cUNITED 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 GERALD CHRISTENSEN

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I, Gerald Christensen declare as follows:

I. INTRODUCTION

1. I have been retained Carbyne, Ltd. ("Carbyne") as an independent expert consultant in this proceeding before the United States Patent and Trademark Office ("PTO"). I am not an employee of Carbyne or any affiliate or subsidiary of Carbyne.

2. I have been asked to assess U.S. Patent No. 11,689,383 (which I will refer to in this declaration as the '383 patent), along with prior art references identified by the Petitioner in IPR2025-01179. I have also been asked to review and respond to the opinions of Petitioner's expert in this same proceeding.

3. My opinions and the bases for my opinions are set forth below.

4. I am being compensated at my ordinary and customary rate of $400 per hour for my work, plus reimbursement for any reasonable expenses. My compensation is based solely on the amount of time that I devote to activity related to this case and is in no way contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of this or any other proceeding. I have no other financial interest in this proceeding.

II. EDUCATION BACKGROUND, PROFESSIONAL EXPERIENCE, AND OTHER QUALIFICATIONS

5. My curriculum vitae ("CV") is attached hereto as Attachment A and provides an accurate identification of my background and experience.

6. I graduated with a B.S.I.E. in Industrial Engineering from the University of Florida in 1988. I also have an M.B.A. that I obtained from Auburn University in 1997.

7. As explained in greater detail on my CV, both in view of my educational background and decades of industry experience, I am an expert in Information and Communications Technology (ICT) systems, networks, infrastructure and solutions covering a wide range of areas including network connectivity, content routing, and signaling. My experience includes location determination and related applications involving voice and messaging.

8. I am a location technology expert with a wide range of experience in location determination methods (GPS and other methods) as well as supporting technologies such as GIS/mapping, APIs, and interaction with operating systems and applications.

9. In my role as strategic planning manager for BellSouth Cellular in 1996, I was responsible for evaluating and selecting handset-based positioning methods and network approaches to implement the FCC's order for Phase I and Phase II of enhanced 9-1-1 for the company.

10. Phase I of the FCC order required Public Safety Answer Points (PSAP) and carriers to work together for purposes of displaying location information to PSAP terminals (used by emergency service personnel for handling 9-1-1 calls) with

a certain degree of accuracy and precision. Phase I relied upon cell site or cell sector level of location determination and thus had a rather large degree of uncertainty as compared to GPS (a handset-based method of location determination) or various network-based methods under consideration at the time. Phase I level of location accuracy and precision would allow for PSAP personnel to view (on the PSAP terminal) a verbal description of the location of the caller, such as "Corner of 5th Street and Main Street" in Joplin, Missouri.

11. In contrast, Phase II of the FCC order relies upon suitable network or handset-based (most notably GPS) methods for providing much more accurate and precise location information. For example, phase II technology could allow for display on the PSAP terminal of the 9-1-1 caller's position as a dot (or reticle) and a tight/close circle (to reflect that high degree of confidence in location) overlaid onto a map of the area as part of a Geographic Information System (GIS). The GIS mapping software is capable of using GPS information in the form of latitude and longitude estimates to plot a more precise location (than phase I technology) such as placing the caller's actual position as standing in the parking lot behind Hacket Hot Wing, a restaurant located at (postal address) 520 S Main St, Joplin, MO 64801.

12. In 1999, I became the first director of product management for leading location technology middleware provider, SignalSoft, a company that developed the predecessor technology (known as "Location Manager") to the standards-based

Control Plane infrastructure for GSM and ANSI (e.g. CDMA) networks, now known as GMLC/SMLC and MPC respectively relied upon for support of location determination for 9-1-1 calls.

13. In addition to the aforementioned Control Plane related location technologies, I have also worked with many User Plane approaches (e.g. not dependent on carrier infrastructure) to implement and operate location applications. I have accomplished this in various roles including product management and business development at VeriSign, Zoove, and in my own independent consulting practice. This has provided me with experience dealing with a wide variety of location-based service (LBS) applications including integration of LBS apps at both the device and network level.

14. I am also an expert in messaging, including SMS and MMS, used for person-to-person communications as well as business to person engagement such as mobile marketing. This includes novel ways in which messaging and/or data may be integrated with various applications as well as infrastructure that typically would otherwise only be used for voice calls.

15. I co-founded Zoove, a mobile marketing company, serving as its CTO for five years. I engineered the UI and interoperability for the Zoove's Star/Star (**) service that allowed an end-user to engage in a multi-modal (voice, text, and data),

multi-media experience simply by dialing ** and hitting send from their mobile phone.

16. Still in use today, the Star/Star solution allows users to seemingly place a voice call (e.g. dialing **NFL from their keypad) yet not be reliant upon voice communication. For example, dialing **NFL (**635 on the keypad) could result in the user receiving a text message for information/content rather than speaking with a person or engaging with an interactive voice response (IVR) system to obtain information/content. The Star/Star solution relies upon the novel use and integration of the signaling system number seven (SS7) protocol, intelligent networking capabilities, and interoperability between carrier switches and third-party infrastructure owned and controlled by Zoove.

17. I am also an expert in both voice call and message management at the system, network, equipment, and device level. For example, I was one of the principal people involved with launching intercarrier text messaging within the United States.

18. I am also a named inventor on several patents and applications relating generally to messaging and identity including US Patent No. 8,103,868 B2 (Sender Identification System and Method), US App. 11/985,576 (System and Method for Mediating Service Invocation from a Communication Device), and US Pub.

2013/0303137 A1 (System and Method for Service Invocation and Response with a Communication Device based on Transmitted Code Content Recognition).

19. Additional details regarding my employment history, which includes work for various wireless services, networking, telecommunication, and military entities, can be found on my CV.

20. I am familiar with the subject matter of this case, and consider myself an expert in, among other things, emergency communication systems, wireless communications, networking, and related fields

III. ASSIGNMENT AND MATERIALS CONSIDERED

21. I have been asked to provide analysis and explain the subject matter of the ’383 patent, including the state of the art when the ’016 patent application was filed. I have also been asked to consider, analyze, and explain certain prior art to the ’383 patent identified by Petitioner and its expert.

22. The opinions expressed in this declaration are not exhaustive of opinions I may offer in the future regarding the ’383 patent and its claims. Therefore, the fact that I do not address a particular point should not be understood to indicate an agreement on my part that any claim complies with the requirements of any applicable patent or other rule.

23. I reserve the right to amend and supplement this declaration in light of additional evidence, arguments, or testimony presented during this IPR or related proceedings on the ’383 patent.

24. In forming the opinions set forth in this declaration, I have considered and relied upon my education, knowledge of the relevant field, knowledge of scientific and engineering principles, and my experience. I have also reviewed and considered the ’383 patent (Exhibit 1001), its prosecution history (Exhibit 1002), the Declaration of Stuart J. Lipoff (Ex. 1003), the Petition in this proceeding (Paper 1), and the following additional materials:

Exhibit	**Description**
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)
2006	June 7, 2021 CentralSquare press release entitled “CentralSquare Technologies Now Offering Carbyne’s C-Live Universe”
2007	U.S. Pub. 2016/0028790 A1 to Eriksson et al.
2009	Garcia et al., WebRTC Testing: Challenges and Practical Solutions, IEEE (2017)
2012	2025 Product Leader Report, Frost & Sullivan
2013	Dec. 21, 2020 Memo Published by the Washoe County Communications Supervisor regarding a “Regional PSAP Funding Request” (available at https://www.washoecounty.gov/technology/

	board_committees/911_response/2021/Files/012121/Item%2015%20-%20WC%20Carbyne%20c-Live%20Universe.pdf)
2014	April 11, 2022 Scope of Services Document Published by Miami Dade County regarding "Carbyne c-Live Universe Video-To-911" (available at https://www.miamidade.gov/Apps/ISD/StratProc/ProcurementNAS/pdf_Files/WaiveCompetitions/Notice_to_Wave_Comp_-_Scope.pdf)

IV. UNDERSTANDING OF THE LAW

25. I am not an attorney, but I have been informed of several legal principles concerning patent validity, which I have employed in forming my opinions in this declaration.

26. I have been informed and understand that each patent claim is considered separately for purposes of validity and that a dependent claim that depends from another claim includes all of the limitations of the claim it depends from.

27. I understand that the first step in comparing an asserted claim to the prior art is for the claim to be properly construed. I address how a person of ordinary skill in the art (a "POSITA") would have understood the claims of the alleged invention in Section V below.

28. I understand that a patent claim is "anticipated" only if each and every element the claim requires is disclosed in a single prior art reference either expressly or inherently. The prior art must also arrange these elements in the same way the

claim requires. An element is only inherently disclosed by a prior art reference if it is necessarily present in that reference. The absence of any claim element in a prior art reference means that that reference does not anticipate.

29. I understand that a patent claim is only "obvious" when the differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

30. In making an obviousness determination, I understand that there are several factors that must be considered: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art at the time the invention was made; (3) the differences between the claimed invention and the prior art, if any, and (4) objective considerations, if any exist, such as any commercial success, copying, prior failure by others, licenses, longstanding need, and unexpected results.

31. I understand that a patent claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was independently known in the prior art, whether those references were set forth in a single reference or in a combination of references. Instead, it must have been obvious to arrange those elements in the same way as the elements in the claim.

32. I understand that either a single reference or multiple references may be the basis for finding that a claim is obvious. But the mere presence of claimed

elements in the prior art is not enough. A patent challenger must show that there is a reason, suggestion, or motivation that would lead one of ordinary skill in the art to either modify the single reference or combine prior art references to arrive at the claimed subject matter.

33. I understand that there is no single way to define the line between true inventiveness on the one hand (which is patentable) and the application of common sense and ordinary skill to solve a problem on the other hand (which may not be patentable). Thus, when assessing obviousness, a number of different inquiries can be made and considered. For instance, market forces or other design incentives may be what produced a change in the technology of the prior art, rather than true inventiveness. I further understand that explicit teachings or suggestions in the prior art to make the modification or combination of elements claimed in the patent may be evidence of obviousness. Further, an innovation may be obvious if it applies a known technique that had been used to improve a similar device or method in a similar way. I understand that a claimed invention may be found to be obvious to try if the claimed innovation was one of a relatively small number of possible approaches to the problem with a reasonable expectation of success by those skilled in the art. But again, in all cases there must be a reason to arrive at the claimed subject matter. Likewise, reasons not to arrive at the claimed subject matter weigh against obviousness.

34. I also understand that it is improper to engage in hindsight when trying to determine the obviousness of a patent claim. Many true inventions might seem obvious with the benefit of hindsight. I understand that the obviousness inquiry must be conducted from the standpoint of a person of ordinary skill in the field at the time the claimed invention was made. What is known today, and what is learned from the teachings and disclosures of the patent itself containing the claim under analysis, should not be considered. Nor should one use the patent claim as a guide to picking out elements of the prior art for combination.

35. I understand that if a claim is not obvious, then the claims that depend from it are not obvious.

36. I provide my opinions in this declaration based on the guidelines set forth above.

V. LEVEL OF SKILL IN THE ART

37. I have been informed and understand that the level of ordinary skill in the relevant art at the time of the invention is relevant to inquiries such as the meaning of claim terms, the meaning of disclosures found in the prior art, and the reasons a POSITA may have for combining references.

