

Petition for *Inter Partes* Review of U.S. Patent No. 8,994,830

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA SOLUTIONS, INC.,

Petitioner,

v.

STA GROUP LLC,

Patent Owner.

IPR2023-01295

U.S. Patent No.: 8,994,830 B2

**DECLARATION OF NATHANIEL POLISH, PH.D. IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW OF CLAIMS 1-5, 7-19, and
21-24 OF U.S. PATENT NO. 8,994,830 B2**

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PETITIONER’S EXHIBIT LIST

Ex[No.] ¹	Description of Documents
1001	U.S. Patent No. 8,994,830 (“’830 Patent”)
1002	Declaration of Nathaniel Polish, Ph. D. in Support of Petition for <i>Inter Partes</i> Review of the ’830 Patent, with CV attached as Appendix A (“Polish Decl.”)
1003	Prosecution File History of the ’830 Patent (“’830 Patent File History”)
1004	U.S. Patent App. No. 2006/0281471 (published Dec. 14, 2006) (“Shaffer”)
1005	U.S. Patent App. No. 2007/0036100 (published Feb. 15, 2007) (“Shaffer ’100”)
1006	U.S. Patent App. No. 2007/0173273 (published Jul. 26, 2007) (“Gogic”)
1007	U.S. Patent No. 8,090,388 (priority date Mar. 20, 2007, issued Jan. 3, 2012) (“Opitz”)
1008	<i>First Line of Defense Glassbreak Detectors by IntelliSense</i> , Honeywell (2006)

¹ Citations to issued patents (Exhibits 1001, 1007, 1011, 1012, 1016, 1025, 1026) are made by column and line number. Citations to patent application publications (Exhibits 1004, 1005, 1006, 1013, 1014, 1020, 1021, 1024, 1028, 1029, 1030) and Exhibits 1002 are made by paragraph number. Citations to Exhibits 1010, 1015, 1017, 1018, 1019, 1023, and 1032 are to the original page numbering in the exhibits. Citations to Exhibits 1003, 1009, and 1022 are to the page number added by the exhibit label. Citation to Exhibit 1027 is to the original page numbers and line numbers.

Ex[No.] ¹	Description of Documents
1009	Docket Control Order, <i>STA Group LLC v. Motorola Solutions, Inc.</i> , No. 2:22-CV-0381-JRG-RSP, Dkt. 35 (E.D. Tex. Feb. 3, 2023)
1010	Plaintiff’s First Amended Disclosure of Asserted Claims and Infringement Contentions and Document Production Accompanying Disclosure Pursuant to P.R. 3-1 & 3-2, No. 2:22-CV-0381-JRG-RSP (E.D. Tex. June 15, 2023)
1011	U.S. Patent No. 7,113,090 (issued Sept. 26, 2006) (“Saylor”)
1012	U.S. Patent No. 5,152,011 (issued Sept. 29, 1992) (“Schwob”)
1013	U.S. Patent App. No. 2007/0270172 (published Nov. 22, 2007) (“Kalley”)
1014	U.S. Patent App. No. 2008/0108339 (published May 8, 2008) (“Shaffer ’339”)
1015	<i>Voice over IP in LMR Environments, Technical Note 2006-5</i> , Office of Grants and Training Interoperable Communications Technical Assistance Program (ICTAP) (Nov. 2, 2005).
1016	U.S. Patent No. 7,864,716 (priority date Feb. 15, 2007, issued Jan. 4, 2011) (“Manroa”)
1017	<i>Understanding Wireless Communications in Public Safety, A Guidebook to Technology, Issues, Planning, and Management</i> by Imel et. Al (published Jan. 2003)
1018	<i>How Wireless IP Communications Supports Fast Emergency Response</i> , Cisco (published 2007)
1019	<i>Washington Statewide Communications Interoperability Plan</i> , Washington State Interoperability Executive Committee (SIEC) (published Apr. 4, 2008)
1020	U.S. Patent App. No. 2007/0076094 (published Apr. 5, 2007) (“Dickerson”)
1021	U.S. Patent App. No. 2007/0060144 (published Mar. 15, 2007) (“Mills”)
1022	<i>Spectrum Management Regulations and Procedures Manual</i> , Federal Aviation Administration (published Nov. 17, 2005)
1023	<i>In re FCC 04-168, REPORT AND ORDER, FIFTH REPORT AND ORDER, FOURTH MEMORANDUM OPINION AND ORDER, AND ORDER</i> , Federal Communications Commission (adopted July 8, 2004)

Ex[No.]¹	Description of Documents
1024	U.S. Patent App. No. 2004/0192313 (published Sept. 30, 2004) (“Otting”)
1025	U.S. Patent No. 7,783,316 (priority date Sept. 9, 2004, issued Aug. 24, 2010) (“Mitchell”)
1026	U.S. Patent No. 7,260,394 (issued Aug. 21, 2007) (“Welnick”)
1027	U.K. Patent App. No. GB2384393 (published July 23, 2007) (“Valentine”)
1028	U.S. Patent App. No. 2008/0115174 (published May 15, 2008) (“Nicholl”)
1029	U.S. Patent App. No. 2005/0190263 (published Sept. 1, 2005) (“Monroe”)
1030	U.S. Patent App. No. 2004/0023635 (published Feb. 5, 2004) (“Impson”)
1031	Plaintiff’s and Defendant’s Local P.R. 4-2 Disclosure of Preliminary Proposed Constructions of Claim Terms and Preliminary Identification of Extrinsic Evidence
1032	Katherine K. Vidal, <i>Memorandum: Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation</i> (June 21, 2022)

I, Nathaniel Polish, declare as follows:

I. INTRODUCTION

1. I have been retained on behalf of Motorola Solutions, Inc. (“MSI” or “Petitioner”) as an independent consultant in connection with the above-captioned *inter partes* review (“IPR”) of Claims 1-5, 7-19, and 21-24 of U.S. Patent No. 8,994,830 (the “’830 patent” or “Challenged Patent”), entitled “Access to video streams on mobile communication devices,” by named inventors Shmuel Shaffer, and Zeeshan Rahman Khan. I understand that the ’830 patent is assigned to STA Group LLC (the “Patent Owner”). I have been asked to provide technical review, analysis, insights, and opinions regarding the ’830 patent and the prior art references that form the basis for the grounds of invalidity set forth in the Petition for *Inter Partes* Review of the ’830 patent (the “Petition”). I have been asked to provide a declaration regarding my opinions on the validity of Claims 1-5, 7-19, and 21-24 of the ’830 patent.

2. This declaration sets forth the opinions I have formed and provides the bases and reasons for those opinions. This declaration is based on information currently available to me. All of my opinions stated in this declaration are based on my own personal knowledge and professional judgment, and I declare that I have personal knowledge of the facts set forth in this declaration and, if called to testify as a witness, could and would do so competently. In forming my opinions, I have relied on my education, experience, and knowledge. A copy of my current

curriculum vitae, which details my education and professional and academic experience, is included as Appendix A to this declaration.

3. I am being compensated at my usual consulting rate of \$700 per hour for my work on this matter. I am also being reimbursed for any incurred expenses. My compensation is in no way dependent upon my opinions or testimony or the outcome of this proceeding.

II. SUMMARY OF OPINIONS

4. For the reasons set forth in this declaration, it is my opinion that:
- a. Claims 1-5, 7-19, 21-24 would have been obvious over Shaffer in view of Saylor; and
 - b. Claims 1-5, 8-19, and 22-24 would have been obvious over Gogic in view of Opitz.

III. BACKGROUND AND QUALIFICATIONS

5. In formulating my opinions, I have relied on my knowledge, training, and experience, which I will summarize briefly. Further detail can be found in my Curriculum Vitae, which is attached as Appendix A to this declaration.

6. I am an independent consultant. I have a Ph.D. in Computer Science from Columbia University. I hold the following four degrees from Columbia:

- Ph.D. in Computer Science, May 1993, Thesis: Mixed Distance Measures for the Optimization of Concatenative Vocabularies in Speech Synthesis;
- M.Phil. in Computer Science, December 1989;

- M.S. in Computer Science, December 1987; and
- B.A. in Physics, Columbia College, May 1984.

7. For over thirty years, I have run a computer technology development firm that I co-founded, called Daedalus Technology Group. My primary business activity is the development of computer-related products. This activity involves understanding the business objectives of customers, designing products to suit their needs, and supervising the building, testing, and deployment of these products. I develop hardware and software as well as supervise others who do so.

8. In 2019 I founded a company called SuperAlert. I am the CEO of that company. I am the main product developer for SuperAlert. SuperAlert is in the business of building and deploying wireless sensors for monitoring systems in large residential buildings. These systems include heating systems, pumps, and hot water heaters. SuperAlert products utilize low power long range radio signals. The technologies used in these products are similar to those of the patent at issue in this proceeding.

9. Also, from time to time I found other companies in order to pursue particular product opportunities. I develop and ultimately sell these companies. Most of my business activity, however, is as a consulting product developer. From time to time, I have also served as an expert witness on computer and software related cases. I am a named inventor on eight United States patents and am a member of several professional societies, including the IEEE and ACM.

10. I have extensive experience in several areas relevant to this case. I have worked for many years on products that utilize digital wireless data transmission. In the early 2000s, my firm under my supervision developed a premises monitoring and security product for a company named Radia. This product monitored industrial facilities and under control of rules connected to appropriate surveillance videos and collected and distributed the information from the facilities.

11. I also have experience using and integrating UHF and VHF radios in a number of applications. These applications have been both in the context of the aviation and marine sectors as well as more traditional terrestrial applications.

12. Through these and other experiences, I am very familiar with the technologies at issue in this matter. Based on my relevant experience, I am familiar with how a POSITA would have understood and used the terminology found in the Challenged Patent at the time of its filing. I also understand and know the capabilities of a POSITA as of the priority date of the Challenged Patent, having worked directly with many such persons in the relevant timeframe.

IV. MATERIALS CONSIDERED

13. The analysis that I provide in this declaration is based on my education, research, experience, and professional judgment, as well as the documents I have

considered, including the '830 patent (Exhibit 1001) and its prosecution history (Exhibit 1003). I have reviewed and am familiar with the specification of the '830 patent. I have reviewed and am familiar with the file history of the '830 patent.

14. In forming the opinions expressed in this declaration, I have considered the materials listed in the table below (which includes the materials identified above) as well as any other document cited in this declaration.

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1026	U.S. Patent No. 7,260,394 (issued Aug. 21, 2007) (“Welnick”)
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1028	U.S. Patent App. No. 2008/0115174 (published May 15, 2008) (“Nicholl”)
1029	U.S. Patent App. No. 2005/0190263 (published Sept. 1, 2005) (“Monroe”)
1030	U.S. Patent App. No. 2004/0023635 (published Feb. 5, 2004) (“Impson”)

Ex[No.]	Description of Documents
1031	Plaintiff's and Defendant's Local P.R. 4-2 Disclosure of Preliminary Proposed Constructions of Claim Terms and Preliminary Identification of Extrinsic Evidence

V. LEGAL STANDARDS

15. Although I am not an attorney, I have a general understanding of the applicable legal standards pertaining to the patentability issues presented in this proceeding. My understanding of legal principles as described in this section is based on communication of those principles to me by Petitioner's legal counsel. The analysis in this declaration is in accordance with the legal principles outlined below.

16. I understand that, in this IPR, Petitioner has the burden of proving that each challenged claim is unpatentable by a preponderance of the evidence.

A. Claim Construction

17. I understand that the first step in determining whether a patent claim would have been anticipated or obvious is to ascertain how a person of ordinary skill in the art ("POSITA") would have understood the claim terms.

18. I understand that a patent may include two types of claims: independent claims and dependent claims. An independent claim stands alone and includes only the limitations it recites. A dependent claim can depend from an independent claim, or it can further depend from another dependent claim. I understand that a dependent claim includes all the limitations that it recites, in addition to all the limitations recited in the claim(s) from which it depends.

19. It is my understanding that in proceedings before the USPTO, the claims of a patent are to be construed under what is referred to as the “*Phillips* standard.” I understand that this means that claim terms of a patent are given the ordinary and customary meaning the terms would have to a POSITA, in view of the description provided in the patent itself and the patent’s file history.

20. I understand that to determine how a POSITA would understand a claim term, one should look to those sources available that show what a POSITA would have understood the disputed claim language to mean. I understand that, in construing a claim term, one looks primarily to the intrinsic patent evidence, including the words of the claims themselves, the remainder of the patent, and the patent’s prosecution history. I understand that extrinsic evidence, which is evidence external to the patent and the prosecution history, may also be useful in interpreting patent claims.

21. I understand that words or terms should be given their ordinary and accepted meaning unless it appears that the inventors were using them to mean something else. In making this determination, the claims, the remainder of the patent, and the prosecution history are of paramount importance. Additionally, the patent and its prosecution history must be consulted to confirm whether the patentee has acted as its own lexicographer (i.e., provided its own special meaning to any disputed terms), or intentionally disclaimed, disavowed, or surrendered any claim scope.

22. I further understand that 35 U.S.C. § 112 ¶ 6 created an exception to the general rule of claim construction. I understand that patent claims may be drafted in means-plus-function format, in which a claim limitation is expressed as a means or step for performing a specified function, without a recital of structure. I understand that, under § 112 ¶ 6, a limitation will be presumed to be a “means-plus-function” limitation if (a) the claim limitation uses the word “means”; (b) the word “means” is modified by functional language; and (c) the word “means” is not modified by sufficient structure for achieving the specified function.

23. I understand that a means-plus-function limitation should be interpreted to cover only the recited function and the corresponding structure for performing the function as described in the specification, as well as equivalent structures. I understand that a structure is deemed equivalent to the corresponding structure in the specification only if the difference between them is insubstantial. For example, two structures may be deemed equivalent if they perform the same function in substantially the same way to achieve substantially the same result. I further understand that a structural equivalent must have been available at the time of issuance of the claim.

B. Obviousness

24. I understand that a patent claim is unpatentable if, at the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of the prior art to yield the patent claim. I also understand that it is not

required (although it is acceptable) that each element of a patent claim be found in a single reference in order to find a patent claim obvious. This means that even if all of the requirements of the claim cannot be found in a single prior art reference that would anticipate the claim, the claim can still be invalid. For a patent claim to be found obvious, all the elements of the patent claim may be found in a combination of references at which a POSITA would have been reasonably expected to arrive.

25. I understand that the following factors should be considered in analyzing obviousness: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims; (3) the level of ordinary skill in the pertinent art; and (4) other objective considerations identified below. I understand that an invention is obvious when the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a POSITA at the time the invention was made. I also understand that a POSITA is not an automaton but is a person having ordinary creativity.

26. For example, I understand that two or more prior art references (*e.g.*, prior art articles, patents, or publications) that each disclose fewer than all elements of a patent claim may nevertheless be combined to render a patent claim obvious if the combination of the prior art collectively discloses all elements of the claim and a POSITA at the time would have been motivated to combine the prior art in such a way. I understand that this motivation to combine need not be explicit in any of the

prior art but may be inferred from the knowledge of a POSITA at the time the patent was filed.

27. I further understand that one or more prior art references, articles, patents, or publications that disclose fewer than all of the elements of a patent claim may render a patent claim obvious if including the missing element would have been obvious to a POSITA (*e.g.*, the missing element represents only an insubstantial difference over the prior art or a reconfiguration of a known system). For example, I understand that a claim may be deemed invalid for obviousness in light of a single prior art reference, without the need to combine references, if the elements of the claim that are not found in the reference can be supplied by the knowledge or common sense of a POSITA.

28. I understand that a POSITA is assumed to have knowledge of all prior art references. I also understand that when considering the obviousness of a patent claim, one may consider whether a teaching, suggestion, or motivation to combine the references exists so as to avoid impermissibly applying hindsight when considering the prior art. I understand this test should not be rigidly applied, but that the test can be important to avoiding such hindsight.

29. I understand that even if a *prima facie* case of obviousness is established, the final determination of obviousness must also consider objective indicia of nonobviousness, which I understand are also referred to as “secondary considerations,” if presented. I understand that these objective indicia can be

important evidence as to whether a patent is obvious or nonobvious. These secondary considerations of non-obviousness may include, for example:

- a long felt but unmet need in the prior art that was satisfied by the claimed invention;
- commercial success of processes claimed by the patent;
- unexpected results achieved by the invention;
- praise of the invention by others skilled in the art;
- the taking of licenses under the patent by others; and
- deliberate copying of the invention.

30. I further understand that secondary considerations evidence is only relevant if the offering party establishes a connection, or nexus, between the evidence and the claimed invention.

31. It is also my understanding that there are additional considerations that may be used as further guidance as to when the above factors will result in a finding that a claim is obvious, including the following:

- the claimed subject matter is simply a combination of prior art elements according to known methods to yield predictable results;
- the claimed subject matter is a simple substitution of one known element for another to obtain predictable results;

- the claimed subject matter uses known techniques to improve similar devices or methods in the same way;
- the claimed subject matter applies a known technique to a known device or method that is ready for improvement to yield predictable results;
- the claimed subject matter would have been “obvious to try” choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- there is known work in one field of endeavor that may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to a POSITA;
- there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent’s claims; and
- there is some teaching, suggestion, or motivation in the prior art that would have led a POSITA to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed subject matter.

32. I also understand that “obviousness” is a legal conclusion based on the underlying factual issues of the scope and content of the prior art, the differences between the claimed invention and the prior art, the level of ordinary skill in the prior art, and any objective indicia of non-obviousness. For that reason, my testimony addresses the underlying facts and factual analysis that would support a

legal conclusion of obviousness, and when I use the term obvious, I am referring to the perspective of a POSITA at the time of invention.

VI. LEVEL OF ORDINARY SKILL IN THE ART

33. I understand that my assessment of the claims of the '830 patent and the teachings of the prior art and my analysis and opinions herein must be undertaken from the perspective of what would have been known or understood by a person having ordinary skill in the art, reading the '830 patent on its priority date and in light of the specification and file history of the '830 patent. I refer to such a person as a "POSITA."

34. I further understand that in determining the level of ordinary skill in the art, I am to consider factors including:

- (a) the type of problems encountered in the art or field of invention,
- (b) prior art solutions to those problems,
- (c) the rapidity with which innovations are made,
- (d) sophistication of the technology, and
- (e) the educational level of active workers in the field.

35. I understand that a person of ordinary skill in the art is not a specific real individual, but rather a hypothetical individual having the qualities reflected by the factors above. This hypothetical person has knowledge of all prior art in the relevant field and takes from each reference what it would teach to a person having the skills of a POSITA.

36. I understand that a POSITA is a person of ordinary creativity, but not an automaton, and that a POSITA can often fit multiple patents or prior art references together like pieces of a puzzle as a result of this ordinary creativity. I also understand that I may consider the inferences and creative steps that a POSITA would employ. In addition, I understand that a POSITA would necessarily have been capable of understanding the scientific and engineering principles applicable to the pertinent art.

VII. OVERVIEW OF THE CHALLENGED PATENT

A. Priority Date

37. The '830 patent was filed as Application No. 12/188,982 on August 8, 2008, the patent's alleged priority date. For the purposes of this proceeding, I have assumed that the '830 patent is entitled to a priority date of August 8, 2008 and have applied this date in considering the prior art and the viewpoint of a POSITA.

B. The Subject Matter of the Challenged Patent

38. The '830 patent concerns "providing access to video streams associated with communication channels in a communication network." Ex[1001], 1:8-9.

39. The disclosed communication system (below) includes "communication channels" connecting devices used by "public safety and first responders" (*e.g.*, radios, phones, and cameras) in a "virtual talk group" ("VTG"). *Id.*, 2:31-44, 3:37-44, 6:18-21, 7:39-42, FIGs. 1a-1b. The '830 patent does not claim to have invented a VTG or a communication channel. To the contrary, the patent

describes an exemplary VTG as simply a combination of like endpoints (*e.g.*, an “emergency response team”) grouped together for communications. *Id.*, 5:6-11, 5:33-37. Similarly, a communication channel is described as any (1) audio channel in a “radio network” (152); *or* (2) an IP channel over a computer network (114) that uses an interoperability service (150) to connect different types of devices and networks (*e.g.*, a radio in a “radio network” 152 and a phone in a cellular network 104). *Ex*[1001], 3:5-10, 3:39-4:9, Figs.1a-1b; *see also id.* 2:40-43, 4:22-28.

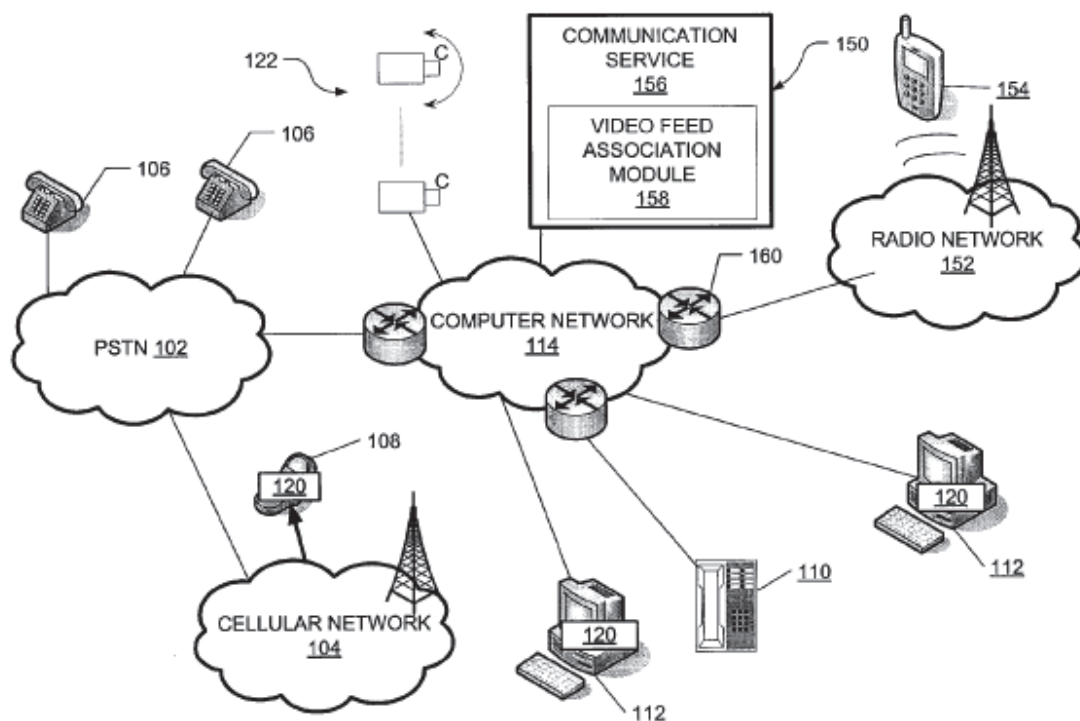


FIG. 1B

Ex[1001], FIG. 1B.

40. The '830 patent purports to improve on the prior art by providing a mobile user access to video feeds based on a “user policy” that filters the video feeds to “only those video feeds that are of particular interest to a user.” *Id.*, 2:11-13, 3:3-15, 5:60-64, 7:47-49. “[B]y controlling the video feeds” in this way, the system may “reduc[e] the information overload to the end user.” *Id.*, 7:47-59. For example, when emergency responders in a “fire-truck VTG” “approach a location from which specific video feed [*sic*] is originating,” a “policy” can analyze the VTG’s location and may “automatically associate” only relevant video feeds in that area with the communication channel hosting the VTG. *Id.*, 6:3-13.

41. The '830 patent also discloses an exemplary mobile device user interface for selecting a particular VTG in which to participate. For example, as show in FIG. 9, a “user may select a specific VTG” to participate in “by selecting one of the channels 902.1-902.s” associated with that VTG. *Id.*, 10:13-14. FIG. 9 also shows that a user can separately select one or more radio frequencies in one or more zones. *Id.*, 10:7-12. As described in the specification, each frequency is associated with the selected communication channel via a drop-down menu. *Id.*, 10:7-12.

