-42, 10:45-55. Krishnan further renders obvious [1i] because as I explain for [1g], the PSAP "use[s] *information incoming from each of the data channels* (*e.g.*, pictures, *videos*, text information, etc.)" of the user's communication device "to help determine information about the [emergent] event." Krishnan, 1:45-49 (emphasis added), 10:56-66 (describing "sending video of an emergent event" while "audio communications" are provided via "voice-only channel"), 11:28-31.

k. [1j]: "sending the real-time video stream to the recipient for display on a screen of the recipient,"

190. Ramanujaiaha and Krishnan render obvious [1j] because as I explain for Grounds 1A-1B, a POSITA would have understood that the received real-time video communication is for display on a screen at the contact center (recipient) because an "agent device" at the contact center may include a computer for "interfacing with customers via voice and other multimedia communication mechanisms." Ramanujaiaha, 7:66-8:3, 35:57-66, 36:55-56.

191. Krishnan further renders obvious [1j] because as I explain for [1g], the PSAP "use[s] *information incoming from each of the data channels* (*e.g.*, pictures, *videos*, text information, etc.)" of the user's communication device "to help determine information about the [emergent] event." Krishnan, 1:45-49 (emphases added), 10:56-66, 11:28-31 ("interaction content, such as multimedia data*, may be captured by first user device 206 and sent to PSAP server 216 . . . for presentation to resource 112*." (emphasis added)). Annotated Figure 2 below illustrates the

PSAP agent and corresponding display screen on which the real-time video is presented to the agent.

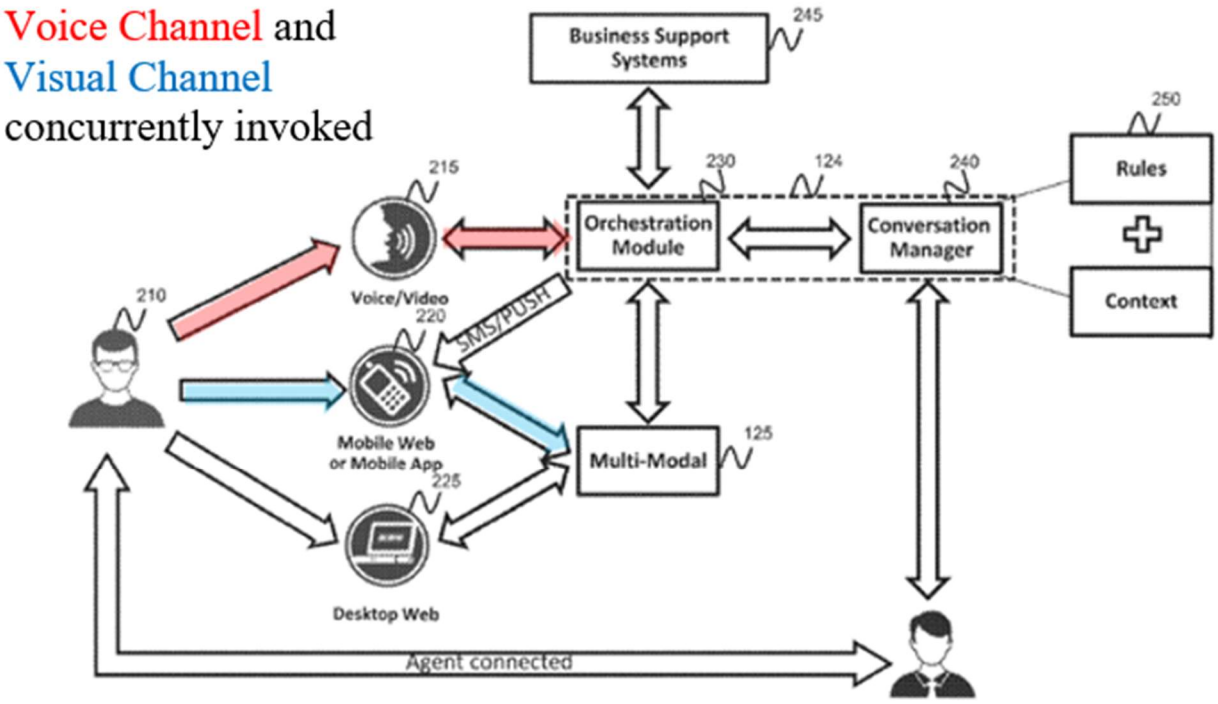


Krishnan, FIG. 2 (annotated).