38. I have been informed and understand that factors that may be considered in determining the level of ordinary skill include: (1) the education of the inventor; (2) the type of problems encountered in the art; (3) prior art solutions to

those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) education level of active workers in the relevant field. I have been further informed and understand that a person of ordinary skill in the art (POSITA) is also a person of ordinary creativity.

39. In my opinion, a POSITA in the field of the ’383 patent would have had a degree in would have had a degree in computer science or computer engineering, along with 2 years of professional experience working with telecommunications systems, or an equivalent level of skill, knowledge, and experience. This POSITA would have been aware of and generally knowledgeable about the standard features and functionality of emergency calling, geolocation, and text messaging systems.

40. Based on my education, training, and professional experience in the field of the claimed invention, as discussed in Section II, I was a person of more than the ordinary level of skill in the art as of November 2017.

41. In forming my opinion, I have drawn on my academic background and professional experience, including experience hiring and managing engineers engaged in development projects applying the technologies and applications described in the ’383 patent. My opinions herein, however, were formed taking into account the perspective of an ordinarily skilled artisan.

VI. THE ’383 PATENT

A. Effective Filing Date

42. I understand that the ’383 patent identifies itself as a continuation of a series of other applications, the earliest of which was filed November 27, 2017.

43. My opinions in this declaration were formed from the perspective of a POSITA as of November 2017 including both the knowledge of a POSITA at that time as well as how a POSITA would have understood the prior art. I note that Mr. Lipoff used this same date in his declaration. *See* Ex. 1003, ¶ 5.

B. Overview

44. The ’383 patent “relates generally to streaming of data … from a user device without the need to download and install a specialized application.” ’383 patent, 1:25-28.

45. According to the patent, “[m]any mobile devices on the market today … come equipped with built-in media capturing components” like “still cameras, video cameras, microphones, global positioning receivers, and the like.” *Id.*, 1:29-32.

46. The ’383 patent also explains that information collected by these “media capturing components” is useful when the mobile device user calls “an emergency or municipal dispatch unit” seeking assistance. *Id.*, 1:37-39, 45-50.

47. “[E]very additional detail that can be retrieved from the call may help the dispatch operator better understand the situation in the field, and explain to the

dispatched forces the situation before they arrive on-scene so they can be better prepared." *Id.*

48. The patent also explains that existing systems for collecting additional information during emergency calls require users to "download and install specialized applications, which may take time, losing precious moments of data." *Id.*, 1:58-60.

49. The '383 patent goes on to disclose a "method for streaming real-time data from a user device to a dispatch unit terminal." *Id.*, 2:21-25.

50. Rather than requiring special software, the '383 patent's method transmits "a link" to that device that "includes instructions to initiate streaming of real-time data" in a way that "match[es]" that data to an existing "connection" between the user device and the "dispatch terminal." *Id.*, 2:23-31.

51. The link can be in the form of a "URL" sent to the device in a text message. *Id.*, 2:57-3:2.

52. The texted URL "allows the user to click on the URL to access a web browser" "to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream" from the device to the dispatcher. *Id.*, 3:1-12.

53. Figure 2—which is reproduced below—provides an example of this method.

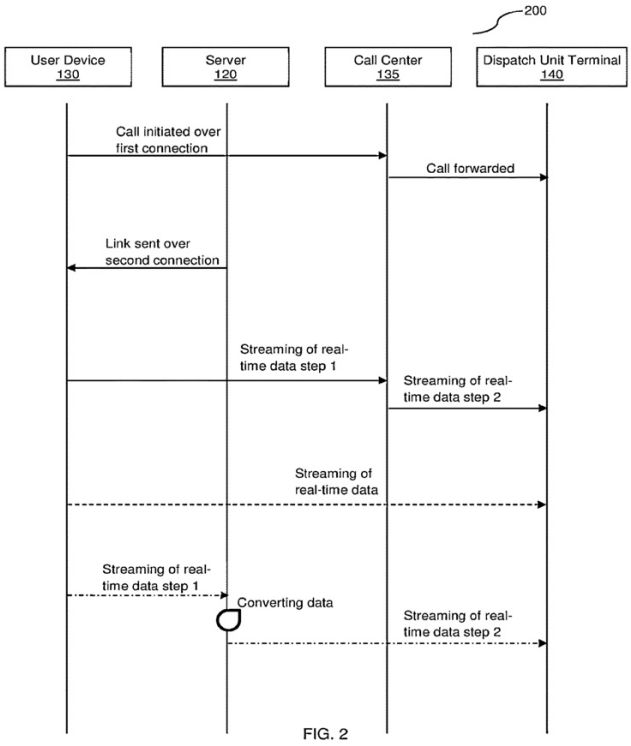


FIG. 2

Id., Fig. 2.

54. As shown, "a call is" first "initiated from a user device 130, e.g., a user dials 9-1-1 to report a robbery…." *Id.*, 7:37-40.

55. The call is "connected to a call center 135" and then "forwarded to an appropriate DUT" (or dispatch unit terminal) "140." *Id.*, 7:40-42.

56. "When the call is answered," a "server 120 identifies the UD 130 and sends a link over a second connection, such as an SMS, to the UD 130." *Id.*, 7:42-45.

57. Upon receipt of the SMS, "the user engages the link" and the user device's "web browser is launched…." *Id.*, 7:45-46.

58. This in turn allows for "streaming of real-time data, such as video, audio, location data, and the like from the UD 130" to the "DUT 140." *Id.*, 7:45-49.

59. "Any real-time data streamed or otherwise uploaded to the call center 135 is coupled with [a] unique identifier included in the link" originally sent to the user. *Id.*, 7:20-22.

60. Then, the video to be "route[d]" to the same recipient that "was connected to through the first connection" allowing for receipt of "audio content." *Id.*, 7:22-36.

61. According to the '383 patent, this "may enable a dispatch operator operating the DUT 140 to have a better perspective of the circumstances where the UD 130 is located." *Id.*, 7:60-65

C. Claims

62. For reference, the '383 patent's claims are listed below. Of these, claims 1 and 8, and 15 are independent.

> **1**. A method implemented via execution of computing instructions configured to run at one or more processors, the method comprising:
>
> obtaining a phone number of a mobile device used by a user making an emergency call, wherein the emergency call is conducted with a recipient through a first connection;

transmitting a uniform resource locator (URL) link to the mobile device through an electronic message, wherein the electronic message is transmitted through a second connection using the phone number, wherein the second connection is different from the first connection, 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, to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device, and wherein the URL link is associated with the phone number of the mobile device;

receiving the real-time video stream from the mobile device through the WebRTC session; and

sending the real-time video stream to the recipient for display on a screen of the recipient, 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 wherein the real-time video stream is associated with a unique identifier for the mobile device.

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

3. The method of claim **1**, wherein at least one of:

the first connection is a voice call over a cellular network;

the electronic message is a text message; or

the second connection is a text messaging service.

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

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.

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.

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.

8. A system comprising:

processing circuitry; and

a non-transitory computer-readable medium storing computing instructions that, when executed on the

processing circuitry, cause the processing circuitry to perform:

obtaining a phone number of a mobile device used by a user making an emergency call, wherein the emergency call is conducted with a recipient through a first connection;

transmitting a uniform resource locator (URL) link to the mobile device through an electronic message, wherein the electronic message is transmitted through a second connection using the phone number, wherein the second connection is different from the first connection, 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, to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device, and wherein the URL link is associated with the phone number of the mobile device;

receiving the real-time video stream from the mobile device through the WebRTC session; and

sending the real-time video stream to the recipient for display on a screen of the recipient, 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 wherein the real-time video stream is associated with a unique identifier for the mobile device.

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

10. The system of claim **8**, wherein at least one of:

the first connection is a voice call over a cellular network;

the electronic message is a text message; and

the second connection is a text messaging service.

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

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.

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.

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.

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

obtaining a phone number of a mobile device used by a user making an emergency call, wherein the emergency call is conducted with a recipient through a first connection;

transmitting a uniform resource locator (URL) link to the mobile device through an electronic message, wherein the electronic message is transmitted through a second connection using the phone number, wherein the second connection is different from the first connection, 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, to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device, and wherein the URL link is associated with the phone number of the mobile device;

receiving the real-time video stream from the mobile device through the WebRTC session; and

sending the real-time video stream to the recipient for display on a screen of the recipient, 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 wherein the real-time video stream is associated with a unique identifier for the mobile device.

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.

17. The non-transitory computer-readable medium of claim **15**, wherein at least one of:

the first connection is a voice call over a cellular network;

the electronic message is a text message; or

the second connection is a text messaging service.

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

19. The non-transitory computer-readable medium of claim **15**, 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; and

the server is a proxy server configured to convert a data format of the real-time video stream.

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.

VII. CLAIM CONSTRUCTION

63. I am not a legal expert or an attorney and offer no opinions on the law. I understand that claim construction is a matter of law. However, I have been informed by counsel of the legal standards that apply to claim construction in an *inter partes* review, and I have applied them in forming my opinions. I understand that during an *inter partes* review, the same claim construction standard used in federal district court is applied when addressing the meaning of claim terms.

64. I have been informed that the words of a claim are generally given the ordinary and customary meaning that the term or phrase would have to POSITA at

the time of the invention in view of the surrounding claim language, the specification and the file history (collectively, the "intrinsic evidence" or "intrinsic record").

65. I also understand that courts may consider extrinsic evidence, such as expert and inventor testimony, dictionaries, and learned treatises (collectively, the "extrinsic evidence" or the "extrinsic record"), but that such extrinsic evidence should be given less weight than the intrinsic evidence.

66. In my opinion, the terms of the '383 patent's claims do not require further construction and can be afforded their plain and ordinary meaning for purposes of the analysis of the prior art that I am conducting in this declaration.

VIII. ANALYSIS OF PETITIONER'S (AND MR. LIPOFF'S) POSITIONS

67. For the reasons I explain in greater detail below, Petitioner and Mr. Lipoff have not shown that the prior art renders the '383 patent's claims unpatentable. The prior art neither anticipates nor renders obvious for the reasons Petitioner and Mr. Lipoff argue.

A. Overview of the Prior Art

68. The following paragraphs provide an overview of the two prior art references I discuss throughout this declaration.

1. Ramanujaiaha

69. Ramanujaiaha (Ex. 1005)

70. Ramanujaiaha relates to a system for "enhanc[ing] … the customer relationship or the buying/servicing experience overall" when a customer calls into a customer service line. Ramanujaiaha, 1:26-35.

71. "Enhancing or optimizing such interactions may result in greater CX and positive outcome for the business." *Id.*, 1:33-35.

72. Ramanujaiaha's system allows customers to engage in a "multi-channel communication concurrently through multiple mediums in order to, for example, fill a form visually, while being provided voice instructions through an interactive voice response (IVR) system of through a live agent." *Id.*, 5:29-34.

73. Alternatively, the customer may be provided with the ability to "switch" communication methods. *Id.*, 5:33-35.

74. For instance, "a customer desiring to speak with a live agent over a voice medium may decide to switch the interaction modality to chat, for example, when the wait time for engaging in a chat session is shorter than a voice session." *Id.*, 5:35-42

2. Krishnan

75. Krishnan relates to the "management of callers reporting an emergent event." Krishnan, 1:7-8.

76. Krishnan explains that "[u]tilization of audio information alone can make call prioritization" (or "triage") "very difficult" during an emergency. *Id.*, 1:28-32.