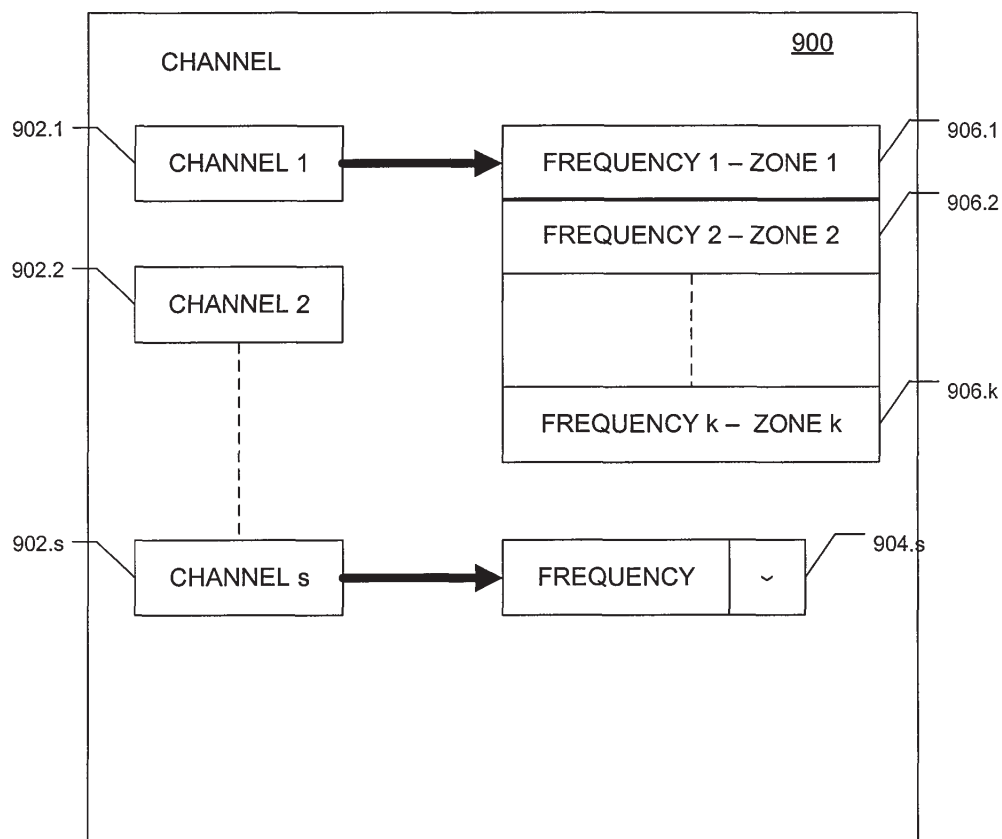


FIG. 9

Ex[1001], FIG. 9.

C. The Challenged Claims of the '830 Patent

42. Claims 1-5, 7-19, and 21-24 of the '830 patent ("Challenged Claims") are set forth below. Some of the claim elements have been further sub-divided for ease of reference.

Claim 1

1[pre]	A method comprising:
1[a]	monitoring a selection of a communication channel by a user of a mobile communication device;
1[b]	providing a plurality of radio frequencies on a display of the mobile communication device, each radio frequency being associated with a

	geographical zone
1[c]	from which a plurality of video feeds associated with the geographic zone are sourced;
1[d]	monitoring a selection of a radio frequency of the plurality of radio frequencies by the user;
1[e]	identifying at least one video feed by selecting the at least one video feed from the plurality of video feeds associated with the geographic zone, wherein the at least one video feed is associated with the selected communication channel based on a user policy that identifies one or more video feeds that are relevant to the user when the user accesses the selected communication channel,
1[f]	the one or more video feeds being independent of the selected communication channel; and
1[g]	providing access to the identified at least one video feed to the mobile communication device based on the user policy.

Claim 2

2	The method of claim 1, wherein providing access comprises associating the identified at least one video feed with the mobile communication device in a database that is used to manage access to independent video feeds in a network based on audio communication channels that are selected by communication devices in the network.
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Claim 3

3[a]	The method of claim 1, further comprising: accessing a database to identify a plurality of members of an emergency response team that includes the user of the mobile communication device; and
3[b]	presenting a plurality of available video feeds on the display of the mobile communication device, the plurality of available video feeds including video streams associated with the plurality of members of the emergency response team.

Claim 4

4	The method of claim 3, wherein the available video feeds are sourced from a group of surveillance cameras.
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Claim 5

5	The method of claim 1, wherein: the communication channel is a Push-To-Talk (PTT) channel in a PTT communication network and the mobile communication device is a PTT radio.
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Claim 7

7[a]	The method of claim 1, further comprising: monitoring an audio signal generated in proximity to a video camera providing a first video feed included in the identified at least one video feed;
7[b]	processing the audio signal to identify an audio event; and
7[c]	based on the identified audio event, providing access to the first video feed to a plurality of mobile communication devices in a group of mobile communication devices, the group of mobile communication devices including the mobile communication device of the user corresponding to the selection of the communication channel.

Claim 8

8	The method of claim 1, wherein the communication channel is associated with a Virtual Talk Group (VTG).
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Claim 9

9	The method of claim 1, wherein providing access to the video feeds depends on a video association policy.
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Claim 10

10	The method of claim 9, wherein the video association policy includes a role of the user defined in a policy database.
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Claim 11

11[a]	The method of claim 1, further comprising: identifying a geographical location of the user's mobile communication device using a Global Positioning System;
11[b]	identifying that the at least one video feed is associated with the

	geographical location; associating the at least one video feed with other mobile communication devices set to the same channel as the user's mobile communication device; and automatically rendering access to the at least one video feed to the other mobile communication devices.
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Claim 12

12	The method of claim 1, wherein the selected communication channel is a selected audio communication channel that is selected from a plurality of audio communication channels, the at least one video feed being associated with the selected audio communication channel, and the user policy identifying the one or more video feeds that are relevant to the user when the user accesses the selected audio communication channel.
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Claim 13

13	The method of claim 1, wherein the user policy associates the at least one video feed with the selected communication channel based on the geographic zone from which the at least one video feed is sourced and a device group that includes the user's communication device.
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Claim 14

14	The method of claim 1, wherein the user policy associates the at least one video feed with the selected communication channel by comparing a first geographic zone from which the at least one video feed is sourced with a second geographic zone corresponding to a location of the user's communication device.
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Claim 15

15[pre]	An apparatus, comprising:
15[a]	at least one processor; and
15[b]	a memory in communication with the at least one processor, the memory being configured to store a video stream association module executable by the at least one processor; the video stream association module being executed by the at least one processor to cause operations to be performed, the operations comprising:
15[c]	monitoring a selection of a communication channel by a user of a mobile

	communication device;
15[d]	providing a plurality of radio frequencies on a display of the mobile communication device, each radio frequency being associated with a geographical zone;
15[e]	from which a plurality of video feeds associated with the geographic zone are sourced;
15[f]	monitoring a selection of a radio frequency of the plurality of radio frequencies by the user;
15[g]	identifying at least one video feed by selecting the at least one video feed from the plurality of video feeds associated with the geographic zone; wherein the at least one video feed is associated with the selected communication channel based on a user policy that identifies one or more video feeds that are relevant to the user when the user accesses the selected communication channel,
15[h]	the one or more video feeds being independent of the selected communication channel; and
15[i]	providing access to the identified at least one video feed to the mobile communication device based on the user policy.

Claim 16

16	The apparatus of claim 15, wherein providing access comprises associating the identified at least one video feed with the mobile communication device in a database that is used to manage access to independent video feeds in a network based on audio communication channels that are selected by communication devices in the network.
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Claim 17

17[a]	The apparatus of claim 15, wherein the operations further comprise: accessing a database to identify a plurality of members of an emergency response team that includes the user of the mobile communication device; and
17[b]	presenting a plurality of available video feeds on the display of the mobile communication device, the plurality of available video feeds including video streams associated with the plurality of members of the emergency response team.

Claim 18

18	The apparatus of claim 17, wherein the available video feeds are sourced from a group of surveillance cameras.
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Claim 19

19	The apparatus of claim 15, wherein the communication channel is a Push-To-Talk (PTT) channel in a PTT communication network and the mobile communication device is a PTT radio.
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Claim 21

21[a]	The apparatus of claim 15, wherein the operations further comprise: monitoring an audio signal generated in proximity to a video camera providing a first video feed included in the identified at least one video feed;
21[b]	processing the audio signal to identify an audio event; and
21[c]	based on the identified audio event, providing access to the first video feed to a plurality of mobile communication devices in a group of mobile communication devices, the group of mobile communication devices including the mobile communication device of the user corresponding to the selection of the communication channel.

Claim 22

22	The apparatus of claim 15, wherein the communication channel is associated with a Virtual Talk Group (VTG).
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Claim 23

23	The apparatus of claim 15, wherein providing access to the video feed depends on a video association policy, the video association policy including a role of the user defined in a policy database.
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Claim 24

24[a]	The apparatus of claim 15, wherein the operations further comprise: identifying a geographical location of the user's mobile communication
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	device using a Global Positioning System;
24[b]	identifying that the at least one video feed is associated with the geographical location; associating the at least one video feed with other mobile communication devices set to the same channel as the user's mobile communication device; and automatically rendering access to the at least one video feed to the other mobile communication devices.

D. Prosecution History

43. The originally proposed independent claims did not recite any frequency display/selection and focused instead on video filtering by selecting a communication channel and identifying video feeds associated with that channel based on a user policy. Ex[1003], pp. 350-55. The Examiner, however, rejected those claims multiple times in view of the prior art. *Id.*, pp. 125-38, 181-92, 237-47, 285-93. The Examiner, for example, concluded that prior art references Shaffer (Ex[1014]) and “Kalley” (Ex[1013]) disclose “sharing a video feed as an example of communication between users accessing the channel or virtual talk group” and “video streaming amongst users accessing a channel” and satisfy all the filtering limitations, including (a) monitoring a selection of a virtual talk group, (b) identifying a video feed associated with the selected communication channel, (c) when the user access the selected communication channel. *Id.*, pp. 127-30.

Regarding Claim 1, Schaffer teaches a method comprising: a communication channel that may be accessed by mobile communication devices (*Figure 1 shows a talk*

group which is a communication channel that may be accessed by the devices mobile devices 110) and teaches providing access to communication with others accessing the same communication channel, but is silent on the communication including video feed associated with the selected communication channel based on a user policy that identifies one or more video feeds that are relevant to the user when the user accesses a communication channel the one or more video feeds being independent of the selected communication channel and providing access to the mobile communication device based on the user policy, and does not teach the user selecting the communication channel or talk group. Kalley teaches a similar method with users in a talk group that may communicate, and teaches in paragraph 103 that the user may select the virtual talk group or communication channel, and paragraph 87 teaches sharing a video feed as an example of communication between users accessing the channel or virtual talk group, and paragraph 101 teaches video streaming amongst users accessing a channel. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Schaffer with that of Kalley to provide virtual talk group communication sessions and manage the capabilities of endpoints (paragraph 10 of Kalley) to improve communication and access to information amongst users in a specific communication group.

Id., pp. 129-130 (excerpted); *see also* pp.127-128.

44. The independent claims were only allowed when applicants added the requirements of frequency display and selection. *Id.*, pp. 108-15. Notably, as issued, the claims require that the frequencies are displayed on a mobile device, selected by the user, and associated with a “geographical zone” from which video feeds “are sourced.” *Id.* Claim 1 amendments before allowance are shown below.

1. (Currently Amended) A method comprising: monitoring a selection of a communication channel by a user of a mobile communication device; <u>providing a plurality of radio frequencies on a display of the mobile communication device, each radio frequency being associated with a geographical zone from which a plurality of video feeds associated with the geographic zone are sourced;</u> <u>monitoring a selection of a radio frequency of the plurality of radio frequencies by the user;</u> identifying at least one video feed <u>by selecting the at least one video feed from the plurality of video feeds associated with the geographic zone, wherein the at least one video feed is</u> associated with the selected communication channel based on a user policy that identifies one or more video feeds that are relevant to the user when the user accesses the selected communication channel, the one or more video feeds being independent of the selected communication channel; and providing access to the identified at least one video feed to the mobile communication device based on the user policy.
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Id., p. 108. As I explain below in discussing the prior art, each of those added concepts had been known for years in the art, and none renders the claims (or the allegedly inventive video filtering) new or non-obvious.

E. Level of Ordinary Skill in the Art

45. I have been asked to consider the level of ordinary skill in the field that someone would have had at the time the claimed invention of the '830 patent was made. My opinions regarding the level of ordinary skill in the art are based on, among other things, my over 30 years of experience in the field of networking and communication systems, as well as: the levels of education and experience of persons working in the field, the types of problems encountered in the field; and the sophistication of the technology.

46. Based on my review and analysis of the '830 patent, the prior art cited herein, and the ordinary skill factors described in section VI, in my opinion, a POSITA in the field of the '830 patent at the time of the earliest alleged priority date (August 8, 2008) would have had at least a bachelor's degree in computer science, electrical engineering, or a similar field, and would have had approximately 2 years industry experience in networking or communication systems, including interoperating different types of networks that include video feeds. Additional education in the fields of electrical engineering or computer science such as a masters or doctorate degree may serve as a substitute for experience in the field. A person with less or different education but more relevant practical experience, or vice versa, may also meet this standard. The prior art also evidences the level of skill in the art.

47. As of August 8, 2008, *i.e.*, the earliest alleged priority date of the '830 patent, I had more than ordinary skill in the art. I am, however, familiar with the skills and knowledge possessed by those I would have considered a POSITA as of that date. When I refer to the understanding of a POSITA, I am referring to the understanding of such a person as of August 8, 2008.

F. Claim Construction of Terms in the Challenged Patent

48. It is my understanding that in order to properly evaluate the '830 patent, the terms of the claims must first be interpreted. It is my understanding that the claims are to be construed according to the same claim construction standard that

district courts use. For most terms in the Challenged Claims, I have applied their ordinary and customary meaning as understood by one of ordinary skill in the art at the time of the invention in light of the specification and the prosecution history.

49. I have been informed by counsel for Petitioner that, in district court, Patent Owner and Petitioner have proposed constructions for certain terms. Ex[1031]. The proposals are set forth below. I have considered both party's constructions, and, with regard to terms 1, 3, 4, and 5, my conclusions would not change under either party's proposal. In other words, under either party's proposal for these terms, I believe the prior art discloses the claim limitations, such that my opinions would not change. With regard to term 2, I analyze the term as set forth in my opinions regarding invalidity, without conceding that these claim elements satisfy the definiteness requirement of 35 U.S.C. §112.

Term	Petitioner Proposal	Patent Owner Proposal
1. Order of steps (Claim 1)	The “monitoring a selection of a communication channel...” step must be performed before the “identifying...” step The “providing a plurality of radio frequencies...” step and the “monitoring a selection of a radio frequency” step must be performed before the “identifying ...” step	Plain and ordinary meaning

2. wherein the at least one video feed is associated with the selected communication channel ... the one or more video feeds being independent of the selected communication channel (Claim 1)	Indefinite	Plain and ordinary meaning
3. monitoring a selection (Claim 1)	MSI proposes to construe “monitoring a selection of a communication channel by a user of a mobile communication device” as “monitoring whether a user sets a mobile communication device to a communication channel”	Plain and ordinary meaning
4. Virtual Talk Group (Claim 8)	“a talk group that communicates using an IP address”	Plain and ordinary meaning
5. Push-to-Talk (PTT) channel in a PTT communication network (Claim 5)	“a channel for transmitting half-duplex communications in a Push-to-Talk communication network”	Plain and ordinary meaning

50. I also understand that Petitioner proposes in this IPR that the term “video stream association module” in claim 15 be construed as a means-plus-function limitation with the below function and corresponding structure. I have applied this interpretation below. I also note that the prior art discussed herein discloses the Challenged Claims under any reasonable construction for this term.

Elements	Function and Structure
15[b] “video stream association module”	<u>Function</u>: monitoring a selection of a communication channel..., providing a plurality of radio frequencies on a display..., monitoring a selection of a radio frequency..., identifying at least one video feed..., providing access to the identified at least one video feed... <u>Structure</u>: “a variety of software applications and/or hardware that can monitor and process communications between the communication devices,” as described at Ex[1001], 3:46-49 and FIGs. 2-4, 8-9, 11 and associated text.²

51. I understand that the remaining claim terms in this IPR have been construed by Petitioner according to their ordinary and customary meaning. The prior art discussed herein discloses the Challenged Claims under any reasonable construction.

VIII. KNOWLEDGE OF A POSITA

52. In the subsections below, I describe some of the features of networks and communication systems that would have been well known to a POSITA as of August 8, 2008. It is my opinion that the claims of the '830 patent were already known and obvious in light of the prior art that came before it.

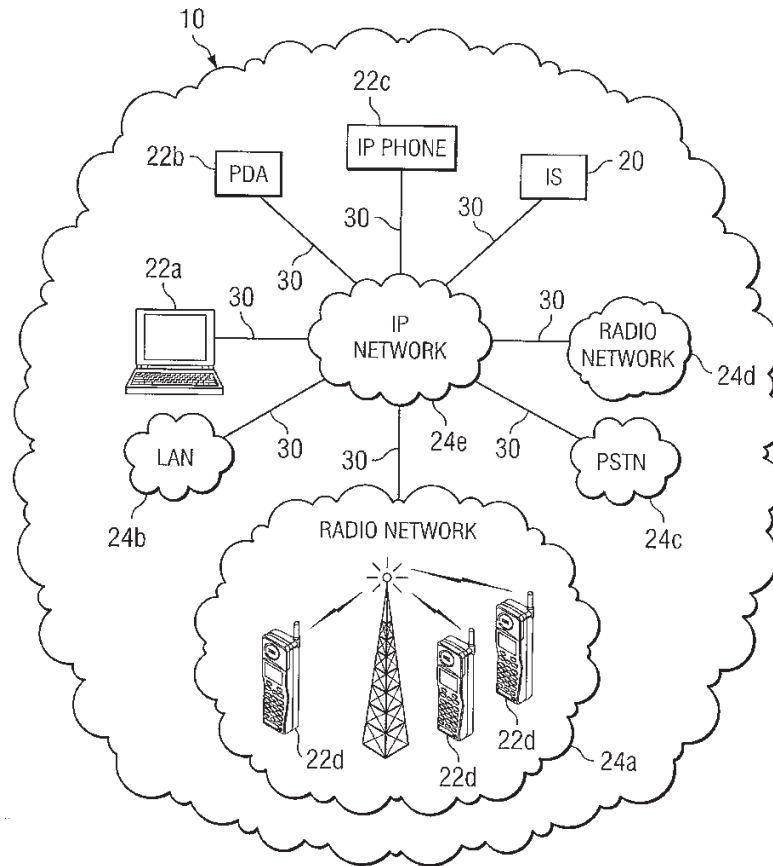
² I cite to the figures without conceding that these claim elements satisfy the requirements of 35 U.S.C. §112.

A. Interoperability Systems

53. The '830 patent describes a communication system that facilitates “communication of media streams on a plurality of communication channels” that may use “different communication paradigms.” Ex[1001], 3:46-57. Such Communication systems allowing different audio and video networks to interoperate (and users in different networks to communicate) were well known by August 8, 2008. As acknowledged in the overview of the '830 patent, for example, such communication systems included “a collection of communications networks, transmission systems, relay stations, tributary stations, and data terminal equipment usually capable of interconnection and interoperation to form an integrated whole.” Ex[1001], 1:13-17. Communications using these prior art interoperability systems included “audio signals on different communication channels” and “[v]ideo feeds.” *Id.*, 1:13-20.

54. Several prior art references taught interoperable communication systems between “any suitable IP or non-IP [*e.g.*, radio] communication network of any wireless or wireline form.” Ex[1013], ¶0024. For example, Shaffer '339 describes interoperability between “wireless or wire-line network[s] that may send analog and/or internet protocol (IP) information.” Ex[1014], ¶¶0008, 0012. As another example, FIG. 1 from Kalley, below, depicts a communication system with communication networks 24a-24e “distributed locally or across multiple cities or other geographic regions” interoperably connected by Interoperability System (IS)

20 utilizing an IP network. Ex[1013], ¶¶0024, 0041-0042. The illustrated communication networks and devices may include “a land mobile radios (LMR) network,” a local area network (“LAN”), or an IP-based device such as a “personal computer (PC) or “IP phone.” *Id.*, ¶¶0025, 0039-0040.



Ex[1013], FIG. 1.

55. By the time of the '830 patent, several companies, including Cisco and Motorola, had also developed and commercialized such interoperable systems that could bridge IP-based communications and land mobile radio (LMR) communications on radio networks to facilitate connections across various networks and geographical areas. For example, Kalley lists “[o]rganizations working towards

interoperability solutions” including “JPS COMMUNICATIONS of RAYTHEON CORPORATION, IP BLUE SOFTWARE SOLUTIONS, TWISTED PAIR SOLUTIONS, INC., M/A-COM, INC., MOTOROLA, INC., and CISCO SYSTEMS, INC.” Ex[1013], ¶¶0003.

56. These known interoperability systems also allowed devices with video feeds in one network to communicate with the PCs, radios, or IP phones in another network. For example, the system in Kalley, depicted above, connected devices in disparate networks, including devices with a “camera,” Ex[1013], ¶¶0021, 0039. As another example, Shaffer ’339 describes various “cameras” communicating with and connected to an interoperability system also communicating with various other communication devices, such as cellular phones and computers. Ex[1014], ¶¶0008-0009, 0014, FIG. 1. The benefits of such interoperability systems would have been readily apparent to a POSITA—one network could facilitate voice, data, and video communication among various communication devices. *E.g.*, Ex[1015], p. 10 (“The cost of VoIP systems can be significantly less than circuit switched systems.”). The cost savings and simplicity made this form of communication an obvious decision.

B. Interoperability Systems Using Policies to Ensure That Users Receive Only Relevant Communications

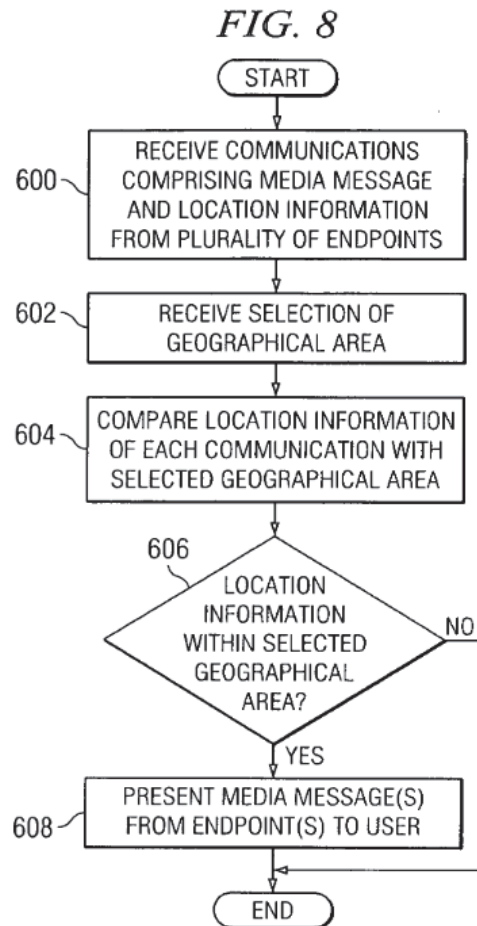
57. With interoperability systems involving various types of devices, the volume of communications a user could receive increases significantly. To avoid requiring a user to manually filter through all available communications, numerous

companies had developed technology that automatically mapped relevant communications to relevant users.

58. For example, in one prior art approach, systems organized users into logical groupings so that only relevant communications reached a user without inundating the user with all available communication streams. *See e.g.*, Ex[1016], Title, 2:50-4:9; Ex[1014], ¶0007; Ex[1013], ¶¶0005-0007. Such groups were known to be organized by various logical factors, such as the location of the user endpoints. Ex[1013], ¶0059; Ex[1014], ¶0018. For example, in the case of first responders in a particular location coordinating operations in response to an incident, an interoperability system could form a group to facilitate relevant communications amongst personnel who could not otherwise communicate with each other (because, for example, the fire department responders used a different radio network than the police department responders). Ex[1017], pp. 106, 108. Formation of such ad-hoc groups was done automatically through various user policies and/or user input, depending on the system's design. *See id.*, pp. 140-42; Ex[1018], pp. 2-3; Ex[1019], pp. 95, 97.