l. [1k]: "wherein the real-time video stream is received through the WebRTC session while audio content of the emergency call is received through the first connection, and"

192. Ramanujaiaha and Krishnan render obvious [1k] because as I explain for Grounds 1A-1B, Ramanujaiaha further discloses "concurrently invok[ing]" video streaming over the video media channel and a voice call over the voice

media channel (first connection). Ramanujaiaha, 10:55-59, FIG. 2. Annotated Figure 2 below illustrates receiving the real-time video stream through the WebRTC session while audio content of the emergency call is received through the first connection.



Ramanujaiaha, FIG. 2 (annotated).

193. Krishnan further renders obvious [1k] because as I explain for [1g], Krishan discloses "sending video of an emergent event" using a "data channel" while "audio communications" are provided via "voice-only channel" (a first connection) Krishnan, 11:28-31; *see also* Krishnan, 1:41-49, 1: (describing calls "based solely on data received via the data channel, audio channel, *or a combination thereof*" (emphasis added)), 1:61-63, 7:27-35 (if the caller initiates "a

voice only communication channel, PSAP server 216, may *prompt the user* device and/or user to cause the user device to establish a data interaction connection"). Annotated Figure 3 below illustrates the real-time video stream is received through the WebRTC session while audio content of the emergency call is received through the first connection. Krishnan, FIG. 3.

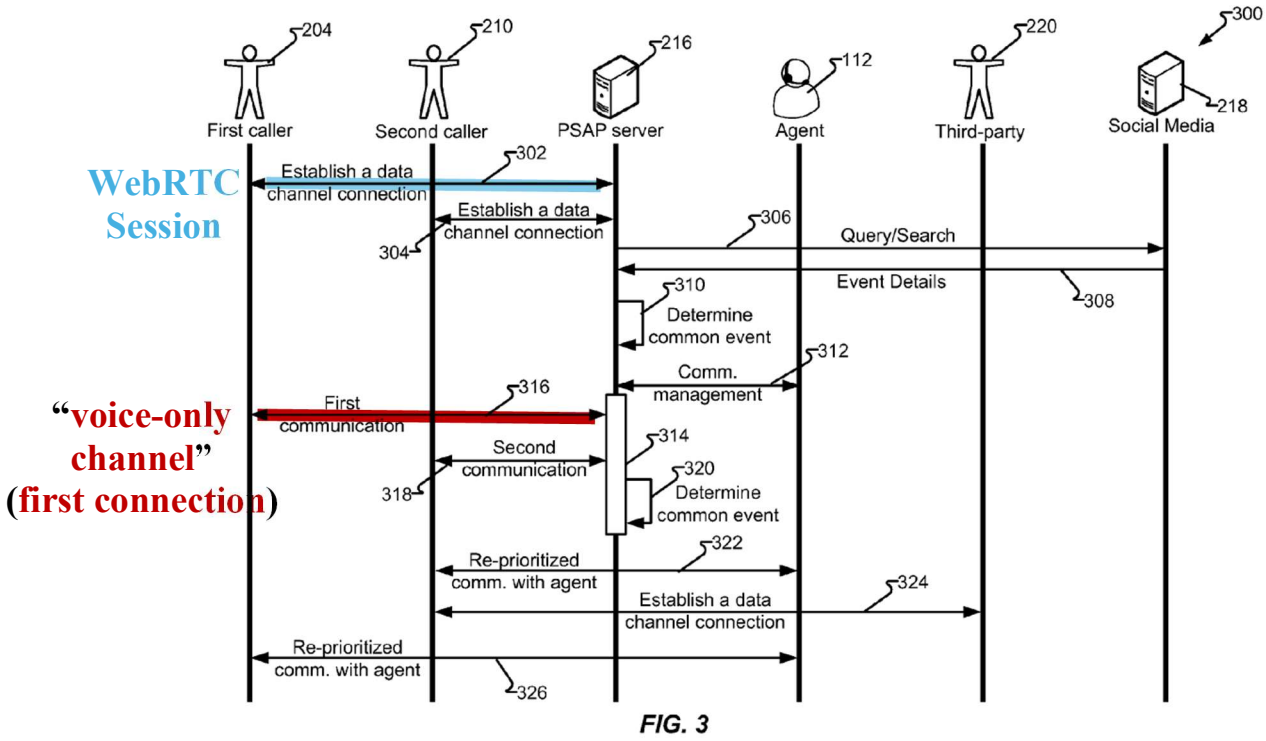


FIG. 3

Krishnan, FIG. 3 (annotated).