77. Krishnan proposes routing emergency callers to a "trusted data channel (e.g., a WebRTC call) with a PSAP system" that allows the caller to "provide their perspective about the event via the data channel." *Id.*, 1:41-44.

78. This collected data allows the PSAP to "determine information about the event (e.g., to build a picture of the scenario) as well as determine which caller gets through to the PSAP agent first and which callers wait." *Id.*, 1:44-49

B. *Ground 1*: Ramanujaiha Neither Anticipates Nor Renders the Claims Obvious

79. In my opinion, Ramanujaiha does not teach (either expressly or inherently) all the limitations required by the '383 patent's claims. It also does not render the claims obvious.

1. *Ramanujaiaha Does Not Teach Receipt of a WebRTC Real-Time Video Stream "While Audio Content of the Emergency Call Is Received"*

80. In my opinion the Petition and Mr. Lipoff failed to show that Ramanujaiaha teaches receipt of a WebRTC real-time video stream "while audio content of the emergency call is received."

81. The method of independent claim 1 of the '383 patent requires two forms of communication: (1) "an emergency call" between a mobile device and

recipient "conducted … through a first connection[,]" and (2) "a WebRTC … session to transmit a real-time stream from the mobile device" to the recipient.

82. The claim also specifies that "the real-time video stream" must be "sen[t] … to the recipient for display," such that the "real-time video stream is received through the WebRTC session ***while audio content of the emergency call is received*** through the first connection." '383 patent, claim 1.

83. Because of this, the claim requires that both an audio call and real-time video communication via WebRTC from the user to the recipient must occur ***simultaneously*** and via different connections.

84. Independent claims 8 and 15 impose the same requirement. *See id.*, claims 8, 15.

85. The '383 patent specification discusses—and explains the importance of –***simultaneous*** audio and video communication between a mobile device and a recipient during an emergency.

86. "[E]very additional detail that can be retrieved" during an emergency call "may help the dispatch operator better understand the situation in the field…." *Id.*, 1:45-48. Further, the receipt of real-time data allows a dispatcher "to have a better perspective of the circumstances where" a user device "is located[.]" *Id.*, 7:60-65 (noting that).

87. While "mobile devices … come equipped with built-in media capturing components[,]" the '383 patent explains that these are "rarely used" "when a person calls an emergency or municipal dispatch unit." *Id.*, 1:29-31, 37-40.

88. To improve emergency communications, the '383 patent's system and method allows for "streaming real-time data from a user device to a dispatch unit terminal" while an audio call is still ongoing. *Id.*, 2:21-31; *see also id.*, 2:67-3:12 (discussing transmission of a "real-time video stream from the mobile device" through a "WebRTC session").

89. I note that this feature also served to distinguish the '383 patent from the prior art, leading to claim allowance during prosecution. *See* Ex. 1002, pp. 18-19 (applicant explaining that the prior art fails to teach a system and method "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").

90. In my opinion, there is no teaching of ***simultaneous*** audio and WebRTC real-time video communications from a user to a recipient during an emergency call in Ramanujaiaha.

91. According to the Petition, Ramanujaiaha "discloses or renders obvious" the claimed receipt of a real-time video stream while an audio emergency call is ongoing because it references a system that employs "two modalities, a voice media

channel that uses the media connection device 215, and a visual medial channel that uses the … mobile web 220." Petition, 35.

92. The Petition then goes on to explain that Ramanujaiaha teaches "concurrently invok[ing]" both a "voice channel and a visual channel … during an interaction." *Id.*, 36. The Petition then concludes that the referenced "visual channel" in Ramanujaiaha must for some reason be a "video stream using WebRTC." *Id.* Mr. Lipoff's declaration includes the same statements. *See* Ex. 1003, ¶¶ 113-115.

93. I disagree that Ramanujaiaha's "visual channel" that is "concurrently invoked" along with an a "voice channel" is meant to be a WebRTC real-time video stream.

94. Instead, Ramanujaiaha explains that this "visual channel" is "visual content" or "visual media" that is "render[ed]" by either a "web browser or mobile application" running on the user's device. Ramanujaiaha, 10:39-45, 12:22-37.

95. This is repeated many times, with Ramanujaiaha identifying a "web site or email" as examples of "visual" content (*id.*, 5:35-36) explaining that "visual content" can be "generate[d] … for presenting … on the interface of" a user device (*id.*, 11:5-11) and referencing a "visual page" provided for display by a user "web browser" (*id*, 13:48-49).

96. According Ramanujaiaha, use of the "visual channel" allows, for instance, the user to "fill a form visually, while being provided voice instructions through an interactive voice response (IVR) system or through a live agent." *Id.*, 5:33-36. Similarly, "visual content" such as "visual user interfaces (e.g., IVR menu, video, etc.)" can be provided to the "user device." *Id.*, 11:5-12; *see also id.*, 12:30-37 (repeatedly referring to a "visual media channel" that is used to provide a user device with a "visual IVR" or interactive menu).

97. As can be seen, Ramanujaiaha identifies rendered web pages, fillable forms, and user interfaces as "visual" content that can be transmitted to a user during a "voice" call.

98. Ramanujaiaha does not, however, teach that WebRTC real-time video is a contemplated type of "visual" content that can accompany "voice" communication.

99. The Petition and Mr. Lipoff do cite passages in Ramanujaiaha that reference "WebRTC." *See* Petition, 35-36 (citing Ramanujaiaha, 9:46-52, 10:34-42); Ex. 1003, ¶¶ 113-115.

100. None of these passages state that Ramanujaiaha's "visual" channel is meant to be WebRTC.

101. For example, in one cited passage, Ramanujaiaha explains that a "contact center system" may have a "web page" that "provides a mechanism for

contacting the contact center, via, for example, web chat, voice call, email, web real time communication (WebRTC), or the like." Ramanujaiaha, 8:14-27. Here, WebRTC is simply one method that may be used by a user to reach a contact center in the first place.

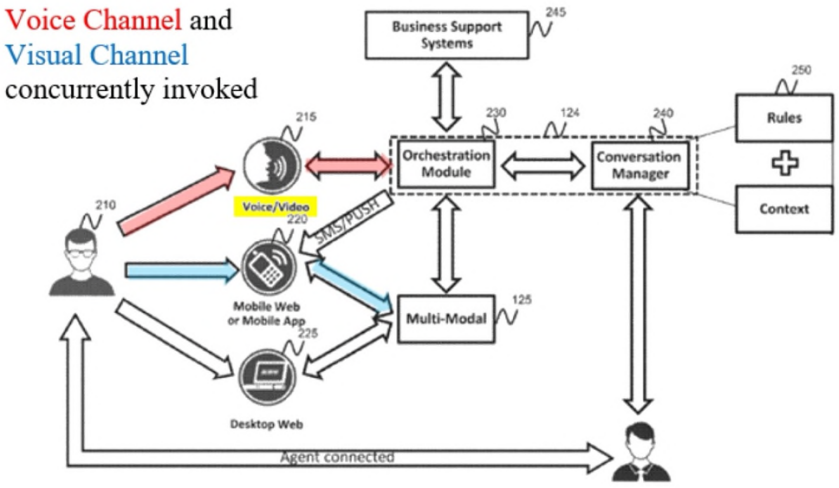
102. Next, in another cited passage Ramanujaiaha lists "WebRTC" among a collection of other "media connection[s]" or "communication channel[s]" available to a "user 210" for purposes of initially "communicating with the contact center." *Id.*, 9:46-52, 10:34-42. Here, WebRTC is identified as one of many means of communication that may be present on and employed by a user device to initiate contact with the contact center in the first instance.

103. None of these passages state that a user device engages in simultaneous audio and real-time video communication with a contact center. None state that the "visual" channel is meant to be WEbRTC.

104. Instead, as noted above, the only types of "multi-modal" communication discussed in Ramanujaiaha is the provision of "visual" content—like a web page, fillable form, or interactive menu—to the user device while another form of communication is ongoing.

105. This, in my opinion, is reinforced by Figure 2 of Ramanujaiaha, which the Petition and Mr. Lipoff cite repeatedly.

106. FIgure 2 is reproduced below. As shown, Ramanujaiaha identifies "video" as transmitted over the initial "voice channel" (annotated red by Petitioner) to the call center, not the later opened "visual channel" (annotated blue by Petitioner):



Petition, 36 (reproducing Ramanujaiaha, Fig. 2 in annotated form with further yellow annotation added by Patent Owner).

107. All of Ramanujaiaha's other figures include the same teaching. For instance, in Figure 3, communication begins at step346 with a "New voice/video call":

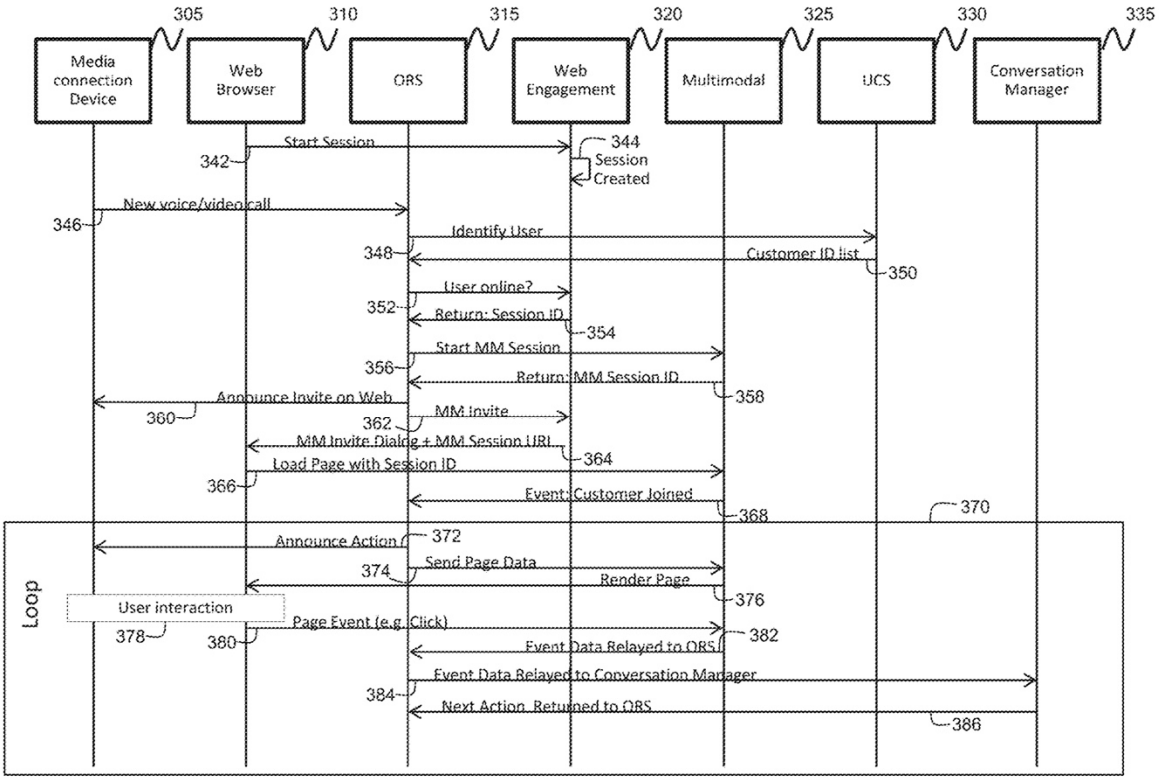


FIG. 3

Ramanujaiaha, Fig. 3; *see also* Figs. 4, 14 (similarly noting that interaction begins with a "voice/video call").