Policies related to geographic selection were well known. For example, in U.S. Patent App. No. 2007/0036100 ("Shaffer '100"), a user selects an area on a map to implement a "filter functionality" that identifies only the communications in the selected area. Ex[1005], ¶0082; *see also id.*, ¶¶0076-80, 0097-0100, Figs. 5, 8. "The endpoint may receive communications from additional endpoints but may filter

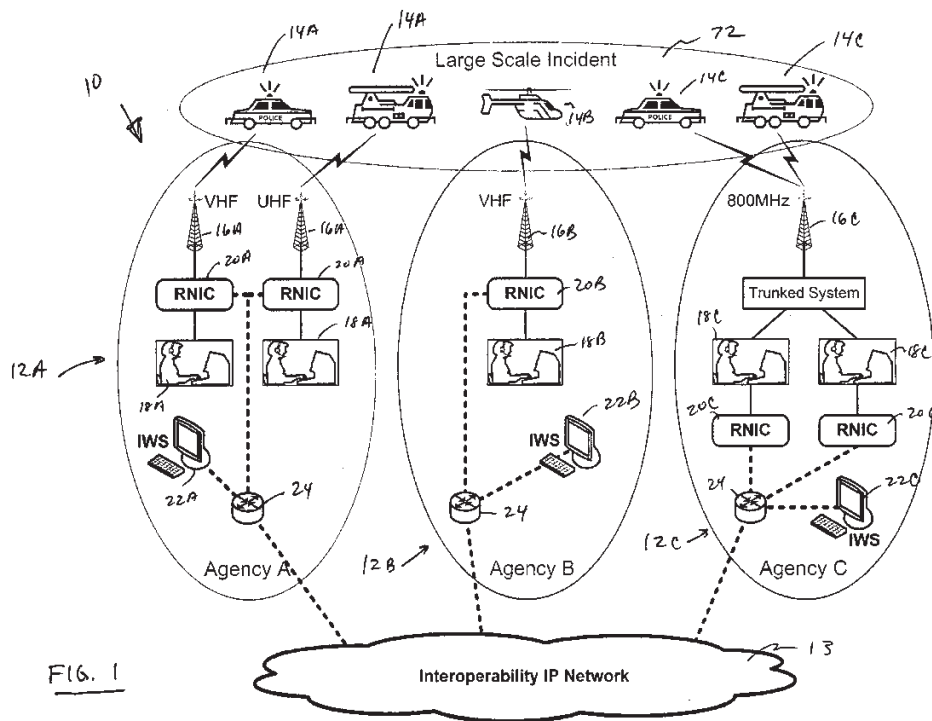
out for presentation to its users only those communications from endpoints within the selected area.” *Id.*, ¶0023. For example, FIG. 8 (below) illustrates a user selection of a particular geographic area (step 602) to define the policy, and for each media message (such as video) a user receives from endpoints on the map, the user uses the policy to filter the messages by comparing location information for the message to the selected geographic area (step 606); only if the location information is within the selected area is the message presented to the user. *Id.*, ¶¶0097-0100.



Ex[1005], Fig. 8.

59. In addition to selecting a geographic area on a map, it was also well known to set policies based on geographic proximity to a communication source so a user could receive new communications as they moved into new areas. For example, U.S. Patent App. No. 2007/0076094 (“Dickerson”) describes a policy where a user has the capability to restrict or limit the selection of video feeds based on the geographic location relative to their own. Ex[1020], ¶0054. “The receiver of the video feed controls the selection of the viewable distance... [to] limit[] the scope of the video sources” to display (Ex[1020], ¶0054), and “a determination can be made to show video sources that are within one-quarter mile or one-half mile, or whatever value is deemed suitable by the viewer” (*id.*, ¶0056).

60. As another example, user policies were also known in the art to provide communications to geographically distinct agencies upon the occurrence of an event. For example, U.S. Patent App. No 2007/0060144 (“Mills”) teaches that upon the occurrence of an “incident” an “incident controller 45 assigns an IP address that will be used for voice communications for the incident,” where users from differing agencies can connect and communicate via an “Interoperability IP Network.” Ex[1021], ¶¶0007, 0019, 0037, 0039, 0041. These communications among users in different agencies could be organized into a “peer-to-peer talk group.” *Id.*, ¶0037. FIG. 1 of Mills, below, shows distinct agencies being connected through an Interoperability IP Network upon the occurrence of an incident. *Id.*, ¶¶0007, 0019.



C. Radio Systems that Mapped Radio Frequencies to Geographic Zones and Displayed and Allowed User Selection of Radio Frequencies

61. As I described above, the disparate networks that interoperability systems connected often included land mobile radio (LMR) networks, which have been used by first responders and other personnel for decades to communicate with other radios on specific frequencies.

62. In such networks, for example, radio frequencies used for communications are commonly associated with specific geographic areas. *See* Ex[1022], pp. 57, 210-11; Ex[1023], p. 210. For example, a POSITA would have understood that two geographically adjacent radio base stations would typically operate on different frequencies to prevent signal interference. Accordingly, when a

user of a half-duplex LMR device enters a new location, the user would need to tune their radio to a specific frequency associated with that location to receive communications. Ex[1004], ¶0003 (“Some systems rely on a handbook of frequencies for different agencies at a variety of locations”); *see also* Ex[1024], ¶0046 (describing geographically distinct radio stations, “[e]ach base station 402, 404 provides radio communication service to mobile stations in the geographic vicinity of the base station”); Ex[1012], FIG. 6, 11:20-26 (describing radio base station information in a “database organized by geographic regions ... [having] attribute data for each station such as the ‘frequency’”).

For example, the High Frequency (HF) Fixed Service used to support the National Radio Communications System (NRCS), also known as Command and Control Communications (C3), includes a “Table of Frequency Allocations” (shown below). Ex[1022], p. 65. The table maps frequencies for individual stations based on their respective geographic locations. *Id.*

FIGURE 7-2. NRCS FREQUENCIES

CHNL	FREQ (kHz)	NOTES	CHNL	FREQ (kHz)	NOTES
00	4055.0	USB (East. U.S.)	18	15851.0	LSB (West. U.S.)
01	4055.0	LSB (West. U.S.)	19	16348.0	USB; LSB
02	4625.0	USB; LSB	20	19410.0	USB (East. U.S.)
03	5860.0	USB	21	19410.0	LSB (West. U.S.)
04	6870.0	USB (West. U.S.)	22	20852.0	USB; LSB
05	6870.0	LSB (East. U.S.)	23	24550.0	USB (West. U.S.)
06	7475.0	USB; LSB	24	24550.0	LSB (East. U.S.)
07	7611.0	USB (East. U.S.)	none	3428.0	USB; A/G FIFO use
08	7611.0	LSB (West. U.S.)	none	5571.0	USB; A/G FIFO use
09	8125.0	USB (East. U.S.)	25	8912.0	USB; A/G FIFO use
10	8125.0	LSB (West. U.S.)	26	11288.0	USB; A/G FIFO use
11	9914.0	USB; LSB	27	13312.0	USB; A/G FIFO use
12	11637.0	USB (East. U.S.)	28	17964.0	USB; A/G FIFO use
13	11637.0	LSB (West. U.S.)	none	2866.0	USB; A/G Alaska only
14	13457.0	USB (West. U.S.)	none	3449.0	USB; A/G Alaska only
15	13457.0	LSB (East. U.S.)	none	8855.0	USB; A/G Alaska only
16	13630.0	USB; LSB	none	11375.0	USB; A/G Alaska only
17	15851.0	USB (East. U.S.)			

NOTES:

1. USB - upper sideband operation
2. LSB - lower sideband operation
3. Eastern U.S. is defined as East of the Mississippi River
4. Western U.S. is defined as West of the Mississippi River

Id., FIG. 7-2.

63. Similarly, the Public Television (PTV) network used specific portions of the radio frequency spectrum to transmit video and audio signals over the air in specific locations, as shown below in “a map showing Public Television Network state-wide broadcast coverage of Iowa.” Ex[1025], FIG. 1, 3:60-61.

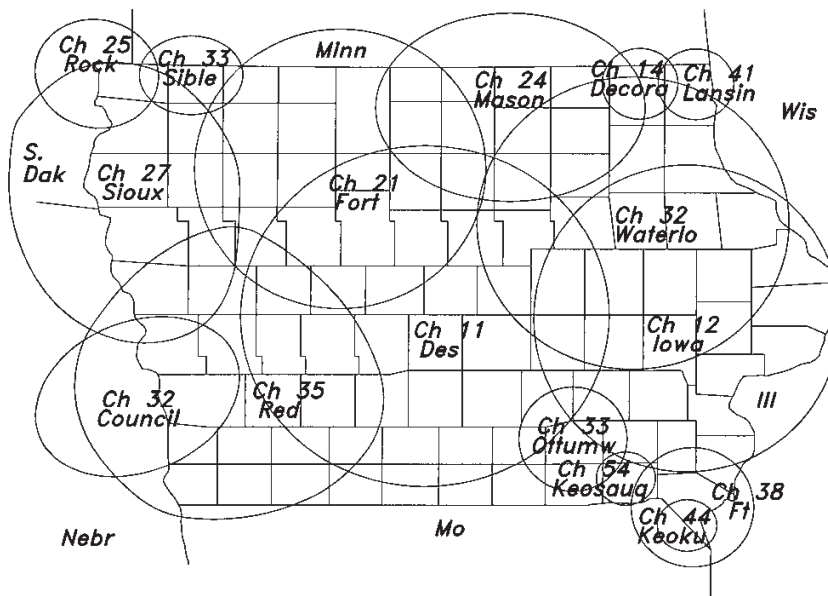


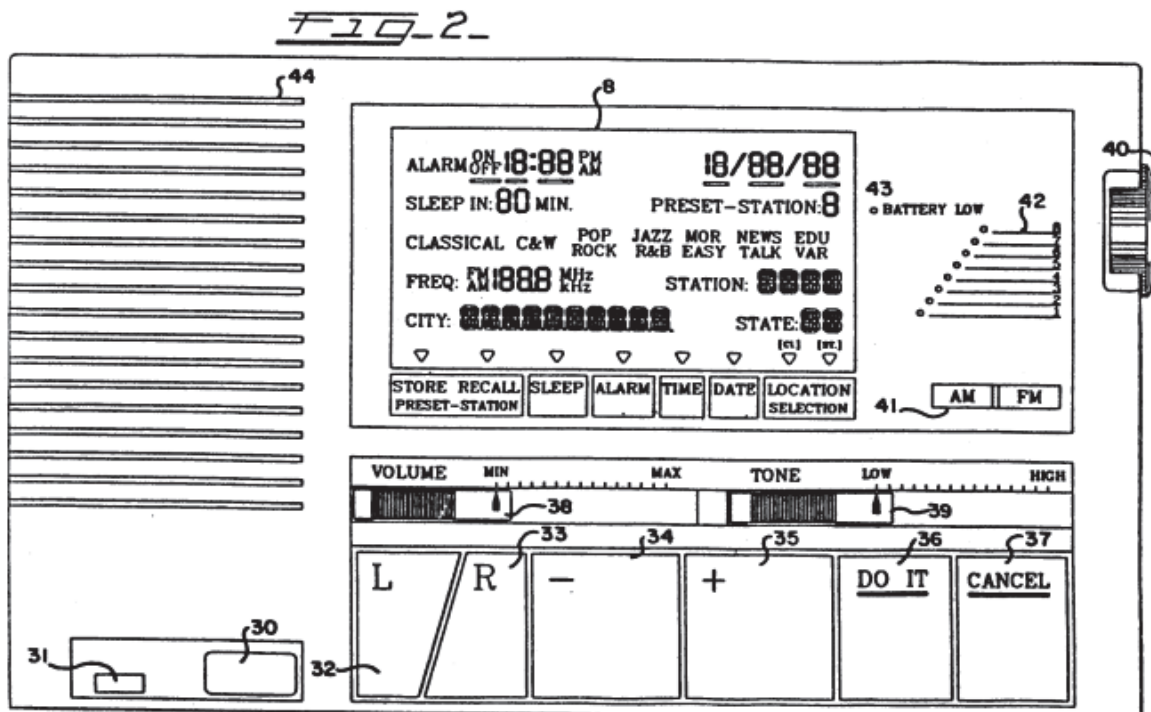
FIG. 1

Ex[1025], FIG. 1.

64. Moreover, scanning radios, in particular, were well-known to allow a radio to create a list of available frequencies in a particular geographic area on which a user could receive or transmit information (*i.e.*, a “scan list”). For example, U.S. Patent No. 7,260,394 (“Welnick”) describes that a scan list “contains channel frequencies in order of priority (*e.g.*, home networks, then preferred networks, then roam networks, then other networks).” Ex[1026], 3:58-4:6. By 2008, it was well-known that such scanning radios could be used in LMR devices. For example, U.K. Patent App. No. GB2384393 (“Valentine”) describes a radio for public safety LMR, such as TETRA and APCO. Ex[1027], 1:5-10. In Valentine, the scan list is

constantly updated; when a radio user enters a new location, it updates its “scan list” to include new frequencies for that area. *Id.*, 15:27-16:17

65. Finally, display technology that presents and allows a user to select a particular frequency is decades old (and would have been obvious to anyone using an AM/FM radio). As just one example, U.S. Patent No. 5,152,011 (“Schwob”) illustrates a display (below) that displays a radio frequency associated with a specific station (“FREQ”) in a specific geographic region (“CITY”) and allows users to select different frequencies programmed to that location (using buttons 34 and 35). Ex[1012], 7:1-50, FIGs. 2-3. By 2008, a POSITA would have recognized that user interface and display technology had developed significantly, such that a wide range of available display and selection options would have been available to facilitate the display of and selection from a scan list.



Ex[1012], FIG. 2.

D. Video Surveillance Systems Transmitting Video Feeds

66. As described above, another type of network known to connect to an interoperability system is a video surveillance network. By 2008, video surveillance systems were ubiquitous. They addressed the well-known need to monitor areas of interest, providing eyes on scene, without the need for the physical presence of personnel. *E.g.*, Ex[1028], ¶0003 (“... it is desirable to have a system that enables wireless transmission of audio/video information to provide a more complete impression of a particular scene or emergency situation”); Ex[1029], ¶0017 (“The subject invention is directed to an IP-network-based surveillance and monitoring system wherein video captured from a number of remotely located security cameras

may be digitized, compressed, and networked for access, review and control at a remote monitoring station.”).

67. Surveillance systems went beyond stationary cameras saving video clips of a specific area. For example, surveillance systems at the time could provide “real-time” video from “an in-vehicle camera” shared with police officers not at the scene, thus enabling real-time collaboration for law enforcement. Ex[1028], ¶¶0007-0015. Furthermore, surveillance video feeds could be provided to mobile devices and could be accompanied with other information such as the location from which the video feed is sourced. *See e.g.*, Ex[1029], ¶0020 (“map contains icons representing cameras or other sensor sites”), ¶0017; Ex[1028], ¶¶0007-0015, 0020-0021, 0022 (“sharing of streaming video among the various responders”), 0027; Ex[1030], ¶¶0027-0028, 0031, 0036, 0044. Some surveillance systems further enabled users to control the angle and settings of surveillance cameras in a remote location. *See e.g.*, Ex[1029], ¶0095 (“user [] simply changes the angle as desired to select the new camera direction.”), Claims 3-6.

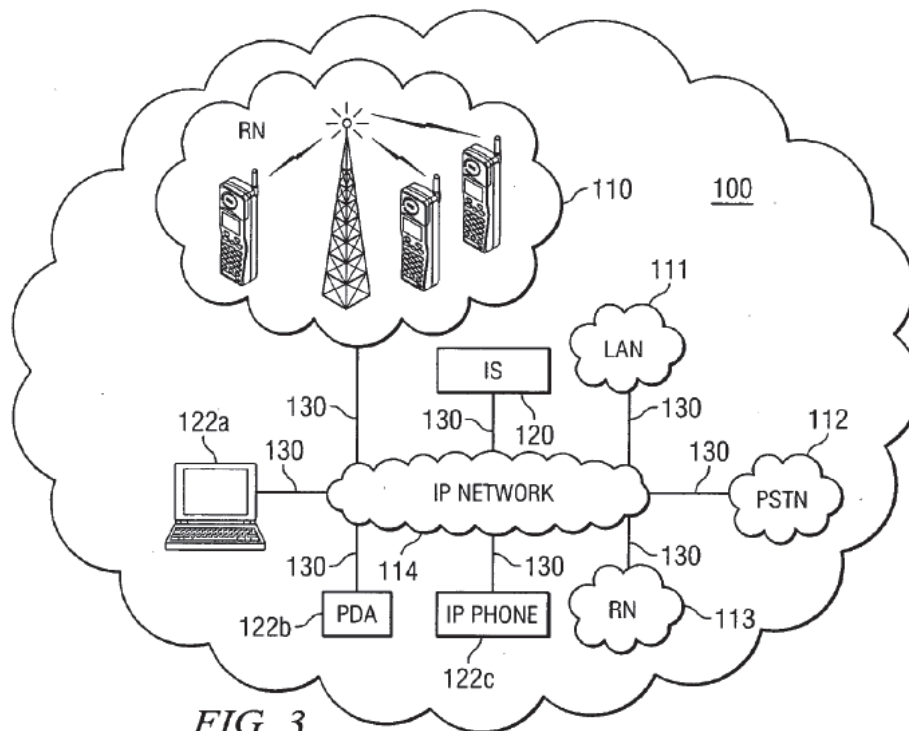
68. In addition, surveillance systems also included other sensors, such as sound sensors. In particular, sensors such as glass break detectors were known to “listen to sounds” including the “amplitude” and “duration” of the sound to determine to trigger an alarm or notification. Ex[1008], p. 2.

IX. OVERVIEW OF THE PRIOR ART

A. Shaffer (Ex[1004])

69. Shaffer, U.S. Patent Application No. 2006/0281471, was filed on June 8, 2005 and published on December 14, 2006 which is more than one year before the assumed August 8, 2008 priority date of the '830 patent. I understand from counsel for Petitioner that Shaffer therefore qualifies as prior art under at least pre-AIA 35 U.S.C. §§ 102(a) and (b).

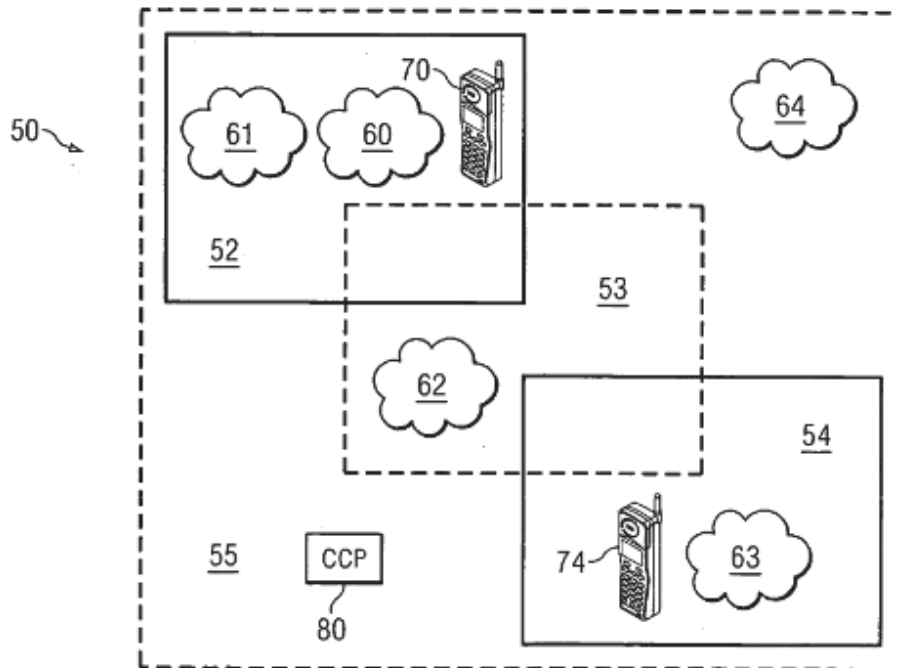
70. Like the '830 patent, Shaffer discloses a communication system (*e.g.*, FIG. 3, below) connecting various devices (endpoints), such as computers, phones, radios, and cameras, used by first responders, such as police and fire departments. Ex[1004], ¶¶0015, 0025. Also like the '830 patent, Shaffer describes that different types of endpoints can be combined by an interoperability service (IS, 120 below) into “a virtual talk group for communication using a particular IP address.” *Id.*, ¶0039. In particular, the IS uses a “multicast IP address[]” that “facilitates interoperability between endpoints and devices of various communication networks.” Ex[1004], ¶¶0016-0020, 0037-0039.



Ex[1004], FIG. 3.

71. Shaffer further discloses that endpoints, including video cameras, can be grouped into geographic areas. For example, FIG. 2 below depicts a plurality of networks 60-64 connecting devices 70 in different geographic regions 52-55, such as “buildings, campuses, municipalities, counties, states, countries or any other particular geographical area.” *Id.*, ¶¶0025-0027.

FIG. 2



Ex[1004], FIG. 2.

72. As shown in FIG. 4, as a user of a mobile endpoint travels between locations, the user can select various parameters on the endpoint's display, including (a) a communication network, such as police or fire, and (b) local frequencies for each location, such as City A and City B. Ex[1004], ¶0044. A user may change these communication parameters "through specific user command," when a user "enters an area of a different or particular communication network." *Id.*, ¶¶0008, 0032.

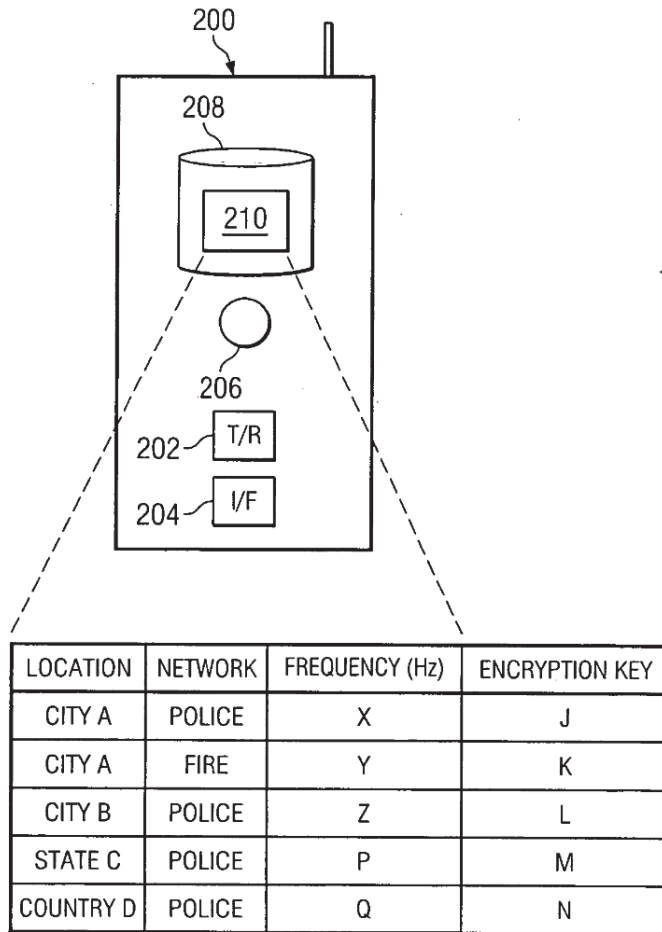


FIG. 4

Ex[1004], FIG. 4.

B. Saylor (Ex[1011])

73. Saylor, U.S. Patent No. 7,113,090, was filed on July 27, 2005, and issued on September 26, 2006 which is more than one year before the assumed August 8, 2008 priority date of the '830 patent. I understand from counsel for Petitioner that Saylor therefore qualifies as prior art under at least pre-AIA 35 U.S.C. §§ 102(a) and (b).

74. Saylor discloses a security system including “monitoring system” that provide “photos, pictures, [and] video” to an end user. Ex[1011], 2:45-55. The security system notifies a recipient, including emergency personnel, when it detects an “alert situation.” *Id.*, 5:37-42. For example, the notification can include “video clips” from video surveillance cameras. *Id.*, 2:49-55, 11:67-12:6, 13:51-54. A central security network (FIG. 1 below) may alert “identified entities via wireless and/or other devices, such as mobile devices.” *Id.*, 7:40-42. For example, when an alarm is detected, the central security network can send relevant information “via the Internet 150” or other methods to “[a]n emergency entity 164” or other entities 161-162. *Id.*, 6:22-32, 7:40-48, 9:23-29, 11:46-55; *see also id.*, 11:24-28 (identifying mobile devices receiving notifications).