m. [1l]: "wherein the real-time video stream is associated with a unique identifier for the mobile device."

194. Ramanujaiaha discloses or renders obvious [1l] for the reasons discussed in Grounds 1A-1B.

2. Claim 2: "The method of claim 1, wherein the recipient is at least one of an emergency call center or a dispatch unit."

195. Ramanujaiaha discloses the additional limitations of claim 2 for the reasons discussed in Grounds 1A-1B.

3. Claim 3: "The method of claim 1, wherein at least one of: (a) the first connection is a voice call over a cellular network; (b) the electronic message is a text message; or (c) the second connection is a text messaging service."

196. Ramanujaiaha discloses the additional limitations of claim 3 for the reasons discussed in Grounds 1A-1B.

4. Claim 4: "The method of claim 1, wherein the unique identifier comprises the phone number of the mobile device."

197. Ramanujaiaha discloses or renders obvious the additional limitations of claim 4 for the reasons discussed in Grounds 1A-1B.

5. Claim 5: "The method of claim 1, wherein the real-time video stream is transmitted from the mobile device to the recipient through a server that is separate from the mobile device and the recipient."

198. Ramanujaiaha discloses the additional limitations of claim 5 for the reasons discussed in Grounds 1A-1B.

6. Claim 6: "The method of claim 5, wherein the server is a proxy server configured to convert a data format of the real-time video stream."

199. Ramanujaiaha at least suggests and renders obvious the additional limitations of claim 6 for the reasons discussed in Grounds 1A-1B.

7. Claim 7: "The method of claim 1, wherein the WebRTC session further transmits at least one of (i) GPS location data of the mobile device for display on the screen of the recipient or (ii) one or more photographs taken on the mobile device for display on the screen of the recipient."

200. Ramanujaiaha and Krishnan render obvious claim 7 because as I explain for [1g] and [1j], Krishan discloses that the PSAP is "present[ed]" with and "use[s] *information incoming from each of the data channels* (*e.g.*, *pictures,* videos, text information, etc.)" of the user's communication device "to help determine information about the [emergent] event." Krishnan, 1:45-49 (emphasis added), 10:56-66 (describing "sending video of an emergent event" while "audio communications" are provided via "voice-only channel"), 11:28-31.