108. Ramanujaiaha even expressly states that it is the initial communication with the contact center (if any) that is meant to occur via WebRTC: In particular, per Ramanujaiaha, "WebRTC" is one the potential ways that a "user 210" can employ with his or her "media connection device (e.g., a mobile phone or LAN line phone) 215" to make initial contact with the call center. *Id.*, 10:32-38, 11:60-62.

109. So in sum, at best in Ramanujaiaha, "video" is identified as an alternative to communication via audio. Further, if used it is meant to be another way to initially communicate with the contact center.

110. These two forms of communication are not meant to occur (and are never identified in Ramanujaiaha as occurring) at the same time as all the '383 patent's claims require.

111. Indeed, this would make little sense. Again, in Ramanujaiaha, the initial or first interaction with the contact center may be WebRTC. The second interaction is intended to be "different" from the first. *Id.*, 10:11-14. A "visual" media channel—like a web page or interactive menu—is such a "different" communication. A WebRTC call is not: that communication method is the same as the first method used to interact with the contact center.

112. Other portions of Ramanujaiaha serve to further confirm that the "visual" channel is not meant to be WebRTC.

113. Ramanujaiaha details what its system does after it "initiates a second interaction" in a "multimodial session" "through the link" provided by Ramanujaiaha's system. *Id.*, 12:3-16.

114. According to Ramanujaiaha, when the user "click[s] on the link or enter[s] the link through mobile web/mobile app 220 or through desktop web 225," "[a]n event is relayed from the user device to the multimodal server 125, which is then forwarded to the orchestration module 230." *Id.*, 12:14-18.

115. The visual content provided to the user is then "synchronized" so that "context is maintained." *Id.*, 12:22-37. This in turn allows the "visual"

communication channel to avoid, for instance, "repeat[ing] ... questions that were already asked and answered while interacting" via "telephony…." *Id.*, 12:34-37.

116. Because the "visual" channel is "synchronized" and has its "context" maintained with the first channel, a POSITA would not understand this "visual" communication channel to refer to a real-time communication.

117. There is no need to "synchronize" or "maintain[]" the "context" of a real-time communication. A real-time communication is occurring at the same time the user is communicating via other means.

118. It is, however, necessary to "synchronize" other visual content (like a web page, interactive menu, or interactive form as Ramanujaiaha discusses)

119. This is what Ramanujaiaha means when it refers to a "second interaction" that occurs via a "visual communication channel": the user is provided with an interactive visual (like a menu or web page) that must be updated to ensure that it is consistent and contextually appropriate given the audio or video call the user is already having with the contact center.

120. This is also what Ramanujaiaha depicts in its figures. For instance, Figure 3 depicts a process where a user "may interact with the web browser 310 by clicking a link to generate a page event." Ramanujaiaha, 13:39-61.

121. The "orchestration module 230" and "conversation manager 335" then use this to "render[]" an appropriate "next page" for display to the user at step 376.

Id., 13:54-65; *see also* Figs. 3 (depicting a "voice/video call" followed by "user interaction" with a provided "page"); Fig. 14 (similar).

122. This is not referring to real-time video communication. The "visual" communication with the user occurs via a webpage that is updated in view of the interaction with the user. *See id.*

123. Similarly, in Figure 4, the "multimodal" communication entails transmitting "page data" to the user at step 468. Ramanujaiaha, 14:57-15:17. Then "based on the context of … events," the "orchestration module" can later send HTML "content at act 478 to the web browser." *Id.*, 15:22-30; Fig. 4 (depicting a "voice/video call" followed by the provision of "HTML content" and "page data").

124. Once again, this is HTML content (like an interactive menu or updated web page) for display by the web browser, not real-time video.

125. Petitioner and Mr. Lipoff may attempt to argue in reply that Ramanujaiaha's statement that a "multimodal session" may entail opening "a visual communication channel" (Ramanujaiaha, 12:10-13) coupled with an earlier discussion of the term "communication" (*id.*, 9:45-52) must mean that the referenced "visual communication channel" includes WebRTC.

126. In my opinion, this is not the case. Ramanujaiaha discusses the meaning of the term "communication," not "visual communication channel." *See id.*, 9:45-52.

127. And Ramanujaiaha explains that the term "visual" is meant to refer to, for instance, a "visual interface (e.g., a web site or email)." *Id.*, 5:35-36.

128. Moreover, Ramanujaiaha consistently explains that its system is intended to "visual content" via the "visual channel." *E.g., id.*, 10:38-42, 10:55-59; 11:4-8; *see also id.*, 13:44-49 (noting discussing "rendering a page (e.g., a visual page)"); 15:65-67 (noting that a "user" can "utilize a visual channel to input data (or events).

129. It also characterizes the "visual communication channel" as a "visual media channel" that is meant to display "app" or "web" data. *Id.*, 12:23-26.

130. Again as I have explained, this is referring to the provision of visual content like a web page, interactive menu, or form from the contact center during a voice call, not simultaneous audio and real-time video communication from the user.

131. Mr. Lipoff also appears to argue that WebRTC must be transmitted via the "mobile web or mobile app" depicted in Figure 2 of Ramanujaiaha because WebRTC employs a web browser.

132. While it is of course true that WebRTC is meant to work via browser, this fact alone does not somehow negate everything else Ramanujaiaha's teaching or provide the missing disclosure this particular '383 patent claim limitation requires. Again, as I have explained, in Ramunujaiaha, WebRTC is used for the initial communication with the contact center. The "mobile web" element shown in

Figure 2 is meant to transmit "visual" content like web pages and interactive menus. Mr. Lipoff (and Petitioner) point to nothing in Ramanujaia (nor is there anything) that says anything to the contrary.

133. In my opinion, this makes Ramanujaiaha non-anticipatory.

134. Again, Ramanujaiaha does reference "concurrent[]" invocation of a "voice" and "visual" "channel" using a "multimodal server." *E.g.*, Ramanujaiaha, 10:55-59.

135. But it does not state that the "visual" channel is real-time video. Instead, in all cases WebRTC is employed as an alternative to "voice." And the "visual" communications are web sites, fillable forms, and interactive menus.

136. Ramanujaiaha includes no disclosure of audio and real-time video communications from a user that are to occur simultaneously via different connections.

137. Next, as I have noted, Ramanujaiaha does reference WebRTC. *See, e.g., id.*, 9:46-52, 9:32-38.

138. But again, it never discloses that WebRTC must be used to transmit real-time video, let alone that this WebRTC real-time video is transmitted from the user device to the contact center at the same time an audio call is occurring. That, however, is what the '383 patent's claims require.

139. As I have explained, at best Ramanujaiaha identifies WebRTC as an alternative means to communicate with a contact center in the first instance.

140. Next, in my opinion, Ramanujaiaha does not render the claims obvious for the reasons explained in the Petition and Mr. Lipoff's declaration.

141. When discussing another, earlier claim element, the Petition and Mr. Lipoff argues that "Ramanujaiaha at least suggests" what the claims require "because it discloses that the use may use the web browser to send the call center 'visual content' such as 'video communications' using 'web real time communication (WebRTC).'" Petition, 25-27; *see also* Ex. 1003, ¶¶ 95-96.

142. The Petition and Mr. Lipoff also cite Ramanujaiaha separate discussion of concurrent provision of "voice" and "visual" content (like a web page, form, or interactive menu) to a mobile device. *See* Petition, 35-37; *see also* Ex. 1003, ¶¶ 113-115.

143. But neither the Petition nor Mr. Lipoff provide any explanation of why a POSITA would have been motivated to combine Ramanujaiaha's different teachings together to arrive at the claimed subject matter.

144. The section of the Petition and Mr. Lipoff's declaration discussing the claim requirement that "real-time video stream [be] received through the WebRTC session while audio content of the emergency call is received" does not even mention motivation to combine. *See id.*

145. Due to this lack of relevant discussion, Petitioner and Mr. Lipoff appear to simply assume that the "visual content" or "visual channel" in Ramanujaiaha is necessarily real-time video.

146. As I have explained, there is no such disclosure in Ramanujaiaha. Instead, the only examples of "visual" communication that occurs during an audio (or video) call in Ramanujaiaha are (1) "visual content" that is "render[ed]" by a "web browser" (like a web page or interactive form) or (2) a "visual user interface." Ramanujaiaha, 10:39-45; 11:5-12.

147. As I have also explained, both voice and video are identified as means of communication over a single channel to initially communicate with the contact center.

148. I have reviewed both the Petition and Mr. Lipoff's declaration and found no explanation of why a POSITA would have employed audio and real-time video communication at the same time, what benefit this would have provided, or how it would have been accomplished.

149. Moreover, as I have explained, I have found no explanation of why a POSITA would use the same communication method for both the "first" interaction (which can be WebRTC) and the "second" interaction (which is supposed to be "different" from the first). Using the same communication method—or one that is functionally the same—for both interactions would provide none of the benefits set

forth in Ramanujaiaha. For instance, it would not "enhance … the customer relationship" (Ramanujaiaha, 1:31-33) or "optimiz[e] … interactions" (*id.*, 1:34-35). Instead, a customer would be likely to view it as wasteful and redundant.

150. As I have noted, both the Petition and Mr. Lipoff do include a section entitled "motivation" to combine when discussing another, different claim limitation (not the limitation that requires simultaneous audio and WebRTC real-time video communication).

151. Here, the Petition and Mr. Lipoff state that Ramanujaiaha teaches "establish[ment of] a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device." *See* Petition, 27-29; Ex. 1003, ¶¶ 95-96.

152. Both the Petition and Mr. Lipoff simply declare that a POSITA purportedly would have "appreciated the advantages of utilizing … real-time communication in emergency situations" such as "allow[ing] the user to quickly and accurately convey the nature of their emergency."

153. This, however, appears to be directed to whether it would have been obvious to use real-time video as one of the means of communication during an emergency.

154. It says nothing at all about (and provides no motivation to use) simultaneous audio and real-time video communications.

155. Moreover, there are affirmative reasons why a POSITA would not have employed WebRTC to communicate with a mobile device, particularly during an emergency call.

156. For instance, WebRTC was known to provide poor "video quality due to packet loss," "lossy" (or inaccurate) video due to the encoding codec employed, and "jitter" that produces "unintended deviations that degrade the quality of communications." Ex. 2009, 6.

157. During an emergency, clear, uninterrupted communication with the emergency dispatcher is of tantamount importance.

158. POSTIA would have recognized that use of WebRTC to transmit real-time video—particularly at the same time other communication is occurring—has the potential to significantly increase the demands on the user's device.

159. This would in turn adversely impact the user's ability to engage in the required clear communication with the dispatcher.

160. WebRTC, as the name implies is for real-time communication, which by its nature is latency dependent. There are certain use cases in which it is important to use real-time and others in which it is not so important. For example, a PSAP operator may need real-time to make dispatch decisions about a potentially escalating situation in which the situation is rapidly evolving. In contrast, non-real-time (as would be the case by simply recording a video and transmitting via MMS)

would suffice, such as sending a brief video clip of the aftermath of an accident in which the situation is static (e.g. nothing is changing) regarding personal safety of individuals involved. None of this is discussed or mentioned in Ramanujaiaha. In those cases in which real-time is not necessary—as is the case for Ramanujaiaha's "visual" communications—any number of different methods for relaying data to the user can (and indeed would more likely) be employed rather than using WebRTC.