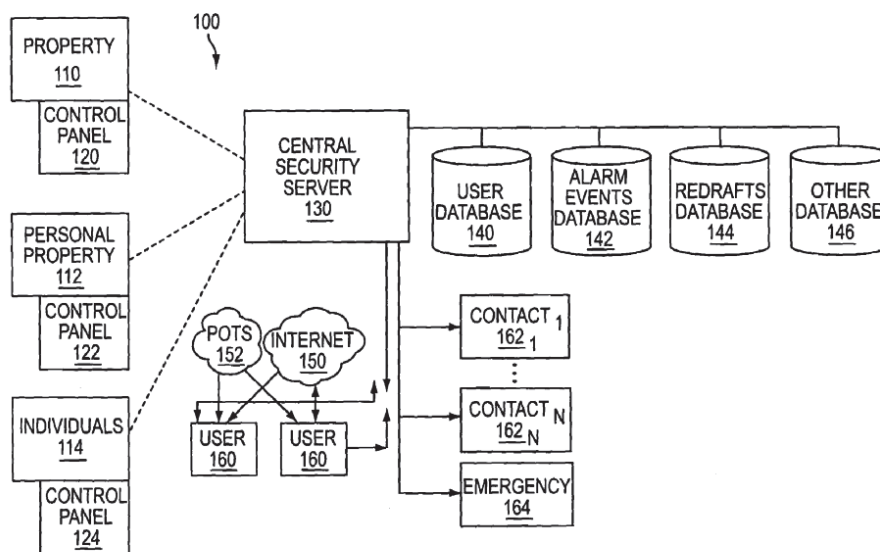


FIG. 1

Ex[1011], FIG. 1.

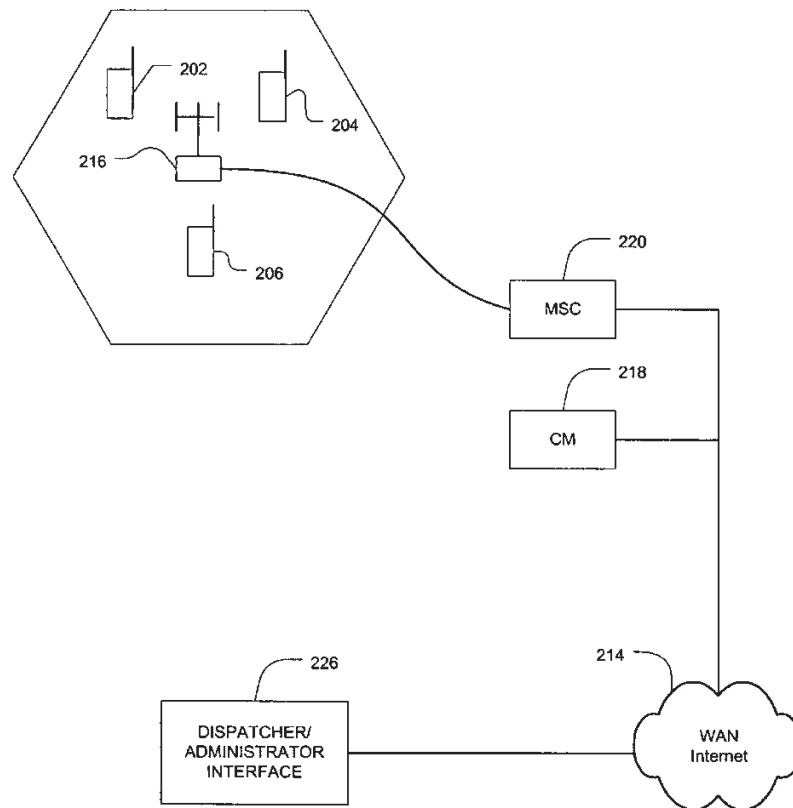
75. Saylor further describes “databases 140, 142, 144, and 146” (shown above) that “store relevant information for [] alarm services.” *Id.*, 6:9-15; *see also id.*, 5:63-5:1, 11:46-55, 12:6-14. Information stored in the databases “may include one or more of name, identification information, address information” for recipients of alarm notifications, and, based on this information, the security system may determine that “different alarm situations ... may warrant different levels of response” to different users. *Id.*, 8:39-48. The databases may also include “[s]pecial instructions” including “information to be conveyed to entities reacting to the alarm for a particular location or object.” *Id.*, 8:34-60.

C. Gogic (Ex[1006])

76. Gogic, U.S. Patent Application No. 2007/0173273, was filed on April 4, 2006 and published on July 26, 2007 which is more than one year before the assumed August 8, 2008 priority date of the '830 patent. I understand from counsel for Petitioner that Gogic therefore qualifies as prior art under at least pre-AIA 35 U.S.C. §§ 102(a) and (b).

77. Gogic discloses a system and method for providing communication services to an ad-hoc “group” or “net” of communication devices (CDs) such as “wireless telephones,” “video cameras,” and “laptops,” (among other devices) communicating on a network. Ex[1006], ¶¶0010-0011, 0034-0035, 0039, 0047. As shown in FIG. 2 (below), communication manager (CM) 218 sets various criteria for forming “ad-hoc group[s]” of CDs (202, 204, 206) and “manages the real-time

and administrative operation of groups. *Id.*, ¶¶0056. For example, CM may “control[] formation” of an “ad-hoc group of users” based on user roles and “location-based membership criteria.” *Id.*, ¶¶0056; *see also id.*, ¶¶0039, 0046, 0053-0054, 0059-0060.



Ex[1006], FIG. 2.

78. FIG. 4 below depicts the process of CM 218 forming an ad-hoc communication group. *Id.*, FIG. 4. First, each of CD₁, CD₂, and CD_x, are communicating separately with a “base station” in a particular geographic area. *See, e.g.*, Ex[1006], FIG. 2 (illustrating base station), ¶¶0034-0035, 0039, 0047. Then, CM 218 sends a message (406) directing a base station (MSC/BS_N 408) to send an invitation (420) to all CDs in its service area (412, 414, 416). *Id.*, ¶¶0060-0061. CDs

“calculate their location and evaluate [] their location against the group membership location criteria,” provided in the invitation 420. *Id.*, ¶0062. If a CD qualifies and accepts the invitation, the CD accesses the communication group. *Id.*

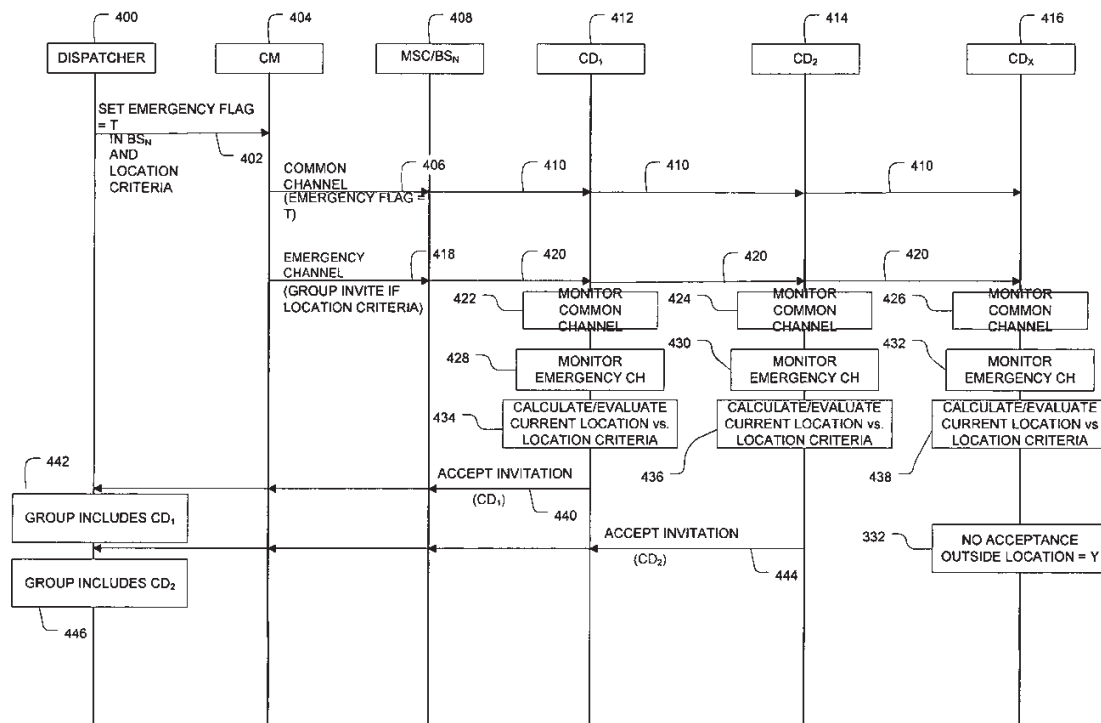


FIG. 4

Ex[1006], FIG. 4.

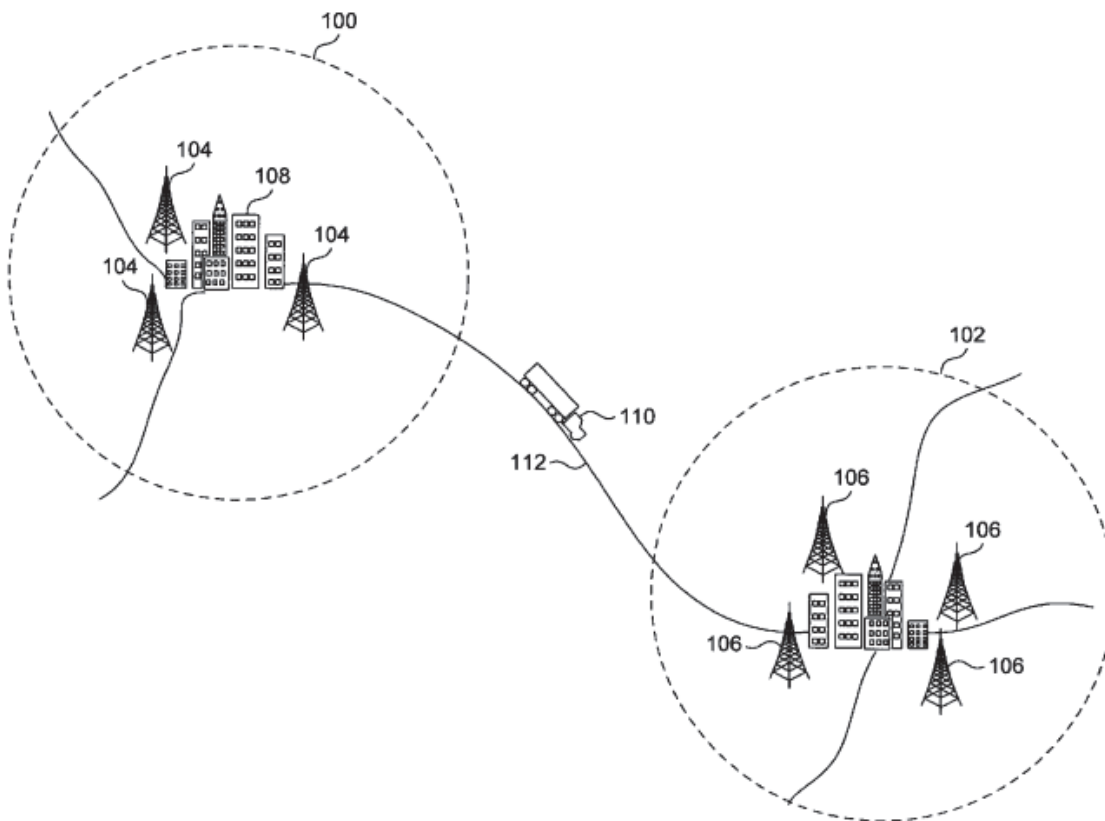
79. The group communications include various forms of media including “audio and video data,” from various endpoints such as telephones and cameras. Ex[1006], ¶¶0025, 0035.

D. Opitz (Ex[1007])

80. Opitz, U.S. Patent No. 8,090,388, was filed on March 20, 2007, the Opitz priority date, which is before the assumed August 8, 2008 priority date of the

'830 patent. I understand from counsel for Petitioner that Opitz qualifies as prior art under at least pre-AIA 35 U.S.C. § 102(e).

81. Opitz discloses a communication system (below) in which a mobile radio (110) is moving between geographic locations (102 and 104), with multiple base stations and frequencies associated with each location. Ex[1007], 1:32-43, FIG.1. In Opitz, the radio has a position locator, such as GPS, a processor that can track and display the changing frequencies between regions in which the radio is located, and an interface that allows a user to select a frequency. *Id.*, 5:3-18.



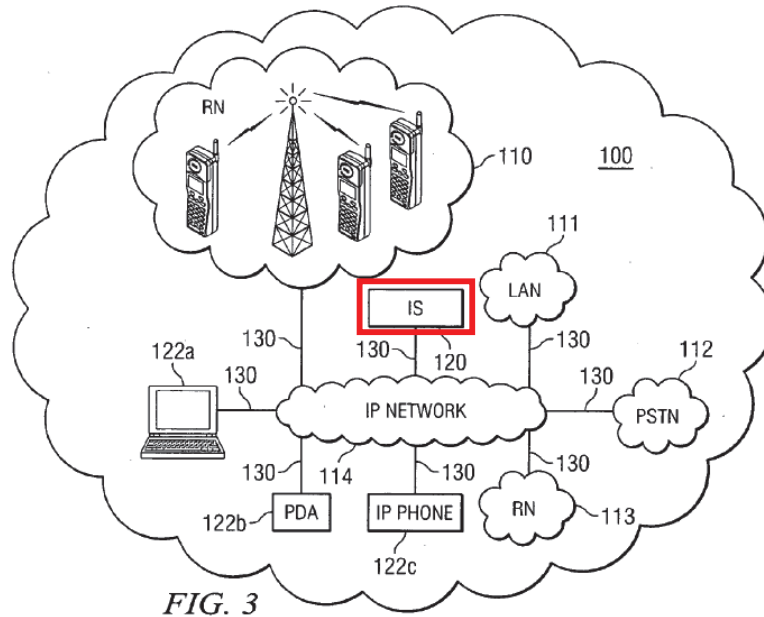
Ex[1007], FIG. 1.

X. THE ASSERTED GROUNDS OF INVALIDITY

A. Ground 1: Claims 1-5, 7-19, 21-24 would have been obvious over Shaffer in view of Saylor

1. A POSITA would have and could have combined Shaffer with Saylor

82. Shaffer discloses an “Interoperability System” (IS 120 in FIG. 3, red below) that allows different networks using different communication protocols (*e.g.*, LAN 111 and radio network 113) to communicate “audio, video, or other data” to each other via an Internet Protocol (IP) network. Ex[1004], ¶¶0021-0022, 0038. The IS can, for example, connect devices in different networks and different regions, including different “buildings, campuses, cities, counties, states, countries or any other particular geographical area.” Ex[1004], ¶0046. The IS uses IP to provide interoperability. Ex[1004], ¶¶0039-0040. For example, a “multicast IP address[]” can be assigned to a group of endpoints (such as “local safety and security forces”) so that, even if devices are in different networks, they can “communicate with each other through IS 120.” *Id.*; *see also id.*, ¶¶0022 (IP networks transmit voice and video data by “placing the data in packets”), 0025.



Ex[1004], FIG. 3 (annotated).

83. Saylor discloses a specific type of communications network—namely, a central security network (FIG. 1 below) for a building or facility—that communicates with other networks. Ex[1011], 5:62-65, FIG. 1. In particular, Saylor’s network is configured using rules and preferences to “automatically inform” recipients, including security or emergency contacts (blue below), of alarms or emergencies in a monitored building. *Id.*, 1:17-22, 9:22-28. Saylor specifically discloses that the central security network can convey video or other types of data, including video clips of or instructions relating to a monitored location, to entities in other networks over an IP communications network such as the Internet. *Id.*, 2:45-55, 5:27-36, 6:22-32, 17:1-9.

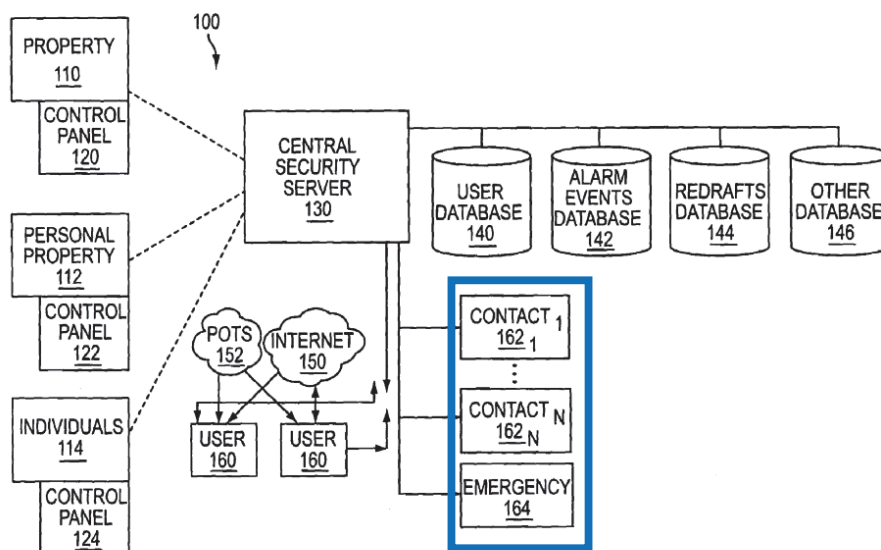


FIG. 1

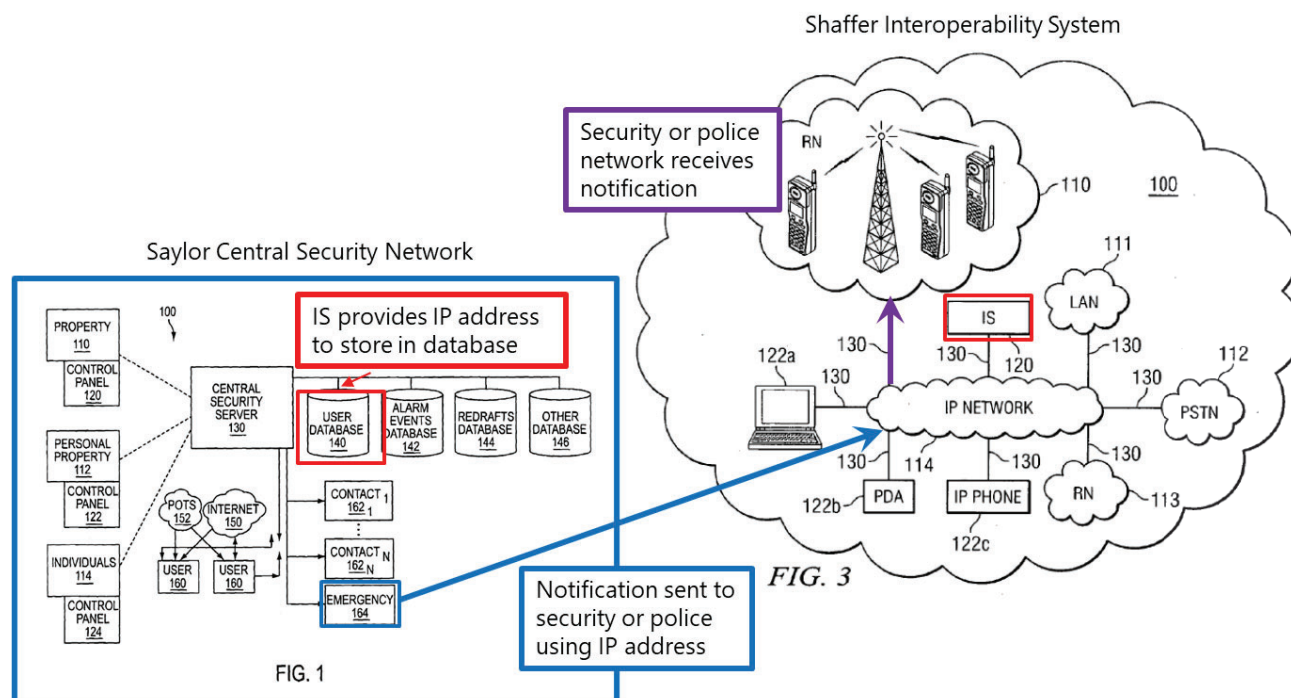
Ex[1011], FIG. 1 (annotated).

84. In view of these disclosures, it is my opinion a POSITA would have been motivated to combine Shaffer and Saylor and, specifically, to connect Saylor's central security network as an input to Shaffer's IS, as illustrated in the annotated figure below. In the combined system depicted below ("Shaffer-Saylor"), the IS in Shaffer (shown with a red box in the above figure after paragraph 85) provides the connection from Saylor's central security network to the relevant personnel and authorities in a different network who may respond to an incident (*e.g.*, a building's security personnel or local police in the city where the building is located).

85. Specifically, it would have been obvious to a POSITA that, in the combined system, the IS of Shaffer would assign a multicast IP address (communication channel) to a particular endpoint or a group of endpoints requiring

notification of a particular type of event. *E.g.*, Ex[1004], ¶¶0039-0040 (describing assigning and storing multicast IP addresses). That IP address would have then been stored in Saylor's databases for retrieval and use to contact entities outside of the security system upon occurrence of an event. For example, in the combined system, when an alarm is triggered in Saylor's central security network, the security network could query its databases to retrieve the relevant IP address of the relevant entities to notify (as provided by Shaffer's IS) and use the address to send the alerts and notifications disclosed in Saylor (blue) to the relevant recipients (purple). Ex[1011], 9:22-28, 11:67-12:6, 13:51-54.

Shaffer-Saylor System



Ex[1011], FIG. 1 (annotated); Ex[1004], FIG. 3 (annotated).

86. The teachings of both Shaffer and Saylor would have motivated a POSITA to make this combination. Shaffer describes that IS 120 is designed to connect various types of networks, including a PTT radio network (typically used by security or emergency personnel) and a local area network (LAN) or public switched telephone network (PSTN) (typically used by sensors in homes and businesses). Ex[1004], ¶0037. Shaffer further describes that the networks may be associated with businesses, campuses, or other geographic areas or locations. Ex[1004], ¶0027. A POSITA would therefore have recognized that Shaffer's IS is designed to connect a network such as a video security system designed to monitor particular buildings with a different network that responds to incidents in those buildings, such as a security or emergency network. Indeed, interconnecting communication networks was and is a common practice, as I described above. Section VIII.A (Knowledge of a POSITA). Gateways, routers, and bridges are commonly used for this purpose. I have employed such hardware in this way for decades for all manner of projects.

87. A POSITA would also have recognized that Saylor discloses the type of network that would be operable with Shaffer's IS. Specifically, Saylor describes a packet-based central security network (using "TCP/IP") that receives alarms from sensors in buildings and other facilities. Ex[1011], 17:10-21, FIG. 11, 6:33-43. The Saylor central security network processes the alarms and, according to rules and preferences, transmits notifications and information to relevant recipients in *other*

networks, including security or emergency personnel in other types of networks with other communication protocols. *Id.*, 6:33-43, 8:18-33, 9:25-28. The notifications and information can include audio, video, or other data. *Id.*, 16:41-51, 8:52-60.

88. To implement these communications, Saylor describes that the central security network can identify relevant recipients in an “address book,” (*id.*, 7:48-52), but does not explain *how* to convey notifications to recipients in different networks. A POSITA would have recognized that Shaffer’s IS system provides the needed mechanism for interoperable communications to achieve Saylor’s security goals. A POSITA would have understood that Shaffer’s IS would have enabled security personnel or other responders to directly and seamlessly receive communications and information from surveillance cameras in a building utilizing Saylor’s security network.

89. A POSITA would have had a reasonable expectation of success in combining the references in the manner described. In the combination, Saylor’s central security network sends communications to another network via Shaffer’s IS in the manner already envisioned by both references—namely, by a first network sending a packet-based communication through an intermediary network, such as the “Internet,” to a second network also connected to the same intermediary network. Ex[1011], 6:22-25, FIG. 1; Ex[1004], ¶0020 (describing the IP network could be a wide area network, cellular network, or global distributed network such as the Internet, among other things).