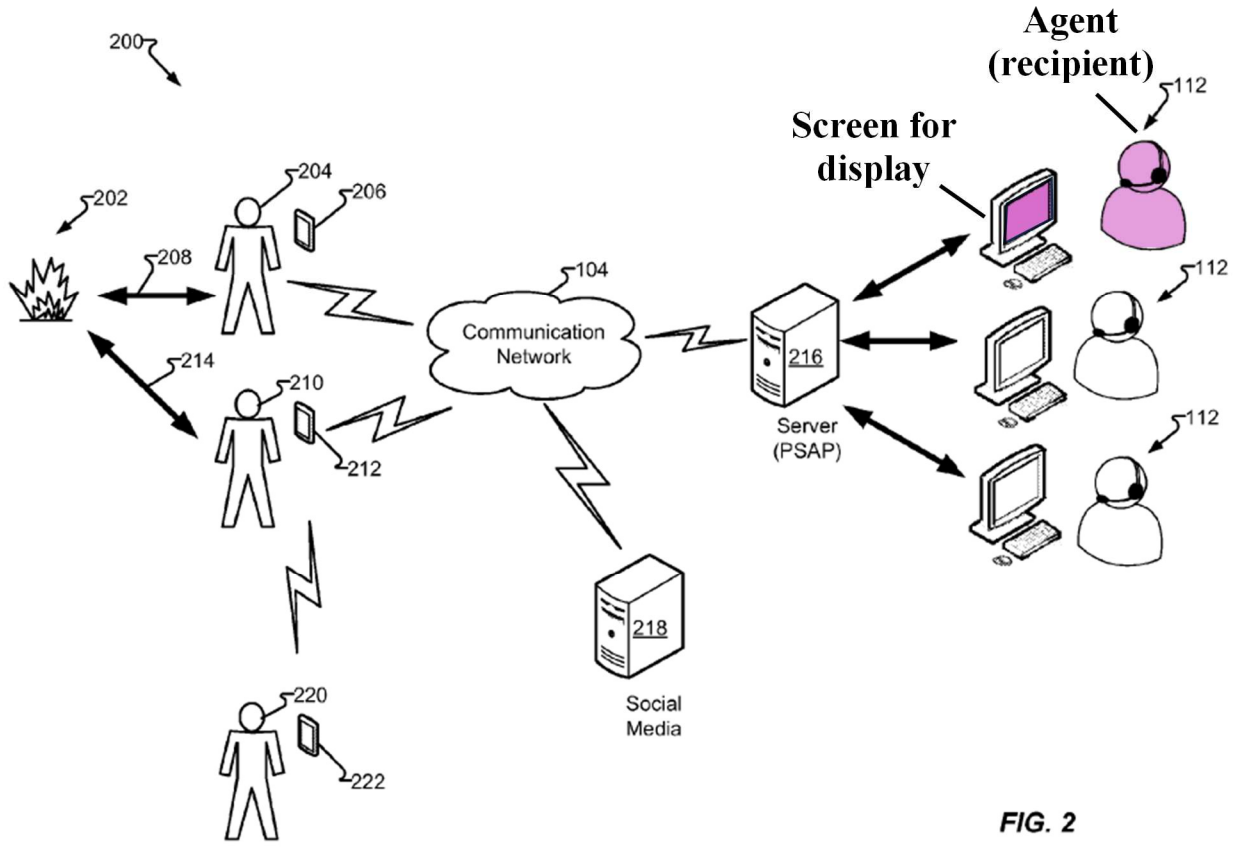


FIG. 2

Krishnan, FIG. 2 (annotated).

201. Krishan also expressly discloses that the "multimedia content provided over the *data channel* may comprise …. *GPS coordinates.*" Krishnan, 11:20-23 (emphases added); *see also* Krishnan, 10:62-66 ("other content is exchanged via the data channel, content such as …. *images* …. *position data*."), 7:43-58. This information is received over the WebRTC session as I explain in [1g] and [1i]. Accordingly, Ramanujaiaha and Krishnan renders obvious claim 7.

8. Independent Claim 8

202. Claim 8 is substantively similar to claim 1 except it recites a system instead of a method. Thus, it is my opinion that claim 8 is obvious over Ramanujaiaha and Krishnan for the reasons discussed in claim 1.

a. [8Preamble]: "A system comprising:"

203. Ramanujaiaha discloses [8Preamble] because it discloses a "contact center system" as I explain in Grounds 1A-1B. Ramanujaiaha, 6:13-17, 13:13-20.

b. [8a]: "processing circuitry; and:"

204. Ramanujaiaha discloses [8a] because the system includes "one or more processors" (processing circuity) for executing "various [disclosed] functionalities" in one or more computing devices, as I explain in Grounds 1A-1B. Ramanujaiaha, Abstract, 6:13-17, 9:30-45, 35:10-18.

c. [8b]: "a non-transitory computer-readable medium storing computing instructions that, when executed on the processing circuitry, cause the processing circuitry to perform:"

205. Ramanujaiaha discloses [8b] because "[t]he computer program instructions are stored in a memory implemented using a standard memory device, such as, for example, a random access memory (RAM)" or "other non-transitory computer readable media such as, for example, a CD-ROM, flash drive, or the like," as I explain in Grounds 1A-1B. Ramanujaiaha, 9:33-39.

d. [8c]: "obtaining a phone number of a mobile device used by a user making an emergency call,"

206. Ramanujaiaha discloses [8c] for the reasons discussed for [1a].

e. [8d]: "wherein the emergency call is conducted with a recipient through a first connection;"