2. *Ramanujaiaha Does Not Teach Use of "the Phone Number of the Mobile Device" as the Claimed "Unique Identifier"*

161. In my opinion, Ramanujaiaha also does not teach what claims 4, 11, and 18 require.

162. These claims all provide that the "unique identifier comprises the phone number of the mobile device." '383 patent, claims 4, 11, 18.

163. This refers back to, and further limits, an element in claims 1, 8, and 15 requiring that "the real-time video stream is associated with a unique identifier for the mobile device." *Id.*, claims 1, 8, 15.

164. When discussing claim 1, the Petition (and Mr. Lipoff) argued that Ramanujaiaha includes the claimed "unique identifier" for two reasons: (1) it "generate[s]" a "session ID" associated with a particular "multimodal session," and (2) purportedly because "the real-time video stream is associated with the caller's telephone number." Petition, 37-38.

165. When discussing claim 4 (and similar claims 11 and 18), the Petition and Mr. Lipoff cite back to (2), Ramanujaiaha's purported "associate[ion]" of "real-time video" "with the caller's telephone number." *See id.*, 41.; *see also* Ex. 1003, ¶¶ 122.

166. Ramanajaiaha does state that it uses a "Session ID" to associate the different parts of a "multimodal session." Ramanujaiaha, 12:16-26 ("The multimodal session is associated with the session ID of the first interaction."); 12:47-54 ("A web engagement module … creates a session at act 344 identified by a session ID…"); 13:10-15 (similar).

167. Ramanujaiaha does not teach, however, that this "Session ID" is the user's telephone number.

168. None of the passages cited by Petitioner and Mr. Lipoff state this.

169. Certain cited passages note that Ramanujaiaha's system receives telephone calls. *See, e.g.*, Ramanujaiaha, 7:4-5 ("The call controller 118 may be configured to process PSTN calls, VoIP calls, and the like.").

170. Other passages note that the system can obtain telephone number information. *See, e.g.*, *id.*, 7:10-17 (referencing "extract[ing] data about the customer interaction").

171. Still other passages reference "concurrent" communication via a "voice channel" and "visual channel." *Id.*, 10:55-59, 12:23-30.

172. The mere fact that Ramanujaiaha's system receives voice calls and collects information about the caller does not mean that it must be using "the phone number of the mobile device" as a "unique identifier."

173. This is particularly the case when the Ramanujaiaha says that another, different identifier (the "Session ID") is used for this purpose.

A. *Ground 2*: Krishnan Does Not Resolve the Issues with Ramanujaiaha

174. In my opinion, the combination of Ramanujaiaha and Krishnan also does not render the ''383 patent's claims obvious.

1. *Ramanujaiaha and Krishnan Fail to Render the '383 Patent's Independent Claims Obvious*

175. According to the Petition "[t]o the extent … Ramanujaiaha does not disclose or render obvious" the claims, the claims purportedly would still be "obvious over the combination of Ramanujaiaha and Krishnan." Petition, 53.

176. For most of the elements of claims 1, 8, and 15, the Petition and Mr. Lipoff simply points back to its discussion of Ramanujaiaha. *See, e.g., id.*, 53-54; *see also* Ex. 1003, ¶¶ 169-198.

177. The Petition and Mr. Lipoff do, however, allege that Krishnan pruprotedly makes it obvius to "establish a WebRTC session" to allow for "real-time communication in emergency situations." Petition, 54-60.

178. The Petition also argues that Krishnan purportedly teaches "'sending video of an emergent event'" "while 'audio communications' are provided via 'voice-only channel[.]'" *Id.* at 63-64 (quoting Krishnan, 11:28-31); *see also id.* at 47 (alleging that "Krishnan … 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."). Mr. Lipoff makes the same statements. Ex. 1003, ¶¶ 192-193.

179. In my opinion, there is no such disclosure in Krishnan.

180. Krishnan does discuss a system that allows an "emergency caller" to "establish a trusted data channel (e.g., a WebRTC call) with a PSAP system" to "provide their perspective about" an emergency event. Krishnan, 1:39-44; *see also id.*, 7:33-35 (similarly referencing use of a "WebRTC ... data channel paradigm").

181. Krishnan also states that a "PSAP can use information incoming from each of the data channels" (*i.e.*, different callers or other sources of information like social media queried by a PSAP) such as "pictures, videos, text information, etc." *Id.*, 1:44-46.

182. According to Krishnan, the purpose of this is allow for "call triage" "to prioritize which of the calls will make it to an agent." *Id.*, 1:25-32; *see also id.*, 1:39-42 (the "secondary channel" is used for "prioritizing calls in a contact center").

183. "The PSAP" is thus able to "determine which caller gets through to the PSAP agent first and which caller waits." *Id.*, 1:44-49; *see also id.*, 1:57-60

("information obtained from the various data channels may then help the PSAP resources to determine which calls are a priority and which calls can be ignored").

184. In other words, in Krishnan data (like video) is communicated before there is audio communication between a caller and an emergency dispatcher.

185. None of the portions of Krishnan cited by the Petition teach a system that allows for simultaneous voice and video communication from the same recipient (like an emergency dispatcher) via different connections.

186. The Petition points to passage in Krishnan's "Summary" section purportedly referencing the use of "multiple data channels to enable the user to maintain a voice call with the emergency user while sending video footage of the emergent event." Petition, 57, 63 (citing Krishnan, 1:41-49, 1:61-63).

187. The Petition then argues that in this passage, emergency calls may be "based solely on data received via the data channel, audio channel, or combination thereof." *Id.*, 63.

188. This is not what Krishnan says. Instead, Krishnan discusses the use of a "secondary data channel" for purposes of "managing multiple calls simultaneously." Krishnan, 1:39-41.

189. In other words, separate "data channels" (*i.e.*, data connections with different callers) are used "to determine which caller gets through to the PSAP agent first and which caller waits." *Id.*, 1:44-49.

190. Krishnan does use the word "combination," but only when noting that this "prioritization of" different incoming emergency "calls can be based" on a "combination" of factors. *Id.*, 1:61-63.

191. There is no statement here that audio and video communications are to be combined during a single call with a single mobile device user (indeed, this would be antithetical to Krishnan's teaching that WebRTC communication is to be occurred before a caller is connected to a dispatcher in an audio call).

192. The Petition cites another passage which purportedly "describe[es] 'sending video of an emergent event' while 'audio communications' are provided via 'voice-only channel[.]'" Petition, 58 (*quoting* Krishnan, 10:56-66).

193. Krishnan does state that "[w]hile audio communications may be provided via the data channel and/or a voice-only channel, other content is exchanged via the data channel…." Krishnan, 10:62-66.

194. The word "while" in this passage does not imply or teach simultaneous communication from one user.

195. Instead, it is plainly implying that Krishnan's system is able to transmit different types of data at different times.

196. Next, yet another cited passage simply states that "multimedia content provided over the data channel" can include "audio, video, datafiles" and other information. *Id.*, 11:28-31 (cited by Petition, 58). But there is no discussion of when

this occurs, or even if it is possible to simultaneously transmit different types of information.

197. Another cited passage discusses "establishment of a data channel" but also do not mention simultaneous audio communication. *Id.*, 7:27-35 (cited by Petition, 57, 58, 63-64). More specifically, this passage explains that if a caller employs a "voice-only communication channel," the "PSAP server 216" will redirect the caller to a "data channel" before connecting the caller with a "resource 112" like a "human agent." *Id.*, 7:7-12, 7:27-43. So, once again, there is no audio communication while video communication is ongoing: video (if this occurs at all) is transmitted first and is then used to determine which caller is able to later engage in audio communication with a human agent first.

198. One more passage does little more than note that "suitable communication device[s]" may "be adapted to support video, audio, text, and/or data communication…" *Id.*, 5:49-53 (cited by Petition, 58). Again, as elsewhere in Krishnan, there is no discussion of the timing of audio and video communications.

199. The Petition also argues that "Figure 3" of Krishnan "illustrates" a "real-time video stream … received through the WebRTC session while audio content of the emergency call is received through the first connection." Petition, 64.

200. The Petition identifies step 302 ("Establish a data channel connection") as a "WebRTC Session" and step 316 ("First communication") as a "voice-only channel." *Id.* (citing Krishnan, Fig. 3).

201. There is no depiction of simultaneous voice and video communications in this figure.

202. Figure 3—reproduced below—discloses a sequential, ordered process. Step 302 represents the initial "data connection … with PSAP server 216." *Id.*, 9:13-16.

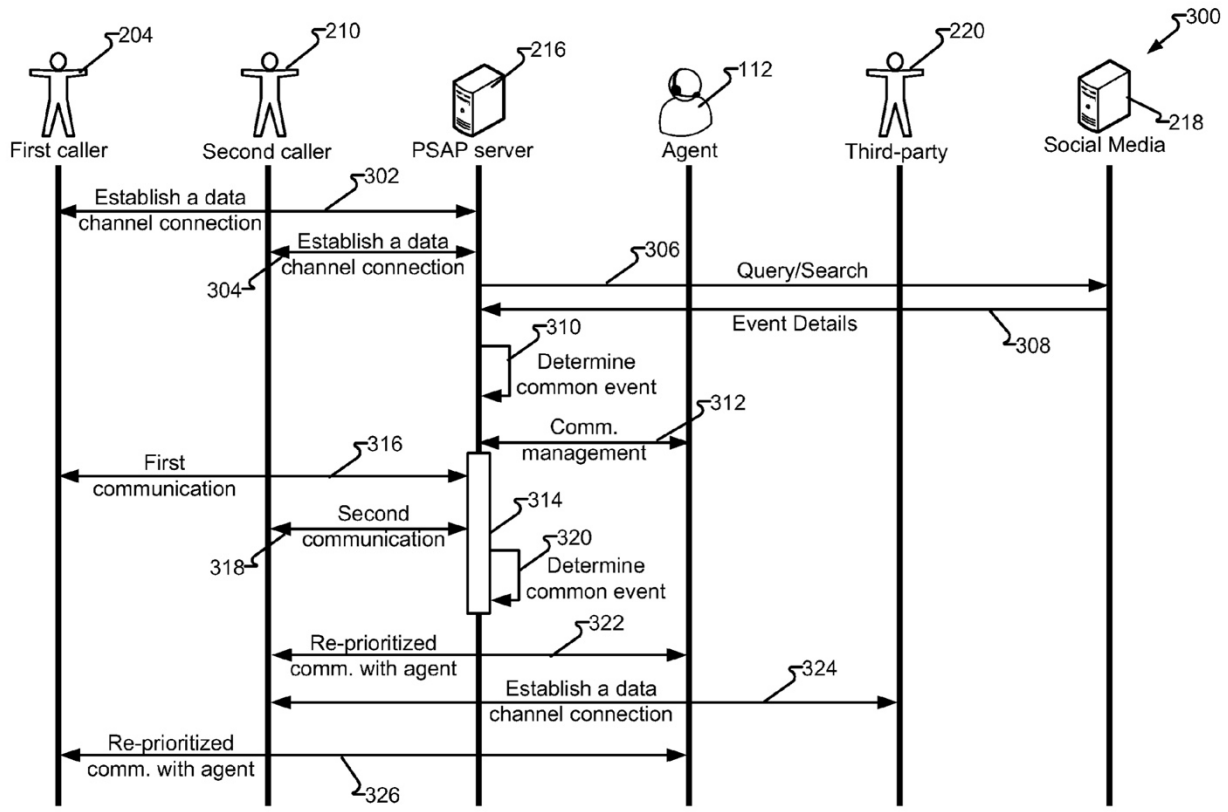


FIG. 3

Id., Fig. 3.