90. A POSITA would have recognized that Shaffer’s IS could readily assign and provide a multicast address for a particular group required to communicate (e.g., security personnel for a company receiving notifications from one of the company’s buildings), and that Saylor could store and use the address to direct the video clips and alarm information to that group, according to the user preferences already set up in Saylor. *E.g.*, Ex[1004], ¶¶0039-0040 (describing assigning and storing multicast IP addresses).

2. Claim 1

a. *1[pre]:*

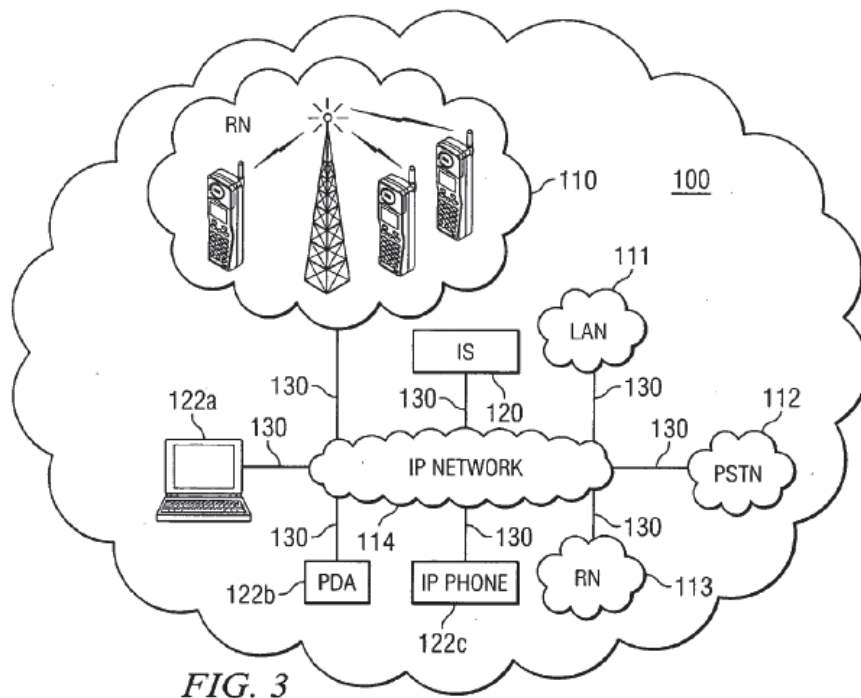
91. If the preamble is limiting, Shaffer-Saylor discloses “[a] *method, comprising.*” *E.g.*, Ex[1004], Abstract, ¶0001.

b. *1[a]*

92. Shaffer discloses “*monitoring a selection of a communication channel by a user of a mobile communication device.*” For example, in Shaffer, mobile security personnel can select and set their device to an IP address associated with the security forces in the area in which the security personnel is located, so that the device can receive communications via that IP address.

93. First, Shaffer discloses a communication channel as described in the ’830 patent (Ex[1001], 2:59-62, 4:22-28)—namely, a “particular IP address” for hosting a “virtual talk group.” Ex[1004], ¶0039. FIG. 3 of Shaffer (below), for example, illustrates various types of endpoints (including radios in radio network

(110), an IP phone (122c), and a PDA (122b)) that can form “communication sessions” comprising “audio and/or video telecommunication signals.” Ex[1004], ¶¶0020, 0037-0042, FIG. 3; *see also id.*, ¶0016 (describing FIG. 1), ¶0037 (noting that system 100 in FIG. 3 includes similar components and networks as FIG. 1). In particular, Interoperability System (IS) 120 uses “multicast IP addresses” so that the devices can “communicate with each other through IS 120 to provide network interoperability.” *Id.*, ¶0039; *see also id.*, ¶0038. For example, communication channels (multicast IP addresses) may exist for “local safety and security agencies.” *Id.*, ¶0040.



Ex[1004], FIG. 3.

94. Second, Shaffer discloses a selection of the communication channel by a user of a mobile communication device to set the device to the selected communication channel. For example, Shaffer discloses that a police officer “such as a state highway patrol officer, may be provided with a PC with a touch screen” where the “PC comprises a mobile endpoint.” Ex[1004], ¶¶0034, 0040. The officer can use the touchscreen to select “local safety and security forces” by selecting “[i]cons on the touch screen” to “join communication sessions.” Ex[1004], ¶0034. The IS monitors the officer’s selection, and “[u]pon receiving instructions from the officer,” adjusts “communications parameters used by the endpoint.” *Id.*; *see also id.*, ¶0041 (describing that IS stores multicast addresses “utilized by various agencies”). The communication parameters identified by IS 120 include a “multicast address[]” identifying the communication channel for the VTG for “local safety and security forces.” *Id.*, ¶¶0040-0041. “This allows the mobile endpoint user to connect with local safety and security forces manually with, for example, a single key stroke...” *Id.*, ¶0040.

95. Finally, the selection of the communication channel is monitored by the processor of the mobile endpoint so that the endpoint can “receive[] and transmit[] voice and other data” with other devices. *Id.*, ¶0044; *see also id.*, ¶¶0045-0047.

c. 1[b]

96. Shaffer also discloses “*providing a plurality of radio frequencies on a display of a mobile communication device, each radio frequency being associated*

with a geographical zone.” For example, in Shaffer, mobile security personnel can select a frequency associated with a nearby building.

97. In particular, Shaffer describes that a user’s device can store a plurality of radio frequencies associated with geographical zones. Ex[1004], FIG. 4. For example, FIG. 4 (below) shows an exemplary mobile communication device with memory module 208 that stores several different communication parameter listings 210. Ex[1004], ¶¶0043, 0046-0047. These parameter listings include *radio frequencies*, identified in Hertz (listed as X, Y, Z, P, Q). *Id.*, ¶¶0043-0048, FIG. 4.

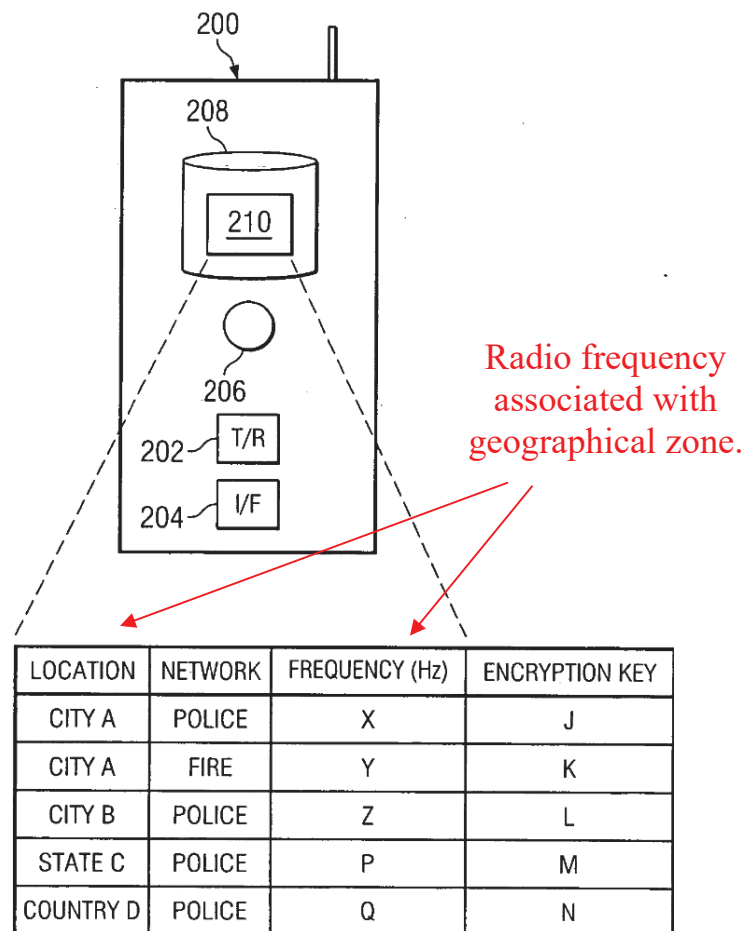
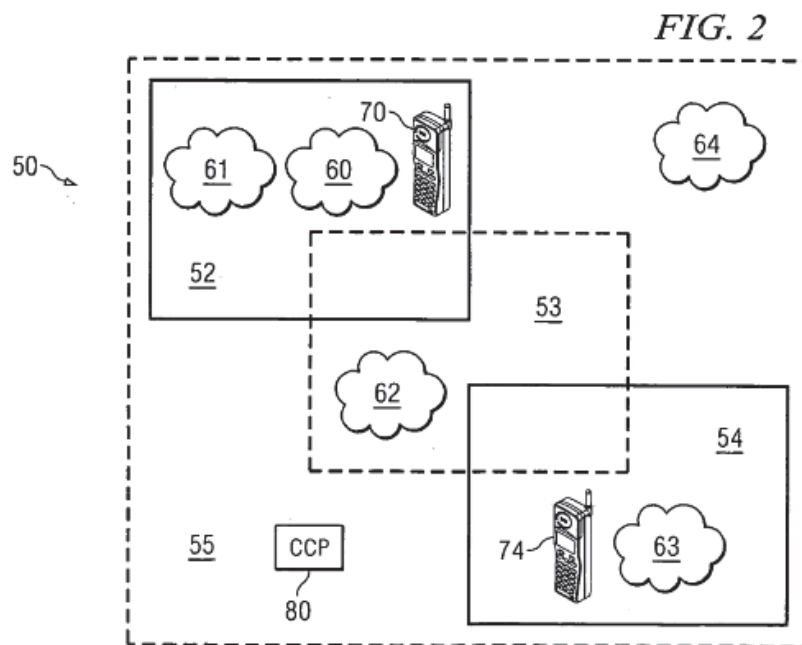


FIG. 4

Ex[1004], FIG. 4.

98. As Shaffer describes, the mobile device stores “radio frequencies” of “communication networks by location.” *Id.*, ¶0046. As shown in FIG. 4 (above), each radio frequency is also specifically associated with a “location” such as City A, City B, State C, or Country D. *Id.*, FIG. 4. Notably, Shaffer explains the locations can also be “buildings” and “campuses,” in addition to municipalities. *Id.*, ¶0027. In FIG. 2 (below), for example, different geographic regions (52, 53, 54, 55) “may correspond to buildings, campuses, municipalities...or any other particular geographical area.” *Id.* Each geographic region may also contain one or more communication networks (60-64), each of which may have different “assigned radio frequenc[ies].” *Id.*, ¶0027; *see also id.*, ¶¶0020-0022, 0026, 0034-0035.



Ex[1004], FIG. 2.

99. Shaffer further discloses that the radio frequencies are provided by the memory of the mobile communication device to a *display* on the user interface of the mobile communication device. For example, Shaffer describes that mobile endpoint 200 has an interface 204 that may be a “*display*, touch screen... or any other suitable interface.” Ex[1004], ¶0044 (emphasis added). The display presents multiple frequencies to the user so that “through interface 204 a user may input instructions regarding adjustment of the end point’s communication settings (*e.g.*, radio frequency, modulation method and encryption key) upon entering a new communication network.” *Id.*, ¶0044; *see also id.*, ¶¶0035-0036 (describing a “pressing of a key stroke” to change endpoint communication setting), ¶¶0003, 0008 (describing, as background, known functionality for using a handbook to look up local frequencies by location). In the example in FIG. 4 above, if a user enters city A, there are two possible frequencies, X and Y. Shaffer explains that those frequencies are presented to the user (*e.g.*, using a touch screen display) for selection by the “pressing” of a touch screen “key stroke.” *Id.*, ¶¶0035-0036, 0044.

100. Displaying the multiple available frequencies on Shaffer’s touch screen for selection by a “key stroke” on a touch screen would at least have been obvious to a POSITA. When there are multiple frequencies available for communication in a particular area, as in Shaffer, and when a user’s device can include a touch screen, as in Shaffer, presenting for selection on the touch screen all available frequencies in an area a user enters would have been one of a finite number of predictable options

for selecting a frequency. Such an implementation uses a known technique (touchscreen display and selection) with known benefits (selection using a single “stroke”) according to its established function and is nothing more than a simple design choice that would have been obvious to a POSITA by August 2008.

d. 1[c]

101. Shaffer-Saylor discloses “*from which a plurality of video feeds associated with the geographic zone are sourced.*” Shaffer-Saylor discloses that each geographic region in Shaffer (e.g., a building or a campus) can also be the source of and associated with a plurality of video feeds. For example, Saylor discloses “video cameras” located in a geographic zone (e.g., a building of a “business”). Ex[1011], 10:32-34, FIG. 10. In particular “an identified location may be monitored by a video or other recording device,” and, if motion is detected, “video clips” maybe sent to a “central security network.” *Id.*, 16:52-17:9; *see also id.*, 11:64-12:6.

e. 1[d]

102. Shaffer discloses “*monitoring a selection of a radio frequency of a plurality of radio frequencies by a user.*” As discussed with respect to limitation 1[b], Shaffer discloses and renders obvious that the frequencies are provided on the display of a mobile communication device for *selection* by the user. For example, Shaffer explains that the display presents frequencies to the user so that “through interface 204 a user may input instructions regarding adjustment of the end point’s

communication settings (e.g., radio frequency, modulation method and encryption key) upon entering a new communication network.” *Id.*, ¶¶0044; *see also id.*, ¶¶0035-0036 (describing a “pressing of a key stroke” to change endpoint communication setting). The user’s selection of frequency is monitored by the processor of the mobile endpoint so that the endpoint can “receive[] and transmit[] voice and other data” with other devices. *Id.*, ¶¶0044; *see also id.*, ¶¶0045-0047. Displaying the multiple available frequencies on Shaffer’s touch screen for selection by a “key stroke” on a touch screen would at least have been obvious to a POSITA, for the reasons described for limitation 1[b].

f. 1[e]

103. Shaffer-Saylor discloses “[1] *identifying at least one video feed by selecting the at least one video feed from the plurality of video feeds associated with the geographic zone, wherein [2] the at least one video feed is associated with the selected communication channel [3] based on a user policy that identifies one or more video feeds that are relevant to the user when the user accesses the selected communication channel.*” For example, the Shaffer-Saylor system identifies a video feed associated with the geographic zone, which is associated with the radio frequency selected by the user. In Shaffer-Saylor, that feed is also associated with the selected multicast IP address (communication channel) based on a user

preferences database entry (user policy) that identifies video feeds relevant to security personnel (user) when they access the communication channel.³

104. First, Saylor’s central security network [1] *identifies and selects a video feed associated with the geographic zone*. For example:

- FIG. 10 (on next page) depicts step 1010 where Saylor’s central security network monitors a specific video feed in an “identified location” of a building (the geographic zone). Ex[1011], 16:52-60, 34:6-10, FIG. 10.
- Steps 1012, 1014, 1016, and 1020, select and identify that feed when a “trigger[]” event occurs, such as “motion.” *Id.*
- In steps 1022 and 1024, a “video clip[]” from that feed is processed to determine whether certain “conditions are met for alarm triggers” or “[n]otifications.” *Id.*, 17:1-5.
- Then in, steps 1026 and 1028, an “image may be automatically transmitted” to recipients. *Id.*, 17:8-9; *see also, e.g., id.*, 34:1-9 (describing that a subscriber can be sent a “video clip” from a camera

³ A POSITA would have understood that the Shaffer-Saylor system would have performed the “monitoring a selection of a communication channel...,” “providing a plurality of radio frequencies...,” and “monitoring a selection of a radio frequency” steps before the “identifying ...” step in various scenarios. For example, security personnel may be located in a scene of an emergency and select a radio frequency and a communication channel associated with that scene before the video feed is identified.

near the front door if the “front door opens” or “when an unrecognized person enters”).

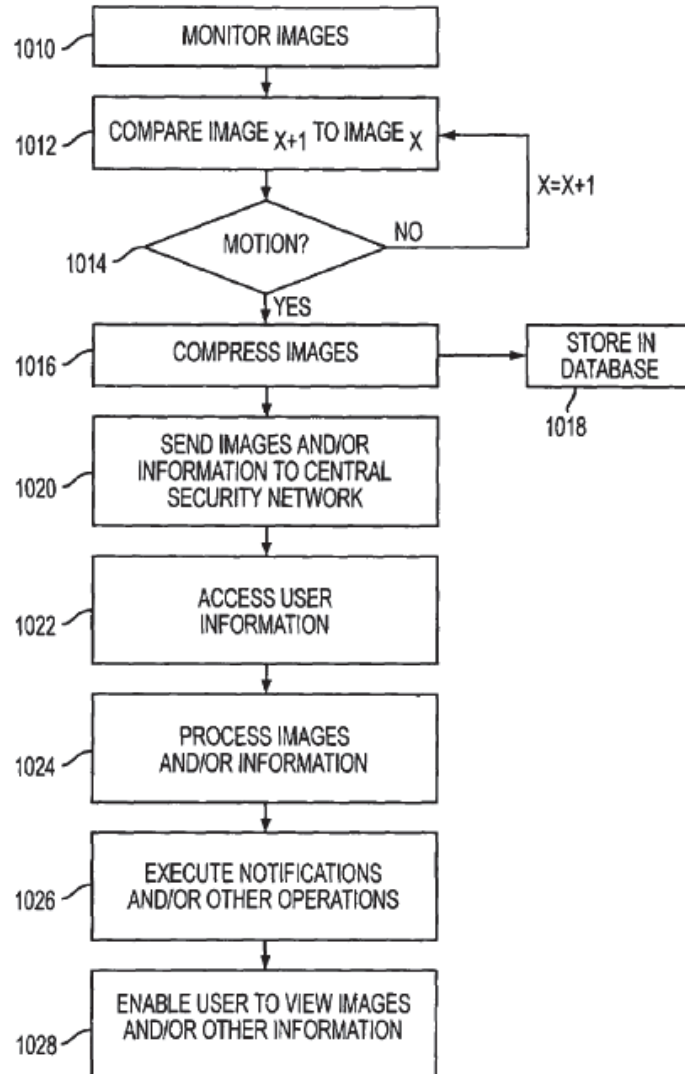


FIG. 10

Ex[1011], FIG. 10.

105. Second, Shaffer-Saylor also accesses a user preferences database that [2] *associates the video feed with the selected communication channel*. Saylor’s

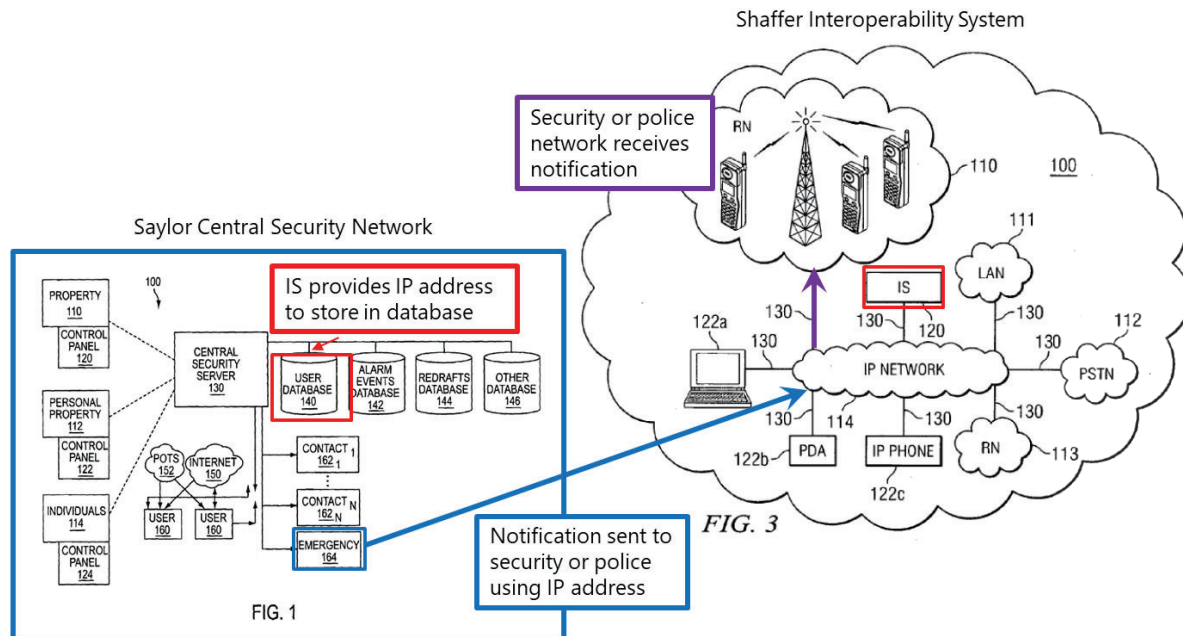
databases already store “relevant information for personalized alarm services.” Ex[1011], 6:9-10. For example, “[u]ser database 140 may contain “user preferences” that may indicate how “different alarm situations that may be detected in various locations or systems may warrant different levels of response” and “[s]pecial instructions” that may “include information to be conveyed to entities reacting to the alarm for a particular location or object.” *Id.*, 8:34-60. Accordingly, when an event occurs (such as motion), the central security network can send relevant information (such as video clips) “via the Internet 150” to “[a]n emergency entity 164.” *Id.*, 6:22-32, 7:40-48, 9:23-29, 11:46-55; *see also id.*, 11:24-28 (identifying mobile devices receiving notifications), 12:34-35 (“the user may specify when emergency dispatch is to occur.”). For example, “the central security network may directly contact a local fire department and provide the location, nature and/or other information related to the emergency.” Ex[1011], 12:17-21.

106. As described in Section IX.A (Shaffer overview), to facilitate these communications, Shaffer’s IS system can assign a multicast IP address to the relevant security forces and provide the IP address to Saylor’s databases for storage. *E.g.*, Ex[1004], ¶¶0039-0040 (describing assigning and storing multicast IP addresses at an endpoint). Accordingly, when an event occurs that requires sending a video clip to security forces, Saylor’s central security network can look up the appropriate multicast address and use the address to send the information to the

security personnel that have selected this communication channel, as shown below.

Id.

Shaffer-Saylor System



Ex[1011], FIG. 1 (annotated); Ex[1004], FIG. 3 (annotated).

107. Finally, Shaffer-Saylor discloses that the association between video feed and communication channel is [3] *based on a user policy that identifies one or more video feeds that are relevant to the user when the user accesses the selected communication channel*. The user policy is the set of preferences stored in Saylor's databases identifying when to notify users (such as security personnel) and what to send them. *See* Ex[1011], 8:34-60, Abstract (describing that user can identify "individuals and entities to be contacted; type of situations to be alerted of and other

relevant security and other information”), 11:48-63 (describing processing alarms at the central security network according to “user-defined conditions” to determine which entity to notify and how to send the notification), 12:26-29. The preferences specifically identify which alarms are relevant to the users (and are designed, for example, to filter out “false alarms”). *Id.*, 12:34-41 (“[T]he user may specify when emergency dispatch is to occur,” such as “at the detection of an alarm situation” or “after a predetermined period of time,” thus “minimizing the penalties and fines associated with false alarms.”). Moreover, a POSITA would have understood in the Shaffer-Saylor combination that users, such as security personnel, receive notifications from Saylor’s central security network from the assigned multicast IP address (communication channel). Accordingly, when a user, such as security personnel, selects a communication channel associated with the multicast IP address, as described in limitation 1[a], the officer can access the transmitted communications, as described in Shaffer. Ex[1004], ¶¶0040-0042.

g. 1[f]

108. Shaffer-Saylor discloses that “*the one or more video feeds being independent of the selected communication channel.*”⁴ For example, the ’830 patent

⁴ It is my understanding that Petitioner has taken the position that this term is indefinite in the district court litigation. I have not taken a position on that issue. Rather, I compare Shaffer-Saylor to the ’830 patent specification without conceding that this term is definite and satisfies 35 U.S.C. §112.

specification describes “independent video surveillance cameras” as those installed at “public and non-public locations.” Ex[1001], 3:17-21. Shaffer-Saylor describes the same type of video feeds.