207. Ramanujaiaha discloses [8d] for the reasons discussed for [1b].

f. [8e]: "transmitting a uniform resource locator (URL) link to the mobile device through an electronic message,"

208. Ramanujaiaha discloses [8e] for the reasons discussed for [1c].

g. [8f]: "wherein the electronic message is transmitted through a second connection using the phone number,"

209. Ramanujaiaha discloses [8f] for the reasons discussed for [1d].

h. [8g]: "wherein the second connection is different from the first connection,"

210. Ramanujaiaha discloses [8g] for the reasons discussed for [1e].

i. [8h]: "wherein the electronic message allows the user to click on the URL link to access a web browser on the mobile device, instead of a full application on the mobile device,"

211. Ramanujaiaha discloses [8h] for the reasons discussed for [1f].

j. [8i]: "to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device,"

212. Ramanujaiaha and Krishnan render obvious [8i] for the reasons discussed for [1g].

k. [8j]: "and wherein the URL link is associated with the phone number of the mobile device;"

213. Ramanujaiaha disclose or renders obvious [8j] for the reasons discussed for [1h].

l. [8k]: "receiving the real-time video stream from the mobile device through the WebRTC session; and"

214. Ramanujaiaha and Krishnan render obvious [8k] for the reasons discussed for [1i].

m. [8l]: "sending the real-time video stream to the recipient for display on a screen of the recipient,"

215. Ramanujaiaha discloses [8l] for the reasons discussed for [1j].

n. [8m]: "wherein the real-time video stream is received through the WebRTC session while audio content of the emergency call is received through the first connection, and"

216. Ramanujaiaha and Krishnan render obvious [8m] for the reasons discussed for [1k].

o. [8n]: "wherein the real-time video stream is associated with a unique identifier for the mobile device."

217. Ramanujaiaha discloses [8n] for the reasons discussed for [1l].

9. Claim 9: "The system of claim 8, wherein the recipient is at least one of an emergency call center or a dispatch unit."

218. Ramanujaiaha discloses the additional limitations of claim 9 for the reasons discussed for claim 2.

10. Claim 10: "The system of claim 8, wherein at least one of: (a) the first connection is a voice call over a cellular network; (b) the electronic message is a text message; or (c) the second connection is a text messaging service."

219. Ramanujaiaha discloses the additional limitations of claim 10 for the reasons discussed for claim 3.

11. Claim 11: "The system of claim 8, wherein the unique identifier comprises the phone number of the mobile device."

220. Ramanujaiaha discloses or renders obvious the additional claim 11 for the reasons discussed for claim 4.

12. Claim 12: "The system of claim 8, wherein the real-time video stream is transmitted from the mobile device to the recipient through a server that is separate from the mobile device and the recipient."

221. Ramanujaiaha discloses the additional limitations of claim 12 for the reasons discussed for claim 5.

13. Claim 13: "The system of claim 12, wherein the server is a proxy server configured to convert a data format of the real-time video stream."

222. Ramanujaiaha at least suggests and renders obvious the additional limitations of claim 13 for the reasons discussed for claim 6.

14. Claim 14: "The system of claim 8, wherein the WebRTC session further transmits at least one of (i) GPS location data of the mobile device for display on the screen of the recipient or (ii) one or more photographs taken on the mobile device for display on the screen of the recipient."

223. Ramanujaiaha and Krishnan render obvious claim 14 for the reasons discussed for claim 7.

15. Independent Claim 15

224. Claim 15 is substantively similar to claims 1 and 8 except it recites a "non-transitory computer-readable medium storing computing instructions," instead of a method or a system as in claims 1 and 8, respectively. Claim 15 is obvious over Ramanujaiaha and Krishnan for the reasons discussed in claims 1 and 8.

a. [15Preamble]: "A non-transitory computer-readable medium storing computing instructions that, when executed on the processing circuitry, cause the processing circuitry to perform:"

225. Ramanujaiaha discloses [15Preamble] for the reasons discussed for [8a]-[8b].

b. [15a]: "obtaining a phone number of a mobile device used by a user making an emergency call,"

226. Ramanujaiaha discloses [15a] for the reasons discussed for [1a].

c. [15b]: "wherein the emergency call is conducted with a recipient through a first connection;"