203. Step 316's "First communication" is not a voice call with a recipient Instead, it is the data transmitted from first caller 204 to the PSAP server over the data connection established in preceding steps 302-304.

204. This collected data is then used to determine call connection priority in later steps. *See id.*, 9:66-10:20 ("Step 320" entails "evaluat[ing] information received from one or more first PSAP caller" and "second PSAP caller" at steps 316 and 318 to "reprioritize the queue order" for call connection).

205. There is no "voice-only" communication depicted as preceding step 302 in Figure 3, let alone a "voice-only" communication that continues "while" video is also being transmitted.

206. Nor is there anything about Figure 3 that requires—or even remotely implies—that any of the depicted communication steps are meant to occur simultaneously.

207. In my opinion, nothing about Krishnan renders the claims obvious. Krishnan references communication via WebRTC. Krishnan discusses the collection of "data" (like pictures, videos, and text) from an emergency caller. But the purpose of this is to allow for call prioritization before connecting the caller with an emergency dispatcher.

208. This does not say anything about why it would have been obvious to engage in the claimed ***simultaneous*** audio and real-time video communications.

209. Next, as they did in connection with Ground 1, neither Petitioner nor Mr. Lipoff provide any reason why a POSITA would have implemented the combination of Ramanujaiaha and Krishnan in the way the claims require.

210. No discussion of motivation is provided in connenction with the "real-time video stream is received through the WebRTC session while audio content of the emergency call is received" claim element. *See* Petition, 62-64; *see also* Ex. 1003, ¶¶ 192-193.

211. Both Petitioner and its expert simply discussing why it purportedly would have been obvious to employ "WebRTC" and "video communication" "in emergency situations." Petition, 58-59; Ex. 1003, ¶¶ 184-185.

212. In my opinion, simply using "WebRTC" and "video" does not separately motivate use of this simultaneously with audio communication.

213. Both Petitioner and Mr. Lipoff do not properly account for what either Ramanujaiaha or Krishnan teach.

214. As I have explained, Ramanujaiaha identifies WebRTC as a potential means to ***initiate*** communication with a contact center. "Visual" media like web pages or interactive forms are transmitted later.

215. Krishnan discusses the use of WebRTC to transmit data for purposes of engaging in call triage and prioritization ***before*** conducting an audio emergency call.

2. *The Petition's Discussion of Dependent Claims 7 and 14 is Deficient*

216. In my opinion, the combination of Ramanujaiaha and Krishnan do not render claims 7 and 14 obvious.

217. Claim 7 depends on independent claim 1, while claim 14 depends on independent claim 8. *See* '383 patent, claims 7, 14.

218. Both claims similarly require that "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." *Id.*

219. The "WebRTC session" referenced by these claims is the session of claim 1 (or claim 8) that transmits a "real-time video stream … while audio content of the emergency call is received."

220. Because of this, claims 7 and 14 require that the same "recipient" engaging in an "audio" "emergency call" with a "mobile device user" also simultaneously receive both (1) a "real-time video stream" and (2) either "GPS location data" or "one or more photographs" via the same "WebRTC session" with the "user."

221. The Petition quotes Krishnan's statement that a PSAP may be "present[ed]" with and "use" "pictures, videos, text information" "incoming from each of the data channels." *Id.*, 66 (quoting Krishnan 1:45-49).

222. The Petition also wrongly characterizes Krishnan as "describing 'sending video of an emergent event' while 'audio communications' are provided via 'voice-only channel[.]'" *Id.* (quoting Krishnan, 10:56-66).) As I explained above, there is no such teaching in Krishnan. In Krishnan, data is received before audio communication occurs.

223. The Petition then goes on to include an annotated version of Figure 2 purportedly showing a "screen for display" available to an "agent." Petition, 67 (reproducing Krishnan, Fig. 2).

224. The Petition then goes on to cite passages in Krishan referencing "GPS coordinates," "images," and "position data." *Id.* (quoting Krishnan, 11:20-23, 10:62-66, 7:43-58). Petitioner's expert includes no additional analysis in his declaration. *See* Ex. 1003, ¶¶ 200-201.

225. In my opinion, this does not show that claims 7 and 14 would have been obvious.

226. The mere fact that Krishnan's PSAP is able to employ "pictures" and "position" information like "GPS coordinates" does not explain why this information would be obtained by the recipient via the same WebRTC session used to transmit video (at the same time audio is also being received) as opposed to some other means.

227. Next, not only is Krishnan missing required disclosure, but the passages cited by Petitioner and Mr. Lipoff do not say what Petitioner implies they do.

228. For instance, the Petition cites a passage where Krishnan notes that "multimedia content" such as "GPS coordinates" may be "provided over the data channel." Krishnan, 11:20-23.

229. This passage, however, appears to refer to "content" received from a "third-party 220"—not an emergency caller—that "may be helpful in mitigating the emergent situation." *Id.*, 11:6-31.

230. Another cited passage references "images" and "position data." *Id.*, 10:62-66. But this appears to be part of "messages 412, 416, 420" sent to the device user for purposes of "provid[ing] instructions." *Id.*, 10:62-67.

231. Another cited passage simply notes that there may be a "GPS sensing module within first user device 206" that allows the "PSAP servicer 216" to "determine" "commonality between" caller "position[s]." *Id.*, 7:43-58. The passage does not explain when this information is sent to the PSAP (if at all).

232. The Petition and Mr. Lipoff's declaration are also missing a meaningful discussion of motivation to combine.

233. As I have repeatedly explained, the Petition argues that "Ramanujaiaha expressly contemplates using a WebRTC session to transmit video communications" which would somehow have "motivated" a "POSITA to establish a WebRTC

session." Petition, 27-28. The Petition then goes on to state that this purportedly would have "allowed the user to quickly and accurately convey the nature of their emergency" "through video communication." *Id*, 28. The Petition makes similar statements regarding Krishnan. *Id.*, 58-59.

234. Whether or not "video communication" would have been obvious, this provides no insight into why a POSITA would also have been motivated to use the same WebRTC session to also transmit image or position information.

IX. SIGNIFICANT OBJECTIVE EVIDENCE ESTABLISHES THAT THE CLAIMS ARE NON-OBVIOUS

235. In my opinion, the non-obviousness of the claimed subject matter is evinced by objective evidence: including industry accolades of Carbyne's inventive work.

A. *Carbyne's Sells Products that Embody the Claimed Subject Matter*

236. I have been asked to review two documents summarizing the features and functionality of Carbyne's Universe product (a next-generation 911 system that can be employed with a PSAP's existing call handing infrastructure).

237. These documents include Exs. 2013 (public documentation of Universe product published by Washoe County Sheriff's Office) and Ex. 2014 (public documentation of Universe product published by Miami-Dade County).

238. In my opinion, the documents show that the Unverse product both embodies and is coextensive with at least claim 1 of the '383 patent.

239. They also show that industry accolades relating to the Universe product are the direct result of the unique characteristics first disclosed by the '383 patent (and not other, prior art factors).

240. This is discussed in greater detail below.

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

241. Carbyne's Universe product is a "standalone software application" or "Software-as-a-Service (SaaS)" that "sits on top of any Call Center workstation and / or laptop as a typical software icon until opened…" Ex. 2013 at pp. 10-11, 14.

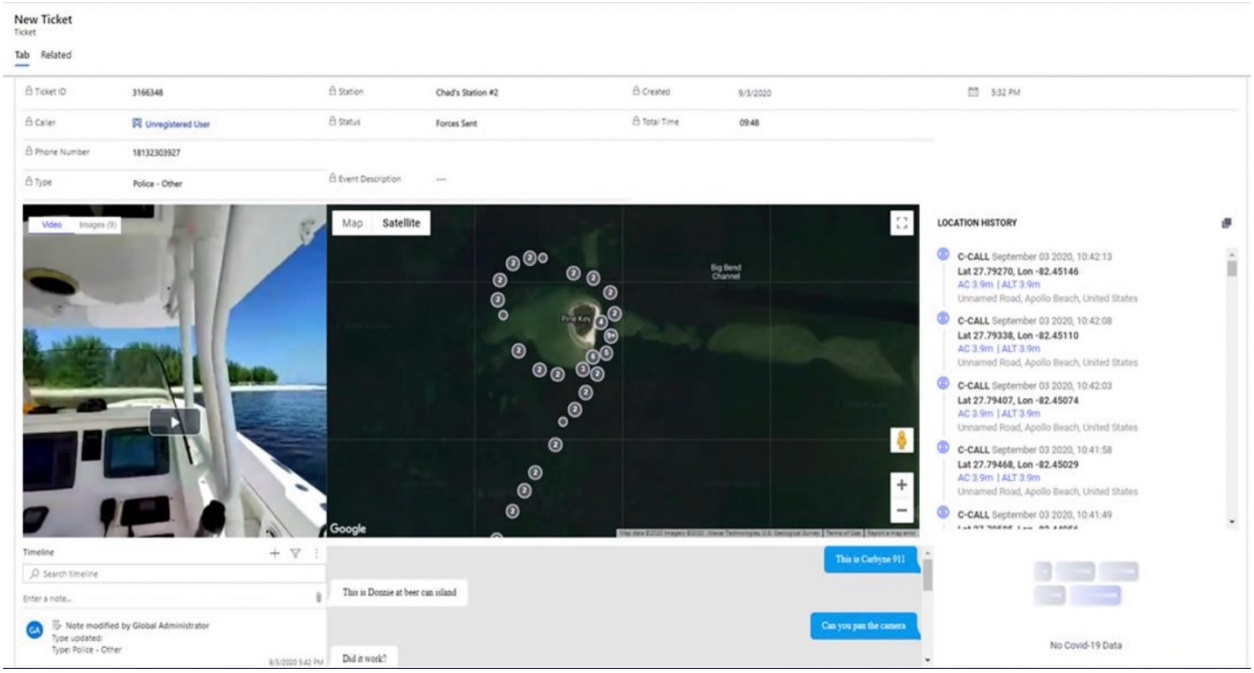
242. The software requires a "CPU" (at least a "Core i5") and a minimum amount of RAM to operate. *Id.* at p. 38.

"obtaining a phone number of a mobile device used by a user making an emergency call, wherein the emergency call is conducted with a recipient through a first connection;"

243. Carbyne's Universe product is able to receive "incoming Wireless calls," including emergency "9-1-1" calls. *Id.*, p. 11.

244. "The incoming caller's number is captured via a DIGI device connected in line with the ANI / ALI spill similar to how CAD and Mapping systems typically receive information." *Id.*, p. 17; *see also id.*, p. 4 (noting that "Caller profile information" including "caller number" is collected.)

245. The below image provides an overview of the call-specific information the Universe product collects, including call number, time, duration, location, video information, and the like:



Id.