109. For example, the video feed selected by Saylor’s central security network are video surveillance cameras independently installed at a building or home and independent of the security forces communication channel. Ex[1011], 10:31-34, 10:43-44 (“[T]he central security network of the present invention may also support users who already have an alarm system in their home, or want to buy a system from an alarm dealer and have it professionally installed.”). It would have been obvious to a POSITA that in the combined system, Saylor’s configurable central security network can associate the video feeds with the communication channel based on a user’s preferences and the occurrence of relevant events triggering the forwarding of the video feeds to the multicast channel. *See* Section X.A.1 (combination overview); Ground 1, limitation 1[e].

h. 1[g]

110. Shaffer-Saylor discloses “*providing access to the identified at least one video feed to the mobile communication device based on the user policy.*” For example, Saylor’s central security network sends video clips to mobile devices of security forces (users) based on the user policy stored in databases. Ex[1011], 11:24-28 (notifications can be to cell phones, pagers, etc.), 11:56-63, 35:15-33. For example, when a particular event in a particular building occurs, the user policy

describes what notifications are sent and to whom. Ex[1011], 6:9-32, 8:34-60, 9:22-28. When a notification is sent to the selected communication channel (multicast address), the group members can access it. Ex[1004], ¶0039 (“IS 120 may communicate with endpoints using multicast IP addresses”).

3. Claim 2

111. Shaffer-Saylor discloses “[t]he method of claim 1, wherein providing access comprises associating the identified at least one video feed with the mobile communication device in a database that is used to manage access to independent video feeds in a network based on audio communication channels that are selected by communication devices in the network.” In the ’830 patent, in addition to associating video feeds and communication channels, the disclosed database can associate video feeds with users based on, *e.g.*, user “locations.” Ex[1001], 8:22-33. Shaffer-Saylor renders obvious the same type of association.

112. For example, as I explained for limitation 1[e], in Shaffer-Saylor, Saylor’s central security network includes a database that associates video feeds with the user’s selected multicast IP address (which is an audio communication channel). Ex[1004], ¶0039 (describing audio communications); Ex[1003], p. 240 (examiner noting that a prior art channel “is also an audio channel because it has audio parameters as well as video”); *see* Ground 1, limitation 1[e].

113. It would have been obvious to also associate video feeds with the particular user selecting the channel based on the user’s location. In particular,

Saylor discloses that the system can be configured to send notifications to users based on a defined area. Ex[1011], 5:49. Shaffer also discloses that the IS can act as a centralized communication control post (CCP) to track GPS information of users. Ex[1004], ¶¶0016, 0041. It would have been obvious to a POSITA that Shaffer's IS could provide the tracked location information to Saylor's central security network, so that the central security network can implement a user policy of sending notifications based on location. In this scenario, if an event occurs, Saylor's database can check to see if any user associated with the relevant audio communication channel is within the designated location. If so, Saylor's central security network can notify the users on the communication channel of the event, by sending a video clip. This would have been a simple and predictable modification to the Shaffer-Saylor system in accordance with and motivated by how both Shaffer and Saylor are already designed and would be reasonably expected to succeed.

4. Claim 3

a. 3[a]

114. Shaffer-Saylor discloses “*accessing a database to identify a plurality of members of an emergency response team that includes the user of the mobile communication device.*” As described for claim 2, Saylor's database may contain location information to identify members of an emergency response team associated with a communication channel. *See* Ground 1, claim 2.

b. 3[b]

115. Shaffer-Saylor discloses “*presenting a plurality of available video feeds on the display of the mobile communication device, the plurality of available video feeds including video streams associated with the plurality of members of the emergency response team.*” As described for limitation 1[e], video streams may be associated with a communication channel, including for an emergency response team. *See* Ground 1, limitation 1[e]. Moreover, as described in Shaffer, each mobile device can support video communication. Ex[1004], ¶0025. By 2008, it would have been obvious that a mobile device could have displayed multiple video feeds from a security network, including via thumbnails or a drop-down menu for selection—either of which was well-known user interface technology for a mobile device. A POSITA would have been motivated to present an emergency response team with a plurality of video feeds associated with an alarm trigger from a Saylor security network to enable the team to understand the alarming situation.

5. Claim 4

116. For the reasons described for limitation 1[f], Shaffer-Saylor discloses “*the method of claim 3, wherein the available video feeds are sourced from a group of surveillance cameras.*” *See* Ground 1, limitation 1[f].

6. Claim 5

117. Shaffer renders obvious “[t]he method of claim 1, wherein the communication channel is a Push-To-Talk (PTT) channel in a PTT communication

network and the mobile communication device is a PTT radio.” Shaffer expressly discloses a push-to-talk (PTT) communication channel in a PTT communication network, where the device is a PTT radio. Ex[1004], ¶0037 (“A radio network may support communication among portable mobile station endpoints, such as land mobile radios (LMRs), using ... push-to-talk (PTT)”). Moreover, Shaffer specifically describes a selection mechanism that allows the user of a mobile endpoint to access a communication channel such as a multicast address “manually with, for example, a single key stroke...” Ex[1004], ¶0040.

118. A POSITA would have been familiar with PTT radios and corresponding PTT channels and would have understood the PTT channel is a channel for transmitting half-duplex communications in a PTT network and that a PTT key would have been a utilization of a “single key stroke” as described. Indeed, before the ’830 patent, numerous systems had disclosed a PTT key to transmit and receive IP messages as half-duplex communications in a PTT network. For example, Gogic describes implementing “half-duplex” PTT communication channels in mobile phones and handsets that transmit IP messages. Ex[1011], ¶¶0026-0027; *see also, e.g.*, Ex[1013], ¶¶0022-0024, 0041, 0048; *see also* Ex[1003], pp. 135, 189, 243, 290 (Examiner noting that a POSITA would have “recognize[d] PTT as a widely used type of communication device where the advantage is to initiate and send data with just a push of a key” including devices can be used in “video communication”).

7. Claim 7

a. 7[a]

119. Shaffer-Saylor renders obvious “[t]he method of claim 1, further comprising: monitoring an audio signal generated in proximity to a video camera providing a first video feed included in the identified at least one video feed.” For example, Saylor discloses that the central security network may include various types of sensors, including “sound” sensors. Ex[1011], 14:17-20. It would have been obvious to locate the “sound” sensor in “proximity” to the video camera providing video clip notifications. *See* Ground 1, limitation 1[e].

120. Sound sensors (or audio sensors) were well known at the time and it would have been obvious to place the sensor nearby a camera that is in an area of interest. *See* Section VIII.D; Ex[1008]. For example, Saylor describes that the video camera may monitor a specific area, such as the front door of a building. Ex[1011], 16:41-51. A camera near the front door can identify motion indicating possible unknown entrants or break-ins. *Id.* It would have been obvious to a POSITA that a “sound” sensor could also be installed by the front door to detect breaking glass, or another sign of a break-in, in addition to movement.

b. 7[b]

121. Shaffer-Saylor renders obvious “processing the audio signal to identify an audio event.” For the reasons described for limitation 7[a] (above), it would have

been obvious for Saylor's central security network to process the output of the sound sensor, to determine if there was an audio event, such as breaking glass.

c. 7[c]

122. Shaffer-Saylor renders obvious “*based on the identified audio event, providing access to the first video feed to a plurality of mobile communication devices in a group of mobile communication devices, the group of mobile communication devices including the mobile communication device of the user corresponding to the selection of the communication channel.*” Saylor's central security network sends a notification, including one with a video clip, to every member of a particular group of users upon the occurrence of events. Ex[1011], 17:1-9, 5:58-62, 8:54-60. It would have been obvious to a POSITA that Saylor's central security network could implement a rule to send to a video clip from a camera near the front door to security personnel when a sound of breaking glass is detected near the front door. Indeed, this is an obvious design choice that would have enabled timely delivery of relevant information. In this scenario, the group of mobile communication devices (members of security personnel) would include any mobile users selecting the communication channel for security personnel. *See also* limitation 1[a] in this Ground.

8. Claim 8

123. Shaffer discloses “[t]he method of claim 1, wherein the communication channel is associated with a Virtual Talk Group (VTG).” As described for limitation

1[a], the selected communication channel (*e.g.*, multicast address) in Shaffer is for a virtual talk group, which communicates using the IP multicast address. Ex[1004], ¶¶0027, 0034, 0037-0039; *see* Ground 1, limitation 1[a].

9. Claim 9

124. Shaffer-Saylor discloses “[*t*]he method of claim 1, wherein providing access to the video feeds depends on a video association policy.” The ’830 patent does not use the term “video association policy” but does describe a “video feed association module” that “associate[s] one or more video feeds with one or more communication channels.” Ex[1001], 4:29-33. The specification also describes policies that “govern[] the association of video streams with communication channels and VTGs,” as well as policies that identify “available feeds” based on a “particular role” associated with the user. *Id.*, 9:45-48, 10:61-65; *see also id.*, 6:3-17, 8:16-33.

125. In Shaffer-Saylor, the preferences and rules stored in the central security system databases associate video feeds with communication channels (as described for limitation 1[e]) and disclose the same types of policies as described in the ’830 patent. For example, in the combined system, the databases store rules and preferences that associate video streams with communication channels (*e.g.*, multicast IP addresses) for users with particular roles (*e.g.*, security or police). *See also* Section X.A.1 (combination overview); Ground 1, limitation 1[e]; Ex[1004], ¶¶0039-0040; Ex[1011], 9:22-28, 11:67-12:6, 13:51-54.

10. Claim 10

126. For the same reasons described for claim 9, Shaffer-Saylor discloses “[t]he method of claim 9, wherein the video association policy includes a role of the user defined in a policy database.”

11. Claim 11

a. 11[a]

127. Shaffer-Saylor discloses “[t]he method of claim 1, further comprising: identifying a geographical location of the user’s mobile communication device using a Global Positioning System.” For example, Shaffer expressly describes using GPS for identifying a geographical location of a user’s mobile communication device. E.g., Ex[1004], ¶¶0040-0041, 0044, 0046-0047.

b. 11[b]

128. Shaffer-Saylor discloses “identifying that the at least one video feed is associated with the geographical location; associating the at least one video feed with other mobile communication devices set to the same channel as the user’s mobile communication device; and automatically rendering access to the at least one video feed to the other mobile communication devices.”

129. Shaffer-Saylor discloses that each geographic location in Shaffer (e.g., a building or a campus) can also be the source of a plurality of video feeds. For example, Saylor discloses “video cameras” located in a geographic area (e.g., a

building of a “business”).⁵ Ex[1011], 10:32-34, FIG. 10. Further, the video feeds in that geographical location are associated with a communication channel, such as a multicast IP address associated with security forces as described in limitation 1[e]. *See* Ground 1, limitation 1[e]. Any device accessing that multicast IP address (including other mobile devices) will automatically have access to the video feeds associated with that channel. *Id.*

12. Claim 12

130. Shaffer-Saylor discloses “[t]he method of claim 1, wherein the selected communication channel is a selected audio communication channel that is selected from a plurality of audio communication channels, the at least one video feed being associated with the selected audio communication channel, and the user policy identifying the one or more video feeds that are relevant to the user when the user accesses the selected audio communication channel.”

131. As discussed for limitation 1[a] and claim 2, Shaffer discloses that the selected communication channel can be an “audio communication channel,” which the user selects from a plurality of such channels as the user moves from one location to another. Ground 1, limitation 1[a], claim 2; Ex[1004], ¶0040 (describing different multicast IP addresses that can be updated for different regions). As also discussed

⁵ As described for claim 2, it would also have been obvious for the database in Shaffer to associate the video feed with the particular user at the location. *See* Claim 2 in this Ground.

for limitation 1[e] and 1[g], Shaffer-Saylor discloses a user policy stored in a database that identifies the relevant video feeds to a user of a particular group, associates the relevant video feeds with the audio communication channel (multicast IP address) for that group, and provides those feeds to the user when the user accesses that channel. Section X.A.1 (combination overview); *see* Ground 1 limitations 1[e], 1[g].

13. Claim 13

132. Shaffer-Saylor discloses “[t]he method of claim 1, wherein the user policy associates the at least one video feed with the selected communication channel based on the geographic zone from which the at least one video feed is sourced and a device group that includes the user’s communication device.”

133. As described for claims 1 and 12, Shaffer-Saylor discloses a user policy that associates at least one video feed with the selected communication channel (multicast channel for local police). Section X.A.1 (combination overview); Ground 1 limitation 1[e], claim 12.

134. Moreover, as described for claims 2 and 9, Shaffer-Saylor discloses or renders obvious that the user policy can be based on the geographic zone from which the at least one video feed is sourced (*e.g.*, a building in the jurisdiction of security forces) and the device group that includes the user’s device (*e.g.*, group with the role of security forces). Ex[1011], 10:62-67 (alerts based on geography); Section X.A.1 (combination overview); Ground 1 limitation 1[e], claims 2 and 9.

14. Claim 14

135. Shaffer-Saylor renders obvious “[t]he method of claim 1, wherein the user policy associates the at least one video feed with the selected communication channel by comparing a first geographic zone from which the at least one video feed is sourced with a second geographic zone corresponding to a location of the user’s communication device.” As described for claim 2, it would have been obvious for Saylor’s database to track the location of users and compare user location with the location of a device providing a video feed before associating the video feed with the communication channel including that user. *See* Ground 1, claim 2.

15. Independent Claim 15

a. 15[pre]:

136. If the preamble is limiting, Shaffer-Saylor discloses “[a]n apparatus.” *E.g.*, Ex[1004], Abstract, ¶0001.

b. 15[a]

137. Shaffer-Saylor discloses “at least one processor.” For example, Shaffer describes a processor in the mobile communication device, Ex[1004], ¶¶0044-0045, 0048, and in the IS, *id.*, ¶¶0038, 0048. Saylor also discloses a server for “processing” alarm information in the central security network. Ex[1011], 35:45-48.

c. 15[b]

138. Shaffer-Saylor discloses “a memory in communication with the at least one processor, the memory being configured to store a video stream association

module executable by the at least one processor, the video stream association module being executed by the at least one processor to cause operations to be performed.”

139. Shaffer discloses a memory at the mobile communication device and the IS for communicating with the processor. Ex[1004], ¶¶0031, 0036, 0038, 0040, 0044-0046, 0048. Saylor likewise discloses a memory, including databases, communicating with the processor in the central security network. Ex[1011], FIG. 1, 6:9-32, 8:34-9:21.

140. Shaffer-Saylor also discloses a video stream association module that causes the recited operations in 15[c]-15[i] to be performed. To the extent a “video stream association module” is not construed as a means-plus-function limitation, it is disclosed for the same reasons described for claim 1, where the memory in Shaffer’s mobile device and IS and Saylor’s central security network and databases store a video stream association module for performing the recited operations. *See* Ex[1001], 4:34-39 (video feed association module may be at a “central node and/or distributed nodes”), 3:21-27.

141. To the extent the Board adopts Petitioner’s interpretation of “video stream association module” as a means-plus-function term with the following corresponding functions and structure, it is also disclosed or rendered obvious by Shaffer-Saylor. *See* Section VII.

Elements	Function and Structure
15[b] “video stream association module”	<u>Function</u>: monitoring a selection of a communication channel..., providing a plurality of radio frequencies on a display..., monitoring a selection of a radio frequency..., identifying at least one video feed..., providing access to the identified at least one video feed... <u>Structure</u>: “a variety of software applications and/or hardware that can monitor and process communications between the communication devices,” as described at Ex[1001], 3:46-49 and FIGs. 2-4, 8-9, 11 and associated text.⁶

142. In Shaffer-Saylor, the video stream association module includes (1) Shaffer’s mobile communication device, (2) Shaffer’s IS, and (3) Saylor’s central security server and databases. The functions of these elements disclose each of the functions of the video stream association module (which are the same functions in claim 1), as above with respect to limitations 1[a]-1[g].

143. In addition, Shaffer-Saylor discloses each element of the “video feed association module” described in the ’830 patent, including:

- a “channel identifier module” and a “graphic user interface module” for monitoring a selection of a communication channel, including on a display of a mobile communication device. Ex[1001], FIGs. 2, 8, 9. For example, as

⁶ I cite to the figures without conceding that these claim elements satisfy the definiteness requirement of 35 U.S.C. §112.

described for limitation 1[a], Shaffer discloses a mobile communication device user interface for selecting a communication channel on a display and setting the device to that channel. Ground 1, limitation 1[a].

- a user interface for providing a plurality of frequencies on a display... and monitoring a selection of a radio frequency.... Ex[1001], FIG. 9. As described for limitations 1[b] and 1[d], Shaffer provides a user interface to display frequencies to a user and to allow a user to select one of the frequencies. Ground 1 limitations 1[b], 1[d]. Although Shaffer does not expressly disclose that the frequencies are displayed as a “drop-down menu” (*see* Ex[1001], 9:6-65, FIG. 9), it would have been obvious to arrange the frequencies as a drop-down menu as disclosed in FIG. 9. Indeed, Shaffer discloses that there can be multiple frequencies for each communication channel. Ex[1004], ¶¶0038 (describing that IS may “map radio frequencies” to “IP addresses”), 0040 (“The multicast addresses in the IS 120 are mapped into a set of communication radio frequencies that are used by the networks...”). And Shaffer describes that the user interface can be a “touch screen.” *Id.*, ¶¶0034, 0044. A drop-down menu would have been an obvious design choice for a user interface when multiple communication parameters (frequencies) can be mapped to other parameters such as multicast IP addresses (communication channels).
- a “video feed identifier module” and a “policy module” for identifying at least

one video feed..., including as described in FIGs. 3-4 of the '830 patent for associating a communication channel with a video feed based on a policy. Ex[1001], FIGs. 2, 3-4, 4:61-67. For example, as described for limitation 1[e], Shaffer-Saylor discloses a “database” that maps output from sensor devices (including video feeds) to multicast IP addresses (communication channels) based on rules and preferences set up by a user (user policy). Ground 1, limitation 1[e].

- a “communication module” for providing access to the identified at least one video feed... Ex[1001], FIG. 2. As described for limitations 1[e] and 1[g], Shaffer-Saylor provides a mechanism for transmitting video clips from the central security network to users set to a communication channel. Ground 1, limitations 1[e], 1[g].

d. 15[c]-[i]

144. For the reasons provided above and for claim 1, a POSITA would have found these limitations obvious in view of Shaffer-Saylor.

16. Dependent Claim 16

145. For the reasons described for claim 2, Shaffer-Saylor disclose the additional limitations of claim 16.

17. Dependent Claim 17

146. For the reasons described for claim 3, Shaffer-Saylor disclose the additional limitations of claim 17.

18. Dependent Claim 18

147. For the reasons described for claim 4, Shaffer-Saylor disclose the additional limitations of claim 18.

19. Dependent Claim 19

148. For the reasons described for claim 5, Shaffer-Saylor disclose the additional limitations of claim 19.

20. Dependent Claim 21

149. For the reasons described for claim 7, Shaffer-Saylor disclose the additional limitations of claim 21.

21. Dependent Claim 22

150. For the reasons described for claim 8, Shaffer-Saylor disclose the additional limitations of claim 22.

22. Dependent Claim 23

151. For the reasons described for claims 9 and 10, Shaffer-Saylor disclose the additional limitations of claim 23.

23. Dependent Claim 24

152. For the reasons described for claim 11, Shaffer-Saylor disclose the additional limitations of claim 24.

B. Ground 2: Claims 1-5, 8-19, and 22-24 are obvious over Gogic in view of Opitz.

153. It is my opinion that Gogic discloses each and every limitation of claims 1-5, 8-19, and 22-24, except the limitation requiring radio frequencies displayed on

a mobile device and selected by a user. But Gogic, which discloses mobile devices communicating with a radio base station in a particular area, suggests these limitations to a POSITA. Specifically, presenting and allowing selection of frequencies on a display was one of a finite number of known, predictable solutions in the art for connecting a radio to a base station. Opitz discloses one example of frequency display/selection for making this connection, and the combination of Gogic with this well-known functionality renders obvious claims 1-5, 8-19, and 22-24, as further described in with respect to limitations 1[b] and 1[d], below.

1. Claim 1

a. 1[pre]

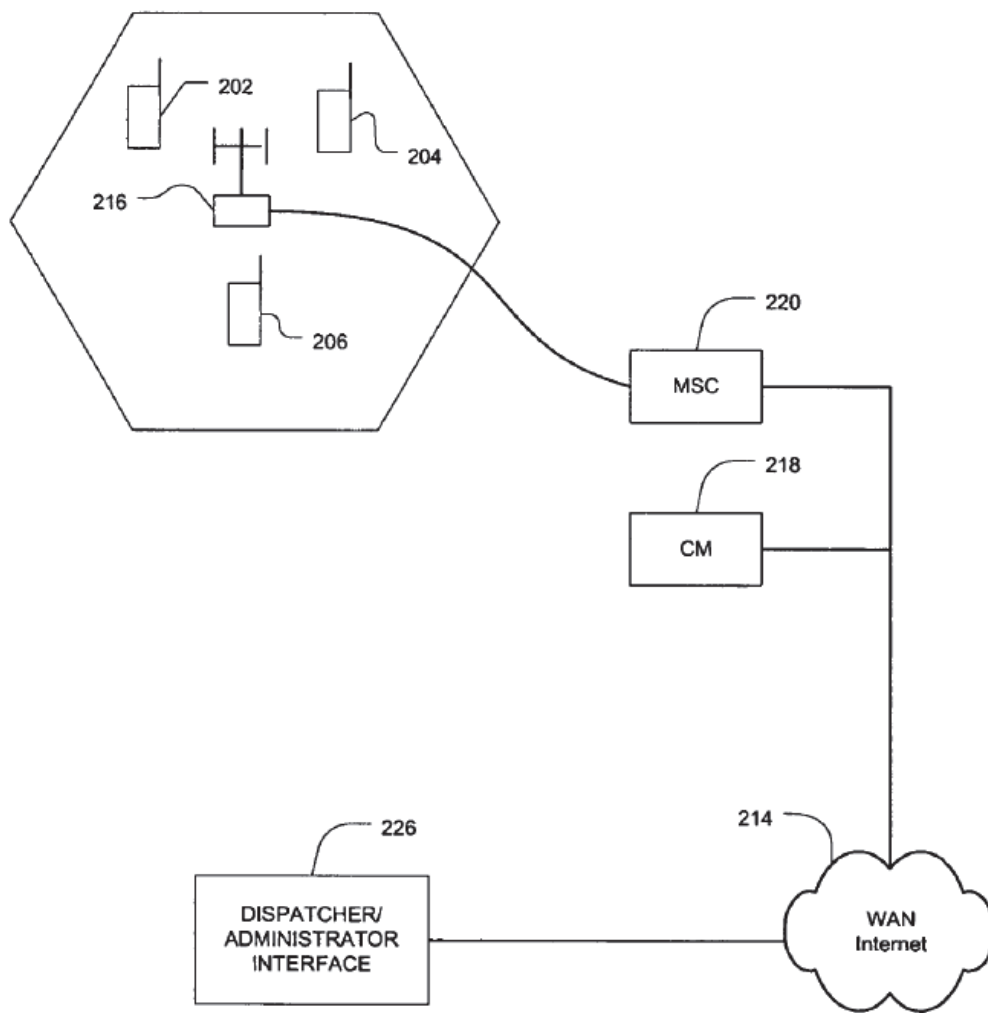
154. If the preamble is limiting, Gogic discloses “[a] *method.*” Ex[1006], Abstract.

b. 1[a]

155. Gogic discloses “*monitoring a selection of a communication channel by a user of a mobile communication device.*” Gogic, for example, discloses monitoring selection of a communication channel of an “ad-hoc” group by a user of a mobile communication device.

156. In particular, Gogic describes a *communication channel* for an ad-hoc group. For instance, as shown in FIG. 2 below, Gogic discloses communication devices (“CDs”) 202, 204, 206, where the CDs can be mobile devices such as “terrestrial wireless telephones,” e.g., “CD 202 could comprise a wireless terrestrial

telephone equipped with a video camera and display.” Ex[1006], ¶0035. Gogic also describes that the CDs can be formed into an ad-hoc “group” or “net” that “denotes a collection of communication device users authorized to communicate with each other.” *Id.*, ¶¶0034-0035. Each group has a designated channel, for example, over the “Internet” or over “a dedicated forward channel” in a radio system “for broadcasting information from each group member to the other group members.” *Id.*, ¶0045. Accordingly, “[e]ach group member receives communications from other group members over the common channel.” *Id.*



Ex[1006], FIG. 2.

157. The user of a mobile CD also *selects* a communication channel to set the CD to that channel, for example, through “activation of a push-to-talk (PTT) key or switch.” *Id.*, ¶0042. For instance, “[w]hen a user of a CD in communication system 200 desires to transmit information to other group members, the push-to-talk switch located on the CD is depressed,” selecting the channel over which other group members can receive communications. *Id.*, ¶¶0042, 0045. As Gogic describes, PTT

communications involve “conversing on half-duplex communication lines by pushing a button to allow voice communication to be transmitted and releasing the button to allow voice communication to be received.” *Id.*, ¶0026.