227. Ramanujaiaha discloses [15b] for the reasons discussed for [1b].

d. [15c]: "transmitting a uniform resource locator (URL) link to the mobile device through an electronic message,"

228. Ramanujaiaha discloses [15c] for the reasons discussed for [1c].

e. [15d]: "wherein the electronic message is transmitted through a second connection using the phone number,"

229. Ramanujaiaha discloses [15d] for the reasons discussed for [1d].

f. [15e]: "wherein the second connection is different from the first connection,"

230. Ramanujaiaha discloses [15e] for the reasons discussed for [1e].

g. [15f]: "wherein the electronic message allows the user to click on the URL link to access a web browser on the mobile device, instead of a full application on the mobile device,"

231. Ramanujaiaha discloses [15f] for the reasons discussed for [1f].

h. [15g]: "to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device,"

232. Ramanujaiaha and Krishnan render obvious [15g] for the reasons discussed for [1g].

i. [15h]: "and wherein the URL link is associated with the phone number of the mobile device;"

233. Ramanujaiaha discloses or renders obvious [15h] for the reasons discussed for [1h].

j. [15i]: "receiving the real-time video stream from the mobile device through the WebRTC session; and"

234. Ramanujaiaha and Krishnan render obvious [15i] for the reasons discussed for [1i].

k. [15j]: "sending the real-time video stream to the recipient for display on a screen of the recipient,"

235. Ramanujaiaha discloses [15j] for the reasons discussed for [1j].

l. [15k]: "wherein the real-time video stream is received through the WebRTC session while audio content of the emergency call is received through the first connection, and"

236. Ramanujaiaha and Krishnan render obvious [15k] for the reasons discussed for [1k].

m. [15l]: "wherein the real-time video stream is associated with a unique identifier for the mobile device."

237. Ramanujaiaha discloses or renders obvious [15l] for the reasons discussed for [1l].

16. Claim 16: "The non-transitory computer-readable medium of claim 15, wherein the recipient is at least one of an emergency call center or a dispatch unit."

238. Ramanujaiaha discloses the additional limitations of claim 16 for the reasons discussed for claim 2.

17. Claim 17: "The non-transitory computer-readable medium of claim 15, wherein at least one of: (a) the first connection is a voice call over a cellular network; (b) the electronic message is a text message; or (c) the second connection is a text messaging service."

239. Ramanujaiaha discloses the additional limitations of claim 17 for the reasons discussed for claim 3.

18. Claim 18: "The non-transitory computer-readable medium of claim 15, wherein the unique identifier comprises the phone number of the mobile device."

240. Ramanujaiaha discloses or renders obvious the additional limitations of claim 18 for the reasons discussed for claim 4.

19. Claim 19: "The non-transitory computer-readable medium of claim 15, wherein (a) the real-time video stream is transmitted from the mobile device to the recipient through a server that is separate from the mobile device and the recipient; and (b) the server is a proxy server configured to convert a data format of the real-time video stream."

241. Ramanujaiaha discloses the additional limitations of claim 19(a) for the reasons discussed for claim 5, and at least suggests and renders obvious the additional limitations of 19(b) for the reasons discussed in claim 6.

20. Claim 20: "The non-transitory computer-readable medium of claim 15, wherein the WebRTC session further transmits at least one of (i) GPS location data of the mobile device for display on the screen of the recipient or (ii) one or more photographs taken on the mobile device for display on the screen of the recipient."

242. Ramanujaiaha and Krishnan render obvious claim 20 for the reasons discussed for claim 7.

XI. CONCLUSION

243. For the reasons set forth in Section X, it is my opinion that one skilled in the art would have found claims 1-20 of the '383 patent disclosed by and or obvious over the prior art.

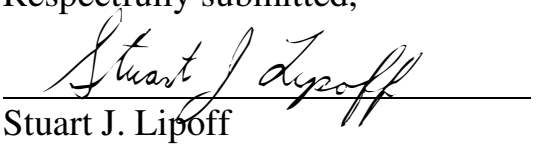
244. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for

cross-examination within the United States during the time allotted for cross-examination.

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

Date: June 24, 2025

Respectfully submitted,



Stuart J. Lipoff