"transmitting a uniform resource locator (URL) link to the mobile device through an electronic message, wherein the electronic message is transmitted through a second connection using the phone number, wherein the second connection is different from the first connection,"

246. Carbyne's Universe product also allows an emergency dispatcher to "initiate an SMS text to the calling party for approval to share their location as well as live video stream for on-scene situational awareness." *Id.*, p. 11.

247. The SMS message includes a "unique URL link," along with other information. *Id*, p. 39.

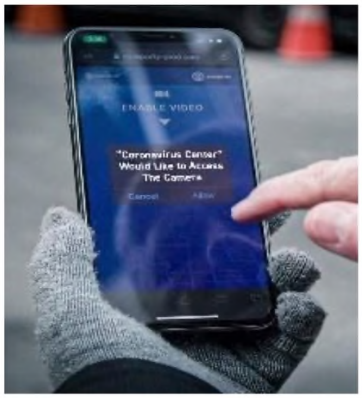
248. Carbyne "rel[ies] on commercial wireless carriers and their infrastructure" to deliver the SMS message to callers. *Id.*

249. Because of this, Carbyne's product allows for communication via two different types of connections: traditional voice calls (via a voice network) and SMS messaging (via a text message network). *See, e.g., id.*, pp. 11, 39.

"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, to establish a WebRTC (Web Real-Time Communication) session to transmit a real-time video stream from the mobile device, and wherein the URL link is associated with the phone number of the mobile device;"

250. Upon receipt of an SMS sent by the Universe product, the caller "will need to open the text message (SMS) notification … and click on the attached link. This will open the mobile device's web browser and will request the relevant permissions / consent to proceed with the Carbyne enhanced call." *Id.*, p. 18

251. An example of this is shown below:



Id., p. 18.

252. After clicking the link "real-time video" is obtained from the "Caller's device." *Id.*, p. 11.

253. According to the documentation I reviewed, this video is transmitted from the caller to the emergency dispatcher "using WebRTC and H.264 / VP8 / VP9 codecs." *Id.*, p. 38.

254. The Carbyne system also employs a "unique URL Link" that is specific to the texted caller. *Id.*, p. 39.

255. Thus, the link is associated with the phone number of the mobile device as required.

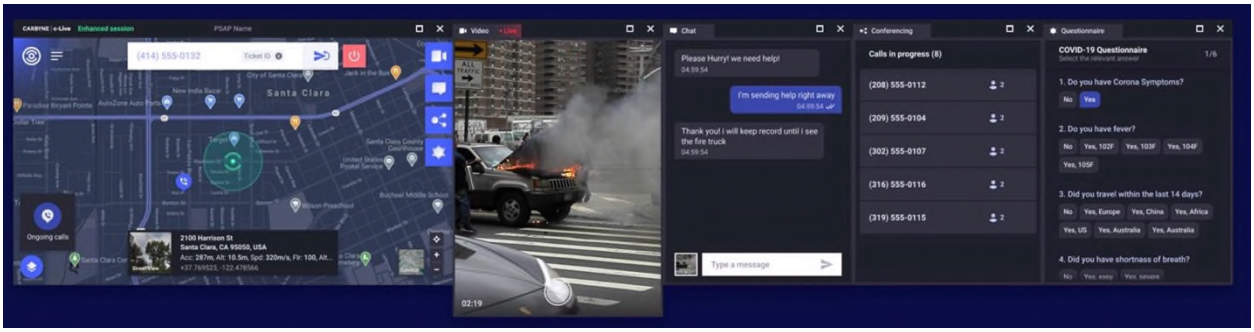
"receiving the real-time video stream from the mobile device through the WebRTC session; and sending the real-time video stream to the recipient for display on a screen of the recipient, wherein the real-time video stream is received through the WebRTC session while audio content of the emergency call is received through the first connection, and wherein the real-time video stream is associated with a unique identifier for the mobile device."

256. Carbyne's Universal product allows a dispatcher to not only "display[] any incoming Wireless calls" but also do so along with "data-rich features including real-time video from the Caller's device." *Id.*, p. 11.

257. Receipt of the "live video stream" provides what is effectively "on-scene situational awareness" and allows the "Telecommunicator / Agency" to have "a higher level of confidence regarding incident response and field resource support & safety." *Id.*; *see also id.*, p. 5 (noting that a "Live Video Stream" is received and displayed on "the Call Taker Desktop").

258. Moreover, the documentation I reviewed explains that "[v]iewing live video … is a powerful tool to address incidents where the Caller's communications are not clear or visual images can help the Telecommunicator gain additional information not available." *Id.* at p. 14.

259. The "video session can be viewed by the Telecommunicator" "[a]t any time" during a 9-1-1 call. *Id.* An example display is shown below:



Id., p. 4; *see also id.*, p. 18 (noting that a "Telecommunicator[]" is able to "open … windows that provide them … Live video from the phone"); *id.* (similarly showing display of a video while calls are in progress).

260. As can be seen, an emergency dispatcher is both managing "Ongoing calls" while at the same time viewing a "Live" "Video." *Id.*

261. Finally, "[historical records of all video, chat sessions and location information captured during a session is recorded and stored in the cloud u sing Carbyne's Event History platform." *Id.*, p. 17.

262. Received "video" is stored along with "Caller number." *Id.*, pp. 20-21; *see also id.*, p. 4 (showing example call history with recorded number and video).

B. ***Carbyne's Universe Product Has Received Industry Accolades, including from Petitioner Itself***

263. Carbyne's Universe product, which embodies the '383 patent, has garnered several industry awards that underscore the non-obvious nature of its claimed features.

264. First, Petitioner CST agreed to market and distribute the product in the United States "for NG9-1-1 to provide dynamic, real-time caller-generated live video, GPS, and chat alongside CentralSquare's Enterprise CAD solution." Ex. 2006.

265. CST described the partnership with Carbyne as a way to "expand the value and capabilities" offered to customers, delivering "greater situational insight for safer and more effective emergency response." *Id.* CST also referred to its collaboration with Carbyne as an example of "continual innovation." *Id.*

266. Second, Carbyne was honored with a 2025 award from Frost & Sullivan—a respected market research firm—for being the "best in practice in the North American emergency call handling industry." Ex. 2012, p. 1.

267. The award highlighted Carbyne's ability to "consolidate communication channels into a single interface, reducing the need for multi-platform navigation." *Id.*, p. 4. This enables users to easily view and resize video windows according to operational needs, a feature provided by Carbyne's Universe product as detailed in the previous section.

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willfully false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1101 of Title 18 of the United States Code.

Date: March 27th, 2026

Location: Taylors, South Carolina

Signature: 

GERALD CHRISTENSEN

ATTACHMENT A

Contact

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www.wirelesswaypoint.com/ (Company)

Top Skills

Artificial Intelligence (AI)
Infrastructure
Automation

Certifications

Top 50 Global Thought Leaders and Influencers on Privacy 2025
Professional Engineer

Publications

Mobile Positioning and Location Management with GPS, Terrestrial Positioning, Non-cellular (RFID and WiFi) Positioning, and Managing Location Information
Data Decision Digest
Wireless Intelligent Networking
Data on SS7
Yes 2 Prepay

Patents

System and method for mediating service invocation from a communication device
System and method for service invocation and response with a communication device
Sender identification system and method

Gerry Christensen

Optimizing B2C Contact + Mitigating Robocalls
Greenville, South Carolina, United States

Summary

Information and Communication Technology (ICT) expert including Solutions, VoIP Policy, Business Strategy, Consumer Contact Regulations, and Telecom Intellectual Property | Gerry is an expert in technologies and solutions to facilitate accurate and consistent communications identity. This includes authentication and validation methods such as STIR/SHAKEN as well as various non-standard techniques. His expertise also includes non-network/telephone number methods such as cryptographically identifiable means of verifying organizational identity. In total, Christensen's knowledge and skills make him uniquely qualified as an industry expert in establishing a trust framework for supporting wanted business communications.

Experience

ECAC - Enterprise Communications Advocacy Coalition

Board Member
October 2025 - Present (6 months)
United States

ENTERPRISE COMMUNICATIONS ADVOCACY COALITION - ECAC is the only dynamic coalition focused on ensuring a favorable business climate that balances successful, compliant communication with consumers and businesses. Our mission is to advocate for a balanced approach, providing safe, secure, and respectful communication channels. Services aimed at advocating and impacting positive change:

-Education Council
-Political Action Committee (PAC) Council
-Federal Regulatory & Legislative Council
-State Regulatory & Legislative Council

ICA AI

2 months

Business Development and Strategy
March 2026 - Present (1 month)

I focus on bridging the gap between complex AI infrastructure and real-world enterprise value. My role is centered on Business Development & Strategy, where I leverage over 35 years of experience scaling technology ventures and navigating intricate intellectual property landscapes to ensure our platform is both trusted and deterministic.

My background provides a unique vantage point for this mission:

Strategic Leadership: As the Founder and CEO of Mind Commerce, I've spent decades at the helm of a global research and consulting firm, deeply embedded in the evolution of AI and next-generation communications.

Technical Innovation: During my tenure as Co-founder and CTO of Zoove, I led the creation of StarStar mobile engagement technology, gaining first-hand experience in building and deploying large-scale communication solutions.

Industry Authority: As an industry analyst and author, I specialize in translating sophisticated AI architectures into compelling narratives that resonate with enterprise clients, media, and the investment community.

At ICA AI, I apply this expertise to help organizations move past probabilistic uncertainty toward a more efficient, deterministic approach to artificial intelligence.

Associate Founder
February 2026 - Present (2 months)

The brilliance of the ICA approach lies in its privacy-preserving architecture and infrastructure-grade scalability. Unlike traditional systems, ICA does not rely on the repetitive costs associated with large language models. Instead, requests are learned once, and that routing intelligence is reused infinitely. This foundational shift in AI communications architecture is backed by pioneering patents that establish an entirely new category in the field: Relationship Intelligence.

46 Labs
Director of Product Management
March 2025 - January 2026 (11 months)
Dallas, Texas, United States

As Director of Product at 46 Labs, I led the development of cutting-edge voice communication solutions, focusing on optimizing efficiency and effectiveness of existing services, as well as driving innovation for new solutions that take into consideration regulatory compliance, fraud prevention, and AI-driven communication tools.

With over three decades of experience in telecommunications, I specialize in navigating complex FCC/FTC regulations and forming strategic partnerships to deliver secure and scalable communication platforms. I am passionate about using technology to improve B2C and B2B engagement and combat robocalls.

My responsibilities covered the entire product lifecycle, from initial concept and market analysis to launch and growth. This included defining the product vision, developing strategies, and ensuring successful execution in collaboration with engineering, marketing, sales, and customer support. I led the design of regulatory-compliant communication tools, ensuring adherence to acts like the Truth in Caller ID Act. I also spearheaded initiatives for AI-powered telecom analytics platforms to boost call performance for enterprise clients.

A key part of my role was developing advanced caller ID authentication and fraud prevention solutions to combat robocalls and spoofing, which helps build trust in communications. I led an interdisciplinary team through the ideation, development, and launch of new products, including leading a Product Review Board and representing it at Executive Steering Committee proceedings.

I also served as a subject matter expert in business identity, telephone number reputation, and call authentication. My expertise informed product strategy, educated internal teams, and contributed to industry best practices. I thrive on collaborating with various teams to deliver solutions that meet the evolving needs of our customers and the telecom industry.