158. Finally, Gogic discloses that the selection of the communication channel by the user of a CD is monitored by the “communication manager 218” (CM 218), which receives the CD’s request to communicate on the communication channel and determines whether any other “group member is currently assigned the transmission privilege.” *Id.*, ¶0042. If not, “the requesting user is granted (*e.g.*, floor grant) the transmission privilege” over the communication channel. *Id.*

c. 1[b]

159. Gogic in view of Opitz discloses “providing a plurality of radio frequencies on a display of the mobile communication device, each radio frequency being associated with a geographical zone.”

160. As shown in FIG. 2 of Gogic (above), Gogic discloses that CDs transmit and receive communication signals to and from a base station (element 216) under control of the communication manager (218). Ex[1006], ¶¶0037, 0043, 0045, 0046. Indeed, a CD’s connection to a base station is a prerequisite to joining an ad-hoc group; to form an ad-hoc group, the base station, as directed by the CM, transmits a “broad or indiscriminant [sic] or generalized invitation to join a group to all recipient CDs” with specific conditions for joining the group. *See* Ex[1006], ¶0060. In Gogic, base stations are also associated with the geographic zone in which

they are physically located. *See, e.g., id.*, ¶0031, FIG. 1 (describing “typical wireless communication system” with many base stations in neighboring zones). For example, Gogic describes that a user’s communication with a “base station” can be used to determine the user’s “location.” *Id.*, ¶0058. Accordingly, Gogic discloses that CDs connect to a base station in a particular area, but Gogic does not expressly disclose how the CDs make that initial connection (which, again, is a prerequisite to the ad-hoc group formation central to Gogic’s disclosure).

161. A POSITA would have understood that, by the priority date of the ’830 patent, there were a finite number of predictable options for selecting a radio frequency for connecting a radio to a base station. *Id.* For example, a user could manually turn a knob to select a radio frequency or a radio could automatically select a radio frequency. Opitz describes one such known example—namely, displaying available radio frequencies on the display of a mobile communication device and allowing a user of the device to select one of those frequencies, as recited in the Challenged Claims.

162. Specifically, the Opitz communication system depicted below in FIG. 1 (shown after paragraph 163) shows base stations (transmitters 104 and 106) for transmitting radio signals (“e.g., police, fire, ambulance, weather, aviation, marine, or amateur radio”) to users (e.g., vehicle radio user 110) in two different geographic regions (100 and 102). Ex[1007], 2:20-31; FIG. 1. A POSITA would have understood the radio signals are associated with a geographical area. This is because,

as I described in the Knowledge of a POSITA section above, base stations are located in particular geographic areas and they provide communications over an area proximal to the location of the base station. These base stations provide particular radio frequencies in order to avoid communication interference with other base nearby base stations.

163. In the FIG. 1 example on the next page, as the vehicle radio user 110 “approaches [a] certain geographic region[],” the vehicle “begins receiving signals” from the base stations (transmitters) in that region. Ex[1007], 3:50-62. The vehicle’s radio also includes “scanning” functionality to scan the frequencies provided by these base stations as well as “a display 248” that “displays identification data corresponding to the channel being monitored.” *Id.*, 5:3-5. The displayed information specifically includes “frequency of the transmission,” as well as other “identification data,” including “name of the transmitting party” and the “usage type of the transmission,” where “usage types” refer to “police frequencies, airport frequencies, emergency medical service frequencies, fire department frequencies, public service agency frequencies, local business frequencies or combinations thereof.” *Id.*, 5:3-7, 7:2-7. Moreover, Opitz’s describes that the display allows a user to “expressly select from the available channels those channels he or she wishes to scan.” *Id.*, 5:10-15.

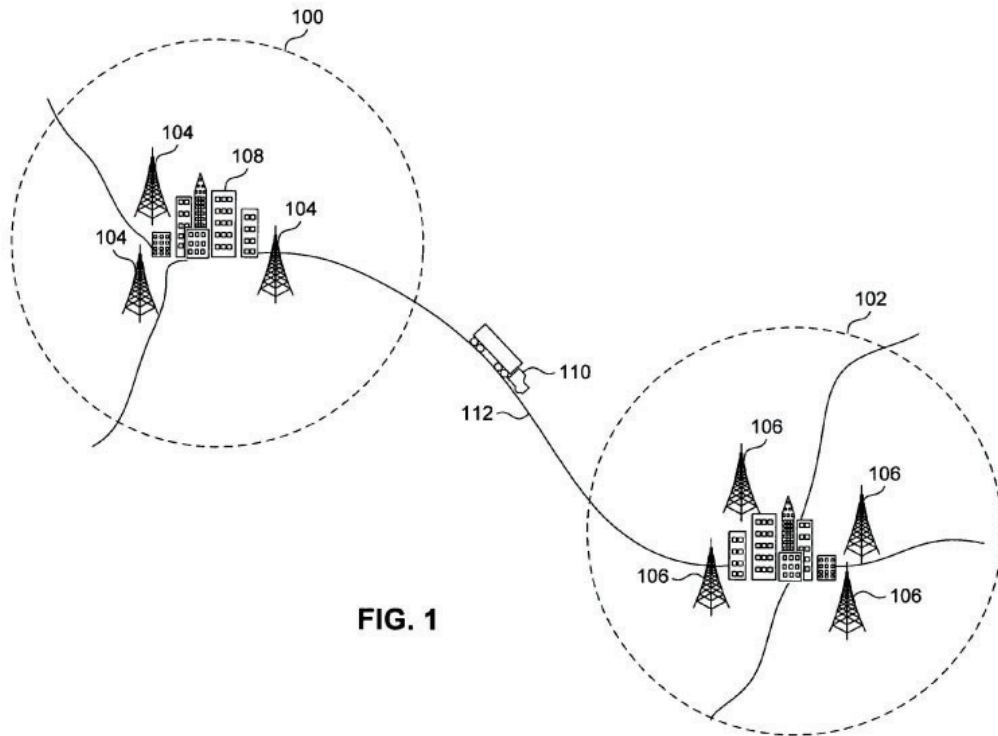


FIG. 1

Ex[1007], FIG. 1.

164. It would have been obvious to implement Gogic's CDs with the frequency display and selection in Opitz's mobile radio, and a POSITA could have done so with a reasonable expectation of success. As explained, Gogic's formation of ad-hoc groups requires each CD to connect to a base station. Ex[1006], FIG. 4; Section IX.C (Gogic overview). Opitz's method of frequency display and selection is one of a finite number of obvious ways to accomplish this. Using a display to present frequencies and to allow a user to select one of them had been known for decades by the time of the '830 patent—and used, for example, by anyone with a

basic car radio. *Id.*; Ex[1012], FIG. 3 (depicting in patent filed in 1990 a display on a car radio of geography and corresponding frequency of a station, which can be adjusted via knobs and tuners on the display).

165. A POSITA would have been particularly motivated to look to Opitz for a suitable implementation because Opitz, like Gogic, discloses a system relating to “emergency communication situations” in which a user desires to monitor and communicate with specific groups in specific locations, such as “[p]olice, [e]mergency [c]rews, [f]ire [d]ept. personnel, etc.” Ex[1006], ¶¶0003, 0056; Ex[1007], 3:3-4 (describing “[m]unicipal police, fire and rescue communications channels”), 11:52-57-67 (monitoring an “emergency”). Gogic’s CDs communicate via base stations, just like the scanning radios in Opitz. Ex[1006], ¶¶0043-0045, FIG. 2; Ex[1007], 2:40-44, FIGs. 1-2. Gogic’s CDs are mobile and can move between base station locations, just like the scanning radios in Opitz. Ex[1006], ¶¶0057-58 (describing determination of whether a mobile CD is in proximity to a “servicing base station”); Ex[1007], 2:40-58, FIGs. 1-2. A POSITA would have recognized that Opitz’s techniques are suitable for application in Gogic’s system and would provide the beneficial functionality disclosed in Opitz. Specifically, Opitz enables a user in “emergency communication situations” to monitor and communicate with specific groups in specific locations, such as police, emergency crews, and fire department personnel.

166. A POSITA would have had a reasonable expectation of success in implementing Gogic's CDs with the known frequency display and selection disclosed in Opitz's mobile radio. As previously detailed, the concept of a mobile radio displaying frequencies to a user associated with base stations in particular geographic regions had been known for decades, for example, to users of AM/FM radios moving between radio station locations. A POSITA would have recognized that Gogic's CDs could readily accommodate display and selection of frequency information for a geographic zone associated with a base station. *E.g.*, Ex[1006], ¶0035. It would have been obvious to utilize a known scanning radio, as described in Opitz, with Gogic's system (which is not limited to a particular type of CD), such that the radio could detect and display available frequencies thereby allowing a user to select the particular "transmitting party" and "usage type" of interest.

d. 1[c]

167. Gogic discloses "*from which a plurality of video feeds associated with the geographic zone are sourced.*" Gogic, for example, describes that the CDs "may comprise wireless video cameras" or telephones "equipped with a video camera" and can source "real-time" "video data." Ex[1006], ¶0035; *see also id.*, ¶0025 (describing invention as applicable to "real-time data" including "video data"). And, as described for limitation 1[b], in Gogic each base station is associated with a geographic zone such that each video feed from a CD connected to the base station is also associated with the geographic zone. *See, e.g.*, Ex[1006], ¶¶0037, 0043, 0045,

0046; *see also id.*, ¶0031, FIG. 1 (describing “typical wireless communication system” with many base stations in neighboring zones); *id.*, ¶0058 (describing that a user’s communication with a “base station” can be used to determine the user’s “location”).

e. 1[d]

168. Gogic in view of Opitz discloses “*monitoring a selection of a radio frequency of the plurality of radio frequencies by the user.*” For the same reasons described for limitation 1[b], Gogic in view of Opitz renders obvious a mobile communication device that monitors the selection of a radio frequency on a display by a user. *See* Ground 2, limitation 1[b]. As described, Gogic in view of Opitz discloses that a vehicle’s radio can include “scanning” functionality to scan the frequencies provided by nearby base stations as well as “a display 248” that “displays identification data corresponding to the channel being monitored.” Ex[1007], 5:3-5. The displayed information specifically includes “frequency of the transmission.” *Id.*, 5:3-7, 7:2-7. Moreover, Opitz’s describes that the display allows a user to “expressly select from the available channels those channels he or she wishes to scan.” *Id.*, 5:10-15. It would have been obvious to combine Gogic and Opitz for the reasons described in limitation 1[b].

f. 1[e]

169. Gogic discloses “[1] *identifying at least one video feed by selecting the at least one video feed from the plurality of video feeds associated with the*

geographic zone, wherein [2] the at least one video feed is associated with the selected communication channel [3] based on a user policy that identifies one or more video feeds that are relevant to the user when the user accesses the selected communication channel.”

170. First, Gogic’s system (including, for example, CM 218) forms an ad-hoc group of CDs that identifies and selects at least one video feed (at least one CD, which can have video streaming capability, *see* Ground 2, limitation 1[c]) from the plurality of video feeds (CDs) in the identified geographic zone (the location of the base station to which the CDs are connected).⁷ CM 218 “controls formation” of an “ad-hoc group” amongst all the CDs at a base station based on “location-based membership criteria” and the roles of the CDs (*e.g.*, whether they are for “authorized and trained persons” such as police and emergency crews). Ex[1006], ¶0056. For example, CM 218 can form an “ad-hoc group in response to an emergency notification” based on “proximity to a designated location” within the base station coverage area (*id.*, ¶0057) such as “a location centerpoint and an acceptable radius” or “perimeter locations,” *id.*, ¶0058. Because the ad-hoc group includes video feeds and is a subset of video feeds within the geographic location of the base station, CM

⁷ It would have been obvious that “monitoring a selection of a communication channel...,” “providing a plurality of radio frequencies...,” and “monitoring a selection of a radio frequency” steps would be performed before the “identifying ...” step.” For example, security personnel may be located in a scene of an emergency and select a radio frequency and a communication channel associated with that scene before a CD providing a video feed joins the group.

218 identifies only a subset of video feeds within the overall geographic zone for the base station. *Id.*, ¶0059.

171. Second, the at least one video feed can be identified by CM 218 and associated with the selected communication channel based on a user policy. In particular, the user policy in Gogic is the “group membership location criteria,” *e.g.*, a policy allowing users to join an ad-hoc group only if they are within a certain area. *Id.*, ¶0062. As shown in FIG. 4, for example, CM 218 sends a message (406) directing a base station (MSC/BS_N 408) to implement the user policy by sending an invitation (420) to all CDs in its service area (412, 414, 416). *Id.*, ¶¶0060-0061. The invitation includes the “location criteria” (user policy) for defining an ad-hoc group. *Id.* The CDs receiving the invitation only have the “right to accept the invitation” “conditional upon the CD qualifying according to the location criteria” (user policy). *Id.*, ¶0061. The subgroup of CDs that make up the ad-hoc group based on the user policy is also associated with the selected communication channel (the channel selected by the user associated with the ad-hoc group, *see* limitation 1[a]).

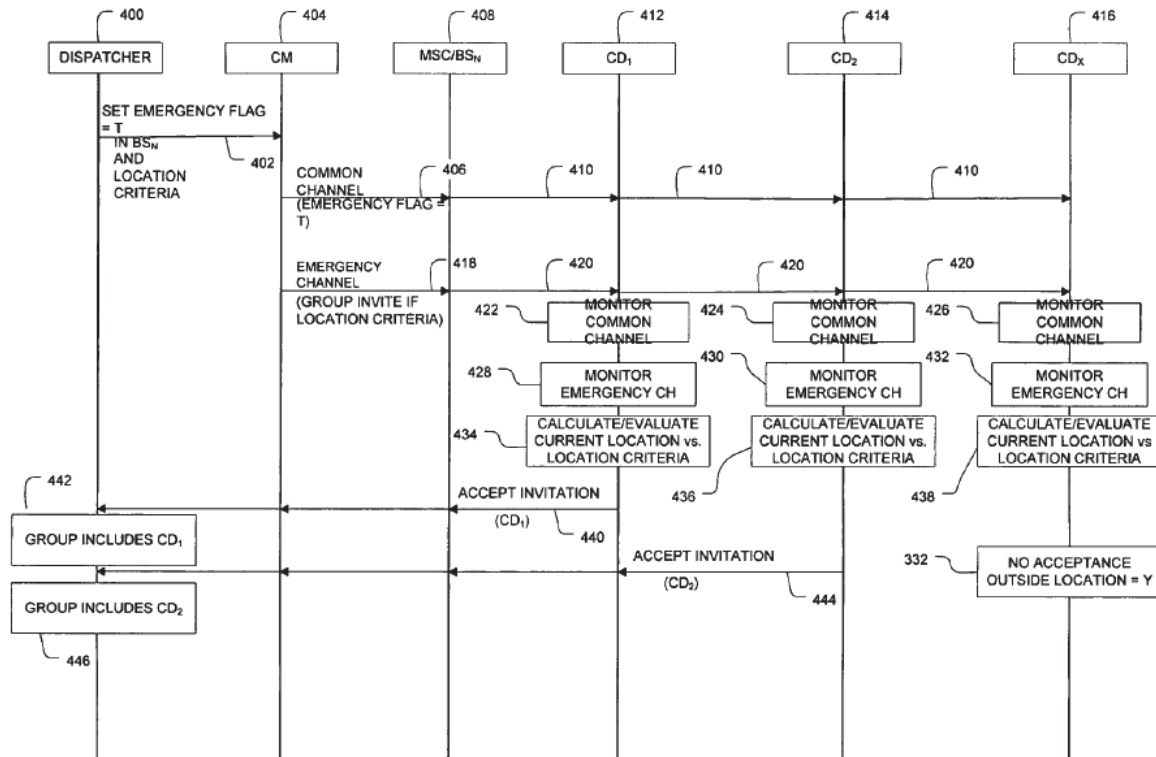


FIG. 4

Ex[1006], FIG. 4.

172. Finally, the group membership location criteria (user policy) identify one or more video feeds that are relevant to the user when the user accesses the selected communication channel. The user of a CD accesses the communication channel for the ad-hoc group when the CD determines that it satisfies the group membership location criteria. Ex[1006], ¶0062. For example, in FIG. 4, CD 412 and 414 pass the location criteria and joins the group, whereas CD 416 fails the location criteria and does not join the group. *Id.* Once a “group member,” each member “receives communications from other group members over the common channel”—*i.e.*, accesses the selected communication channel. *Id.*, ¶0045. And when the user

accesses the channel, the group membership location criteria (user policy) that exists will identify the other group members (other CDs, including CDS with video streaming capability) relevant to the user at the time of access. As Gogic describes, the user policy is selected by a dispatcher who “identifies the occurrence or presence of an event or condition wherein communications between proximately located users *could be beneficial.*” *Id.*, ¶0057 (emphasis added). For example, when the user accesses the communication channel associated with an ad-hoc group relating to a car accident at a particular location, he or she will receive video feeds from police officers or other emergency personnel responding to the same incident. *Id.* ¶0009 (describing need for “emergency response teams to establish communication with any and all users in an area affected by a large scale natural disaster” and a need “for users in an area to be given emergency assistance information that is specific to the area where they are located”).

g. 1ff

173. Gogic discloses “*the one or more video feeds being independent of the selected communication channel.*”⁸ For example, the ’830 patent specification describes “independent video surveillance cameras” such as those installed at

⁸ It is my understanding that Petitioner has taken the position that this term is indefinite in the district court litigation. I have not taken a position on that issue. Rather, I compare Gogic to the ’830 patent specification without conceding that this term is definite and satisfies 35 U.S.C. §112.

“public and non-public locations.” Ex[1001], 3:17-21. Gogic describes the same type of video feeds.

174. For example, in Gogic, the video feeds (CDs with video streaming capability) can be independent of the communication channel set up for the ad-hoc group. For example, CDs can comprise “wireless video cameras” existing in a “public” or “non-public” location. Ex[1006], ¶0035. Further, the group can be formed and torn down by CM 218 in response to events unrelated to the CDs. Ex[1006], ¶0034 (“groups may not be pre-defined, but they can be formed in an ad-hoc fashion” and “[u]pon termination of the ad-hoc communication session, the group formed in this fashion is disbanded”).

h. 1/g/

175. Gogic discloses “*providing access to the identified at least one video feed to the mobile communication device based on the user policy.*” As described for limitation 1[e], when the CD accepts the invitation to join the ad-hoc group, the user of the mobile communication device (CD) is provided access to at least one video feed in the ad-hoc group based on the group membership location criteria (user policy). *See* Ground 2, limitation 1[e].

2. Claim 2

176. Gogic discloses “*[t]he method of claim 1, wherein providing access comprises associating the identified at least one video feed with the mobile communication device in a database that is used to manage access to independent*

video feeds in a network based on audio communication channels that are selected by communication devices in the network.”

177. First, Gogic discloses a “database” for managing access to independent video feeds in a network. As described for limitations 1[c] and 1[g], an ad-hoc group (or “net”) in Gogic may contain one or more CDs that source independent video feeds. Ground 2, limitation 1[c], 1[g]. Furthermore, in Gogic, “a central database contains information identifying the members of each particular group” the members of which are authorized to “communicate with each other.” Ex[1006], ¶0034. The database manages certain privileges for group members, for example, “members of different groups” can “monitor communications between members of more than one group” but may not be able to transmit to each group. *Id.*; *see also id.*, ¶0050 (“CM 218 maintains one or more databases for managing information pertaining to individual group members as well as to each defined net.”).

178. Second, by tracking group membership, the database associates the identified video feeds with the mobile communication device accessing the communication channel. For example, for each CD, the database tracks “an indication of which groups the member is authorized to communication.” Ex[1006], ¶0050.

179. Finally, the database also manages access to the independent video feeds based on audio communication channels that are selected by communication devices in the network. For example, the channel selected by the communication

device via the PTT button (*see* limitation 1[a]) is an “audio communication channel” because it allows a group member to transmit “[a]udio, visual, or other information” to other group members. Ex[1006], ¶0048; *see also id.*, ¶0035 (describing devices that comprise audio and video feeds); Ex[1003], p. 240 (examiner noting that a prior art channel “is also an audio channel because it has audio parameters as well as video”). Accordingly, a POSITA would have found it obvious that when a database stores membership identification for each ad-hoc group, it associates the video feeds in that group with the audio communication channel for that group.

3. Claim 3

a. 3[a]

180. Gogic teaches “*accessing a database to identify a plurality of members of an emergency response team that includes the user of the mobile communication device.*” As described for claim 2, Gogic discloses a database identifying the plurality of members of each ad-hoc group that includes the user of the mobile communication device. In addition, each ad-hoc group comprises members of an emergency response team—for example, group membership can be limited to “authorized and trained persons only (*e.g.*, Police, Emergency Crews, Fire Dept. personnel, etc.).” Ex[1006], ¶0056.

b. 3[b]

181. Gogic discloses “*presenting a plurality of available video feeds on the display of the mobile communication device, the plurality of available video feeds*

including video streams associated with the plurality of members of the emergency response team.” In Gogic, each CD has a “display” for presenting video feeds. Ex[1006], ¶¶0035. As shown in FIG. 3, for example, each CD can transmit video feeds (“media traffic,” below) to (and associated with) other members of the emergency response team. *Id.*, FIG. 3, ¶¶0052; *see also id.*, ¶¶0045 (“Each group member receives communications from other group members over the common channel.”). By 2008, it would have been obvious that a mobile device could have displayed multiple video feeds, including via thumbnails or a drop-down menu for selection—either of which was well-known user interface technology for a mobile device. A POSITA would have been motivated to present an emergency response team with a plurality of video feeds from the members of the team associated with an event to which the team is responding.

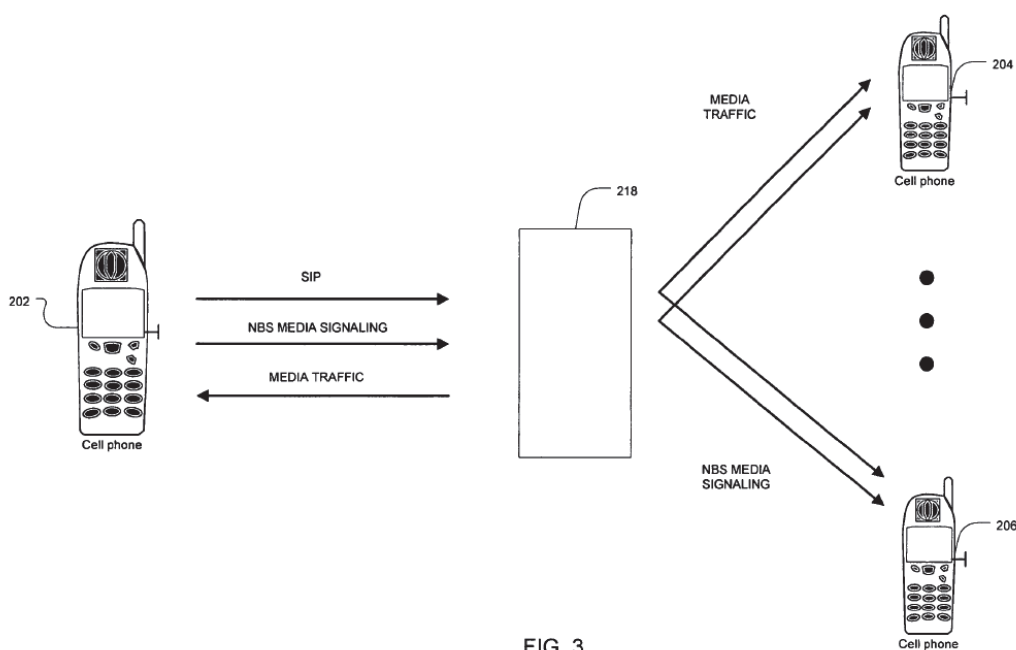


FIG. 3

Ex[1006], FIG. 3.

4. Claim 4

182. Gogic teaches “[t]he method of claim 3, wherein the available video feeds are sourced from a group of surveillance cameras.” Gogic discloses that a CD can be a separate “wireless video camera,” which is a type of surveillance camera, or at least renders use of a surveillance camera obvious. Ex[1006], ¶0035.