Caller ID Reputation®

Head of Partnerships and Regulatory Compliance

August 2023 - February 2025 (1 year 7 months)

Newport Beach, California, United States

Was responsible for new business development and channel relationships for optimizing B2C engagement. Identified and communicated the Caller ID Reputation value proposition for mutually beneficial, scalable and high

growth opportunities. Developed new business strategies and execute plans in alignment with corporate goals.

Built business cases aligned with solution definitions that leverage platform and service differentiation and optimize user experience. Developed and executed against revenue plans that leverage unique market positioning. Increased product market fit and reach of Caller ID Reputation services. Developed strategy and execute playbook for strategic partnerships and alliances.

Acting in the role of a Chief Compliance Officer (CCO), I was responsible for regulatory compliance as an internal advisor to the company and its customers as well as externally in terms of policy-making, industry solutions and standards.

YouMail Protective Services

Vice President of Business Development and Sales

May 2021 - July 2023 (2 years 3 months)

Irvine, California, United States

Within an early stage business model with limited proof points, I delivered new B2B SaaS and professional service customers that resulted in substantial net ARR for YouMail, a company originally known as only a consumer and SMB app company.

With aspirations to parlay robocall protection capabilities developed initially for its own app users, the company hired me in May 2021 as their VP of BD and Sales for the carrier and enterprise market. In this capacity, I became a key employee within the company's Protective Services business unit, which provides B2B solutions for vendors, communication service providers and enterprise organizations.

In terms of full hunt selling, I identified and acquired new logos and ARR including a leading enterprise call filtering service provider and several VoIP network operators. I was also responsible for closing significant ARR deals with new logos for three major enterprises within the financial services industry. My efforts resulted in substantial new revenue streams for the company in the areas of Know Your Customer (KYC), enterprise reputation defense, regulatory and legal compliance.

My primary role was direct sales to acquire new B2B customers, expand offerings with existing clients, and develop channel relationships. I identified market needs for KYC, brand protection, and regulatory compliance solutions. Working directly with engineering and development, I ensured customer requirements aligned with service realization. I also worked closely with the campaign curation and telephone number reputation scoring team to ensure alignment of service delivery needs with regulatory directives such as compliance with the Federal Trade Commission's TSR.

In terms of market development and demand generation, I was relied upon as a thought leader and technology/solution evangelist for the company, authoring key outbound marketing material and messaging including whitepapers, eBook, webinars, podcasts, etc.

Transaction Network Services
Sr. Product Manager
May 2020 - April 2021 (1 year)
Olympia, Washington, United States

Telecom data and analytics product management for mitigating unwanted robocalls and enabling wanted enterprise calls via telephone number authentication, caller authorization, and branded calling. Was responsible for product management of TNS Call Guardian platform and embedded Analytics Engine (AE) including support of existing services and identification of new data and analytics dependent offerings.

Was responsible for AE efficacy in support of call origination and termination services. This included internal customers, such as TNS branded calling, and external customers, such as carriers, enterprise, traffic aggregators, and call centers. Was responsible for related data strategy, product efficacy and continuous improvements.

Worked with data science team to ensure AE addresses emerging threats and opportunities. This included algorithm model tuning and decisions about data sources and usage. Ensured continuous improvement for terminating network customer protection. Identified and realized new and enhanced feature/functionality for call originators and traffic aggregators. Simultaneously balanced the protection needs of terminating network customers and call completion needs of originating networks.

Identified and collaborated with a diverse set of stakeholders to develop plans that target high-priorities across technology, product, and business needs. Identified opportunities, developed strategies and plans that mapped solutions to target customers and partners.

Wireless Waypoint
Founder and Principal Consultant
September 2010 - April 2020 (9 years 8 months)

Wireless Waypoint provides consulting, professional and expert services for the telecommunications, Internet, and commerce industries. Our primary focus is wireless technology, solutions and applications. Our core competency areas are switching, signaling, and related applications. Our practice areas include strategy and development of emerging business models and ecosystems, network infrastructure, circuit and IP based applications, operational and business support systems.

Mind Commerce
Founder
July 1999 - April 2020 (20 years 10 months)
Greater Seattle Area

Responsibilities for leading Technology Media and Telecom (TMT) research, consulting, and advisory company include overall company leadership and oversight of Analyst/Author Relations, Commissioning, Content Licensing, Editing, Reseller Relations, Sales and Marketing.

Mind Commerce is an Information and Communications Technology (ICT) strategy company that has focused exclusively on ICT/TMT for over twenty years. With deep roots within the ICT industry, we are well-connected and often called upon by clients to improve their understanding of current challenges, identify future opportunities, and provide vision for the next 5 to 10 years.

Our ICT research provides key trends, projections, and in-depth analysis for infrastructure, platforms, devices, applications, services, emerging business models and opportunities. Our ICT research provides insights into the impact of emerging technologies on existing value chains including industry disruption and ecosystem evolution.

Our practice areas include: Artificial Intelligence, Broadband Wireless, Cloud Solutions, Data and Analytics, Immersive Technologies, IoT, Robotics, and Smart Cities.

GLG
Advisory Council Member
2010 - January 2020 (10 years)

Christensen has a strong working knowledge in many ICT areas and considered an expert and thought leader. As a knowledge transfer agent, Mr. Christensen is often called upon to put complex technology concepts into more easily digestible information. In addition to his knowledge and experience in ICT, Gerry has broad intellectual property experience including patent submission and prosecution, portfolio analysis, and strategy development. He assists clients with intellectual property development, assertion, and defense. He provides patent analysis from both a technological and business valuation point-of-view including forensic analysis of claims vs. potential infringing products. Mr. Christensen is also an inventor himself with patents in his name.

North Olympic Land Trust
Board Member
2014 - 2017 (3 years)
Port Angeles, Washington, United States

Contributor to strategic plan and helped Board ensure effective organizational planning, provide sufficient resources, and fulfill its obligations. Co-founded and served on Board-owned LLC to manage acquired property and handle commercial matters.

Zoove, Corp.
Co-founder and CTO
September 2005 - September 2010 (5 years 1 month)
Palo Alto, California

Start-up venture with investment from Highland Capital, Worldview, Cardinal, Panorama, Rogers Wireless and Verizon. Solutions based upon a mobile advertising platform using mobile abbreviated dial codes (** or #) Created a new calling namespace to be used by marketers. Technical and product functionality direction for prototype application for company start-up. Provided overall technical vision and direction for the company. Led product management for wireless advertising technology, products, and services. Defined overall technical functionality, product and features for support of brand and advertising agency clients.

Remained with company in consulting capacity until acquisition by mBlox in 2014.

VeriSign, Inc.
Director of Wireless Business Development
July 2001 - September 2005 (4 years 3 months)
Mountain View, California

Developed strategies and plans for new network and application business with emphasis in the areas of wireless data, mobile messaging and content for organic growth as well as partnerships, mergers and acquisitions. Member of team that established strategy that resulted in acquiring three companies to fulfill company objectives in mobile messaging and content: Jamba!, Unimobile, and LightSurf.

SME on due diligence team for Jamba! and Unimobile acquisitions. Identified new product and business opportunities and guided VeriSign industry influence through leadership in the Mobile Marketing Association (MMA). Responsibilities included development through first stages of product gate process as well as resource allocation and proper hand off to product management for life cycle management.

SignalSoft
Director of Product Management
October 1999 - June 2001 (1 year 9 months)
Boulder, Colorado

Built and led group of product managers responsible for all corporate mobile location service software products on a global basis. Set direction and established strategic plans for mobile location service application product line. Directed requirements gathering, feature planning, and release management. Communicated strategy/plans in support of marketing and sales efforts. Managed cross-product functions and strategic initiatives.

ILLUMINET
Senior Product Manager, Wireless Services
August 1997 - October 1999 (2 years 3 months)
Overland Park, Kansas

Responsible for new Wireless Intelligent Network (WIN) service business development and life cycle product management of existing wireless network services. Developed WIN service strategy and plans for execution. Directed

WIN implementation efforts and ongoing management and optimization of services and vendors/partner relationships. SME on team that engaged National Telemanagement Corporation (NTC) for partnership deals for WIN-based prepay wireless, which ultimately led to the acquisition of NTC.

AT&T

9 years 3 months

Manager of Network Strategic Planning and Implementation

February 1995 - July 1997 (2 years 6 months)

Atlanta, Georgia

Developed RFPs, managed selection process for vendors, and developed plans for company's own SS7 network and first stand-alone HLR. Led efforts of other staff members and market units to develop network strategies. Developed network evolution plans to support business strategy and in consideration of trends in technology, industry standards, and regulatory environment.

Identified, evaluated, and procured network elements required to implement network plans. Performed overall coordination for plan execution. Managed vendors for network optimization. Major projects included support for Local Number Portability (LNP) as well as Phase I and II of Enhanced 9-1-1 vendor selection and planning.

Signaling and Intelligent Network Planner/Engineer

November 1992 - February 1995 (2 years 4 months)

Birmingham, Alabama

Was responsible for planning and engineering of 1/3 of BellSouth Telecommunications SS7 network. Developed plans for network growth and evolution of signaling and intelligent network elements for nine state region. Interfaced with inter-exchange carriers, independent telephone companies, wireless providers, and internal business units to manage interconnection and determine future network requirements. Forecasted link and node capacity requirements based on interconnection expectations and feature deployment strategies. Engineered and monitored network elements to maintain capacity. Developed and monitored capital and expense budgets.

Manager

February 1992 - November 1992 (10 months)

Jacksonville, Florida

Managed order management group of nine people responsible for processing requests for switching services, new services, and enhancements.

Quality Consultant/Trainer
September 1991 - June 1992 (10 months)
Jacksonville, Florida

Provided training and consultation to internal customers regarding quality improvement and best practices. Focused on total quality management principles and use of process and efficiency improvement techniques from industrial engineering. Provided numerous structured training engagements to management and craft employees in classroom setting.

Equipment Engineer
August 1989 - February 1992 (2 years 7 months)
Jacksonville, Florida

Coordinated installation and removal of central office equipment. Estimated project material, labor, and engineering costs. Monitored vendor billing, material requirements, and internal charges for accuracy. Provided expense and budget information to upper management. Supervised seven Network Analyst Specialists whose responsibilities included payment of central office equipment invoices and maintenance of property records and budgets.

Network Design Engineer
May 1988 - August 1989 (1 year 4 months)
Jacksonville, Florida

Designed cost effective central office switching configurations based on estimated line and trunk growth and demand for new services. Analyzed communications traffic patterns and forecasted future network usage. Monitored switch performance to meet customer#s service objectives.

Gainesville Regional Utilities
Industrial Engineering Intern
April 1987 - April 1988 (1 year 1 month)
Gainesville, Florida, United States

US Navy
Industrial Engineering Intern
May 1986 - August 1986 (4 months)
Jacksonville, Florida, United States

Jax Naval Air Station Facilities Engineering Department

US Navy
Industrial Engineering Intern
September 1985 - December 1985 (4 months)
Jacksonville, Florida, United States

Jax Naval Air Station Facilities Engineering Department

Education

University of Florida

BSIE, Industrial Engineering · (August 1983 - April 1988)

Auburn University

MBA, Business Administration · (January 1993 - July 1997)