5. Claim 5

183. Gogic discloses “[t]he method of claim 1, wherein the communication channel is a Push-To-Talk (PTT) channel in a PTT communication network and the mobile communication device is a PTT radio.” As described for limitation 1[a], the communication channel in Gogic is a channel for transmitting half-duplex communications in a PTT communication network. Ground 2, limitation 1[a]; Ex[1006], ¶0026 (describing half-duplex communications). And Gogic discloses that a CD can be a PTT radio. *E.g.*, Ex[1006], ¶0042 (“In one embodiment of the present invention, the CD is configured to request the transmission privilege through initiation or activation of a push-to-talk (PTT) key or switch.”).

6. Claim 8

184. Gogic discloses “[t]he method of claim 1, wherein the communication channel is associated with a Virtual Talk Group (VTG).” In Gogic, the communication channel is associated with an ad-hoc group, which is a virtual talk group that is not “pre-defined” and consists of any and all users in the vicinity of,

for example, an emergency incident. Ex[1006], ¶0034; *see also id.*, ¶0026 (describing using PTT with non-radio protocols such as RTP and SIP, which can use an IP address to communicate).

7. Claim 9

185. Gogic discloses “[t]he method of claim 1, wherein providing access to the video feeds depends on a video association policy.” The ’830 patent does not use the term “video association policy” but does describe a “video feed association module” that “associate[s] one or more video feeds with one or more communication channels.” Ex[1001], 4:29-33. The specification also describes policies that “govern[] the association of video streams with communication channels and VTGs,” as well as policies that identify “available feeds” based on a “particular role” associated with the user. Ex[1001], 9:45-48, 10:61-65; *see also id.*, 6:3-17, 8:16-33.

186. In Gogic, CM 218 can configure an ad-hoc group to include certain endpoints and those endpoints can transmit video streams to the associated ad-hoc group. *See, e.g.*, Ex[1006], ¶¶0010-0011, 0034-0035, 0056; *see also id.*, ¶¶0039, 0046, 0053-0054, 0059-0060; Section IX.C (Gogic overview). It would have been obvious to a POSITA that CM 218 associates video feeds with communication channels (as described for claim 1) for users with particular roles. For example, CM 218 “controls formation” of an “ad-hoc group of users” based on “location-based membership criteria” and the roles of the users (*e.g.*, whether they are “authorized and trained persons” such as police and emergency crews). Ex[1006], ¶0056. A

POSITA would have understood this feature of Gogic to be a video association policy, as described in the '830 patent.

8. Claim 10

187. For the same reasons described for claim 9, Gogic discloses “[t]he method of claim 9, wherein the video association policy includes a role of the user defined in a policy database.” Moreover, the information relating to the role of each user is stored in a “policy database” defining membership and other characteristics for each user. *E.g.*, Ex[1006], ¶0050.

9. Claim 11

a. 11/a

188. Gogic in view of Opitz discloses “[t]he method of claim 1, further comprising: identifying a geographical location of the user's mobile communication device using a Global Positioning System.” For example, Opitz discloses that the radio can include a “position locator” to determine the position of the radio, where the position locator can use GPS. Ex[1007], 5:60-6:25. It would have been obvious to a POSITA to combine Opitz's GPS locator with the CDs of Gogic. This is because Gogic describes that CDs “calculate their location.” (Ex[1006], ¶0062), and a POSITA would have recognized that one known way to do so would be to implement CDs with a “position locator” such as a Global Positioning System (GPS), as disclosed in Opitz. Ex[1007], 5:60-6:25. A POSITA would have had a reasonable expectation of success in making this combination because GPS was widely

implemented and considered a common means for determining location of a device (e.g., a radio) by 2008, as illustrated by Opitz's disclosures.

b. 11[b]

189. Gogic teaches *"identifying that the at least one video feed is associated with the geographical location; associating the at least one video feed with other mobile communication devices set to the same channel as the user's mobile communication device; and automatically rendering access to the at least one video feed to the other mobile communication devices."*

190. Gogic discloses that the at least one video feed is associated with an ad-hoc group, which is defined by a "group membership location criteria." Ex[1006], ¶0058. For example, the criteria can be based on "a location centerpoint and an acceptable radius" or "perimeter locations." *Id.* A POSITA would have understood that implementing the GPS functionality of Opitz in Gogic, as described for limitation 7[a], could be used to identify the centerpoint and thus the combination would identify the video feed associated with the geographical location.

191. Moreover, Gogic describes that the at least one video feed can be associated with other devices set to the same channel (ad-hoc group) as the user selected. As described for limitation 1[e], each member of the ad-hoc group within the group membership location criteria and that accepts the invitation to join the group is granted access to the communications of all other members, including the

at least one video feed provided by the video-capable CDs in the group. Ground 2, limitation 1[e].

10. Claim 12

192. Gogic teaches “[t]he method of claim 1, wherein the selected communication channel is a selected audio communication channel that is selected from a plurality of audio communication channels, the at least one video feed being associated with the selected audio communication channel, and the user policy identifying the one or more video feeds that are relevant to the user when the user accesses the selected audio communication channel.”

193. First, as described for claim 2, Gogic discloses that a CD user selects an audio communication channel via the PTT button because it allows for audio communications between members of a VTG. Ground 2, claim 2.

194. Second, as described for limitation 1[e], an ad-hoc group can include audio devices with video feeds, accordingly a video feed is associated with the selected audio channel. Ground 2, limitation 1[e]. As also described for limitation 1[e], the user policy for forming the ad-hoc group identifies the video feeds relevant to the user (in the defined geographic zone) at the time (when) the user accesses the communication channel for that ad-hoc group. *Id.*

11. Claim 13

195. Gogic discloses “[t]he method of claim 1, wherein the user policy associates the at least one video feed with the selected communication channel based

on the geographic zone from which the at least one video feed is sourced and a device group that includes the user's communication device."

196. As described for limitation 1[e], the user policy for forming the ad-hoc group identifies the video feeds in the defined geographic zone. Ground 2, limitation 1[e]. Moreover, the CM 218 also considers the role of the user (a device group) in granting access to the ad-hoc group (and its associated video feeds). Ex[1006], ¶0056 (granting access only to "authorized and trained persons" such as police).

12. Claim 14

197. Gogic discloses "[t]he method of claim 1, wherein the user policy associates the at least one video feed with the selected communication channel by comparing a first geographic zone from which the at least one video feed is sourced with a second geographic zone corresponding to a location of the user's communication device."

198. The user policy for forming the VTG identifies CDs (including video feeds) in the area around a "centerpoint." Ex[1006], ¶0058. A POSITA would have understood that in some cases this centerpoint would be a user's location, for example, if a user is experiencing an emergency at that location. A POSITA would have understood that a scenario like this was common when a first responder arrived on the scene of an emergency and required connection to nearby units to request additional support. In that case, the area around the user (second geographic zone)

is compared to the area of the video feed (first geographic zone) to determine if the video feed will join the group. *E.g.*, Ex[1006], ¶0062.

13. Independent Claim 15

a. 15[pre]:

199. If the preamble is limiting, Gogic discloses “[a]n apparatus.” Ex[1006], Abstract, ¶0003.

b. 15[a]

200. Gogic discloses “*at least one processor.*” For example, Gogic describes a processor for either the CDs or the CM. Ex[1006], ¶¶0071 (“blocks, modules, and circuits described in connection with the embodiments disclosed herein may be implemented or performed with a general purpose processor.”), 0072.

c. 15[b]

201. Gogic discloses “*a memory in communication with the at least one processor, the memory being configured to store a video stream association module executable by the at least one processor, the video stream association module being executed by the at least one processor to cause operations to be performed.*”

202. Gogic discloses a memory for both the CDs and the CM. Ex[1006], ¶0072. In addition, Gogic disclose a video stream association module that causes the recited operations in 15[c]-15[i] to be performed, including under the proposed means-plus-function construction of “video stream association module.” *See* Section X.B.13.d.

203. In Gogic, the video stream association module includes Gogic's CDs, as modified by Optiz, and CM. The functions of these elements disclose each of the functions of the video stream association module (which are the same functions in claim 1), as above with respect to limitations 1[a]-1[g]. Ground 1, limitations 1[a]-1[g].

204. To the extent a "video stream association module" is not construed as a means-plus-function limitation, it is disclosed for the same reasons described for claim 1, where the memory in Optiz's mobile device and Gogic's CD and CM store a video stream association module for performing the recited operations. *See* Ex[1001], 4:34-39 (video feed association module may be at a "central node and/or distributed nodes"), 3:21-27.

205. To the extent the Board adopts Petitioner's interpretation of "video stream association module" as a means-plus-function term with the corresponding functions and structure described in Section VII, it is also disclosed or rendered obvious by Gogic in view of Optiz.

206. For example, Gogic discloses or renders obvious each element of the "video feed association module" described in the '830 patent, including:

- a "channel identifier module" and a "graphic user interface module" for monitoring a selection of a communication channel, including on a display of a mobile communication device. Ex[1001], FIGs. 2, 8, 9. For example, as described for limitation 1[a], Gogic discloses a mobile communication device

user interface for selecting a communication channel on a display and setting the device to that channel. Ground 2, limitation 1[a].

- a user interface for providing a plurality of frequencies on a display... and monitoring a selection of a radio frequency..., Ex[1001], FIG. 9. As described for limitations 1[b] and 1[d], Gogic in view of Opitz provides a user interface to display frequencies to a user and to allow a user to select one of the frequencies. Ground 2 limitations 1[b], 1[d]. Although Gogic in view of Opitz does not expressly disclose that the frequencies are displayed as a “drop-down menu” (*see* Ex[1001], 9:6-65, FIG. 9), it would have been obvious to arrange the frequencies as a drop-down menu as disclosed in FIG. 9. This is nothing more than a simple design choice addressed by easy modification to software. A drop-down menu would have been an obvious design choice for a user interface when multiple communication parameters (frequencies) can be mapped to other parameters such as multicast IP addresses (communication channels).
- a “video feed identifier module” and a “policy module” for identifying at least one video feed..., including as described in FIGs. 3-4 of the '830 patent for associating a communication channel with a video feed based on a policy. Ex[1001], FIGs. 2, 3-4, 4:61-67. For example, as described for limitation 1[e], in Gogic, “a central database contains information identifying the members of each particular group” the members of which are authorized to “communicate

with each other.” Ex[1006], ¶0034. The database manages certain privileges for group members, for example, “members of different groups” can “monitor communications between members of more than one group” but may not be able to transmit to each group. *Id.*; *see also id.*, ¶0050.

- a “communication module” for providing access to the identified at least one video feed.... Ex[1001], FIG. 2. As described for limitations 1[e] and 1[g], Gogic provides a mechanism for transmitting video feeds to members of the ad-hoc group. Ground 1, limitations 1[e], 1[g].

d. 15[c]-[i]

207. For the reasons provided above and for claim 1, a POSITA would have found these limitations obvious in view of Gogic and Opitz.

14. Dependent Claim 16

208. For the reasons described for claim 2, Gogic discloses the additional limitations of claim 16.

15. Dependent Claim 17

209. For the reasons described for claim 3, Gogic discloses the additional limitations of claim 17.

16. Dependent Claim 18

210. For the reasons described for claim 4, Gogic discloses the additional limitations of claim 18.

17. Dependent Claim 19

211. For the reasons described for claim 5, Gogic discloses the additional limitations of claim 19.

18. Dependent Claim 22

212. For the reasons described for claim 8, Gogic discloses the additional limitations of claim 22.

19. Dependent Claim 23

213. For the reasons described for claims 9 and 10, Gogic discloses the additional limitations of claim 23.

20. Dependent Claim 24

214. For the reasons described for claim 11, Gogic discloses the additional limitations of claim 24.

XI. SECONDARY CONSIDERATIONS

215. During prosecution of the '830 patent, the applicant did not identify any evidence of secondary considerations of non-obviousness tied to the claimed invention of the '830 patent. I understand from counsel for Petitioner that Patent Owner in the co-pending district court litigation has not identified any evidence with respect to secondary considerations of non-obviousness. I am aware of no evidence of secondary considerations that would meaningfully rebut a finding of obviousness.

216. Accordingly, there is no objective evidence of non-obviousness that might warrant a finding that Claims 1-5, 7-19, and 21-24 are patentable. To the

extent Patent Owner at a later date cites or provides any other evidence regarding secondary considerations, including any expert opinions, I reserve the right to supplement my analysis and opinions to address it.

XII. CONCLUSION

217. For at least the above described reasons, in my opinion Claims 1-5, 7-19, and 21-24 of the '830 patent would have been obvious a POSITA based on the prior art references I have cited and analyzed above.

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

219. I reserve the right to supplement my opinions in the future to respond to any arguments raised by Patent Owner and to consider any new information that becomes available to me.

220. I hereby 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 willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on:

8/21/23


Nathaniel Polish, Ph.D.

Appendix A

business experience

SuperAlert has developed a range of wireless sensors used for monitoring building systems in large New York City residential buildings. SuperAlert manufactures, deploys, and operates sensor suites and generates notifications and alerts for building personnel and owners.

Co-founded computer consulting firm. Employs up to twenty people as needed.

Consulting on patent valuation and strategy: Act as an advisor on technical and intellectual property matters to various clients. Developed intellectual property for various companies. 2001- present.

Predictive dialer deployment and operation: During the 2012 election cycle assembled and ran a team of engineers to deploy, debug, and operate a large scale outbound calling server farm. This server farm supported hundreds of agents and millions of minutes of calling. 2012.

Risk management: Developed technology platform to allow for complex question and answer sessions with airport managers. The results of the sessions then generated planning documents used in risk management. Results were published as part of a Transportation Research Board research program, 2011-2013.

Advanced Transit fare collection: Founding member of board of directors. Advisor on technical and intellectual property matters. Developed intellectual property for the company. The company is engaged in the development and sale of advanced fare collection systems for mass transit using RFID technologies. 2004-present.

Wireless broadband: Founding board of directors member. Advisor on technical and intellectual property matters. The company provides a variety of wireless broadband services to semi-rural customers using mesh networks. 2004-2009

Wireless text messaging system: Designed and developed a very large scale, multi-platform text messaging system. Acted as the lead technologist for a startup. In this capacity attended many venture capital meetings and developed all technical sections to the business plans. The system integrated advanced Interactive Voice Response (IVR) with email, paging, and SMS messaging. Oversaw and planned initial development of very small paging device to me manufactured in very high volume. 2000-2001.

Distributed market making system: Provided a range of services in the areas of product definition, specification, and implementation strategy. Marketboy was a distributed system that allowed prospective purchasers and vendors to make bid and ask offers for proposed transactions. 2000.

Telephone to streaming audio bridge: Developed, designed and deployed an industrial strength IVR system that allows users to access streaming media via their cell phones. The system supports up to 96 streams on a single chassis. Developed web based content management system and interface for customizable user preferences. 2000.

deliverENow.

NEW YORK, NY

Online delivery system: Developed a proof of concept prototype of online delivery system. This consisted of a stock clerk server written for Windows CE (Clio) with a CDPD network connection. It demonstrated how purchase and delivery information would be sent to an in-store stock person who prepares them for pickup by a member of the deliverENow courier network. Provided strategic technical advice. Served on board of advisors. Wrote technical specification of business and logistical components of the system. 2000.

Togglethis.

New York, NY

Animation distribution system: Developed critical components of initial version of email-delivered animation system. Components included MacroMedia Director Xtras as well as encryption functions. Developed tools to distribute and manage Togglethis's content, DTG built a custom UNIX email list-server. This server allowed Toggle administrators to create groups, upload episodes, and schedule the delivery of their content. Developed system architecture and language specification for the next version of the IC Engine, which drives the characters. 1998-1999.

JuniorNet.

BOSTON, MA

Children's on-line service: Designed, developed and lead the implementation of a large scale network system for delivery of children's entertainment and education content. Worked with the president and other key players to fit a technology strategy to corporate goals. System is required to serve from 200,000 to 1,000,000 subscribers and be supportable over three to five years. All project goals met within a \$1,000,000+ budget. 1997-2000.

One Click Charge.

NEW YORK, NY

Provide a wide range of consulting services starting with technology evaluation for the principal investor. Provided services in the areas of product definition, team formation and implementation strategy. Developed significant components of a substantial Internet micropayment and authentication system. 1998-2000.

Swatch.

WEEHAWKEN, NJ

Ticketing system: Implemented a radio frequency identification (RFID) based system for providing access to the 1998 Goodwill Games utilizing RFID tagged wristwatches. 1998-1999.

Instant Video Technologies, Inc./Burst.com

SAN FRANCISCO, CA

Burstware --. Designed and developed a series of products to deliver digital video and audio materials over wide-area internet using consumer grade computers. Products were designed to fit within the client's existing patent portfolio. 1995-1997.

Technical evaluation --. Provided technology strategy and evaluation services and acted as Technology Director. 1995-1997.

Assurenet.

BETHESDA, MD

Internet Insurance system --. Designed and developed a system for utilization of the Internet for the distribution and control of insurance agent support software. System can handle tens of thousands of simultaneous users. Member of Board of Directors. 1995-2002.

New Zealand Antarctic Project (NZAP) and US Antarctic Program (USAP).

ANTARCTICA

Penguin Weighbridge -- Designed, developed, and deployed system for tracking the comings and goings, weights, and Ids of Adelie penguins in their natural environment on three colonies on Ross Island, Antarctica. Systems run continuously for months in adverse conditions. System was upgraded and replaced in 2016. 1994-present.

Electronic Digital Documents, Inc.

NEW YORK, NY

Check Image Compression system --. 1995-1999.

American Veterinary Identification Devices, Inc.

NORCO, CA

AVID reader -- Designed and developed digital computer components of radio frequency identification system. Work involved imbedded microcontrollers and real-time digital signal processing in very noisy environment. Designed communications protocols including encryption and error checking schemes. Product in high volume (50,000 unit) production. 1988-1995.

Amprobe Instrument, Inc.

LONG ISLAND, NY

REMCON tester -- Designed and implemented product life-cycle test fixture for a new and innovative solid state switch. Test fixture used by Underwriters Labs for approval. 1988.

Personal Computer Card Corporation

NEW YORK, NY

Smart Cards -- Designed smart card reader/writer system. Performed general design and component selection and wrote software for smart card communications. System design implemented in commercial product. 1987.

The Dun & Bradstreet Corporation

NEW YORK, NY

Voice editing systems -- Designed and built all parts of four generations of interactive voice editing systems. Editing systems produce output used in extensive, high quality speech synthesis system that is part of larger information delivery system. The systems are built on networks of computers in a variety of programming languages and systems. The system involved interactive user interfaces, screen windows, signal processing, and voice file systems. 1982-1991.

1997-2001

Co-Founder, Director and CTO

I-RECALL, INC.

NEW YORK, NY

Co-founded a company that developed software to enable note-taking and linking of notes to streaming media. Used platforms such as PalmPilot and CrossPad for note-taking and provided time-stamped links to audio and video media. Company sold to a focus group company.

1996-1999

Co-Founder, Director, CTO & Principal Product Designer

SOLILOQUY, INC.

NEW YORK, NY

Natural language interfaces to databases: Co-founded in 1996 a company to provide next generation interfaces to structured databases. Developed prototype system using speech recognition and speech synthesis to provide access to music and ecommerce databases. Raised \$1.5 million in angel investments. Company has raised a total of \$8 million through a variety of institutional and individual investors. Hired replacement CTO and exited company in 1999.

1991-1992

President & Principal Product Designer

SIMPLICITY COMPUTING, INC.

NEW YORK, NY

Co-founded in 1991 a computer peripherals manufacturing company concentrating on portable products with international mass-market appeal. Main product: Simplicity Portable Drive, an IBMPC parallel port connected, portable disk storage system. Marketed domestically and in 25+ countries. Products marketed direct via telemarketers, trade shows, sales reps, and national advertising. Products distributed through dealers, distributors and national catalog houses. Company employed 10 people.

- Wrote business plan and raised \$350,000 startup funding
- Established marketing plans
- Directed marketing of products in trade shows, national advertisements and focus groups
- Managed employees
- Designed hardware and software for products
- Supervised hardware & software implementation teams
- First units shipped less than six months from start of project
- Supervised all aspects of manufacturing and testing process
- Contracted with four manufacturing facilities and many suppliers for production
- Supervised and established call-in customer support services

1989-1999

President & CEO

MEASUREMENT & CONTROL PRODUCTS, INC.

NEW YORK, NY

Founded in August 1989 an electronic products development company. M&CP designs, develops, markets and sells its own products through retail, wholesale and catalog channels domestically and abroad. All manufacturing is contracted. Company was profitable in its first year of operation.

Flagship product:

BitView -- Hand held RS-232 data communications diagnostic monitor. Invented, developed and produced hardware and software. Developed and oversaw implementation of marketing strategies, budgets, and business plans. Product currently in third production run.

education

1980-1993

COLUMBIA UNIVERSITY

NEW YORK, NY

Ph.D. in Computer Science, May 1993,

Thesis: *Mixed Distance Measures for the Optimization of Concatenative Vocabularies in Speech Synthesis.*

MPhil in Computer Science, December 1989.

MS in Computer Science, December 1987.

BA in Physics, Columbia College, May 1984.

teaching positions

1997

COLUMBIA UNIVERSITY

NEW YORK, NY

Adjunct Professor, Computer Science.

Advanced undergraduate course: Artificial Intelligence.

1989

COLUMBIA UNIVERSITY

NEW YORK, NY

Graduate Lecturer, Computer Science.

Advanced undergraduate course: Software Design. Taught 68 advanced undergraduates. Supervised two teaching assistants. Students implemented full spreadsheet application under UNIX.

1984-1985

CITY UNIVERSITY OF NEW YORK

NEW YORK, NY

Adjunct Professor, Experimental Psychology.

Graduate-level course: Computer Methods in Experimental Psychology.

publications and patents

2010

Michael L. Beigel, Nathaniel Polish, Steven R. Frank, and Robert E. Malm. Electronic Identification System with Improved Sensitivity. United States Patent 7,737,821B2. June 15, 2010.

2009

Silbernagl, Martin and Polish, Nathaniel. Learning Fare Collection System for Mass Transit. United States Patent 7,568,617. August 4, 2009.

2009

Beigel, Michael L.; Polish, Nathaniel; Frank, Steven R.; Malm, Robert E. Electronic identification system with improved sensitivity. United States Patent 6,472,975. October 29, 2002.

2002

Nathaniel Polish. Bilateral speech system. Speech dialogs for database access. United States Patent 6,430,531. August 6, 2002.

1999

Nathaniel Polish. System and method for distributing and managing digital video information in a video distribution network. United States Patent 5,963,202. October 5, 1999.

1993

Michael L. Beigel, Nathaniel Polish and Robert E. Malm. Multi-Mode Identification System. Fundamental RFID technology. United States Patent 5,235,326. August 10, 1993.

1991

Nathaniel Polish. Mixed Distance Measures for Synthetic Speech Evaluation. In Proceedings of ICASSP-91, Toronto, Canada, 1991.

1988

Nathaniel Polish. A Distributed Signal Processing Facility for Speech Research. In Proceedings of AVIOS88, San Francisco, CA. October 4-6 1988.

1987

Nathaniel Polish. Mixed Distance Measures for Optimizing Concatenative Vocabularies for Speech Synthesis: A Thesis Proposal. Columbia University Department of Computer Science technical report number CUCS-310-87, 1987.

1983

M. Morris, N. Polish, B. Zuckerman, and N. Kaifu. The Temperature of Molecular Gas in the Galactic Center Region. The Astronomical Journal, 88(8):1228-1235, August 1983.

**research
interests**

Computer Speech, Distributed Systems, Interactive Environments. Software Engineering, Systems Engineering, Technology Policy. Knowledge-Based Approaches to Signal Processing. Computational Physics, Non-Linear Dynamics.

**professional
societies**

International Society for Electrical and Electronics Engineers (IEEE), Association of Computing Machinery (ACM), American Association for the Advancement of Science (AAAS).

other interests

Foreign Policy, Political Science, Long Distance Bicycling, United States Space Program.

grants

- AT&T Special Projects Grant of \$25,000 for synthetic speech, 1986.
- Financial support for Ph.D. work was provided by the New York State Science and Technology Foundation Center for Advanced Technology in Computers and Information Systems at Columbia University.
- Santa Fe Institute Complex Systems Summer School, 2003. Month-long workshop in agent-based models, non-linear systems, and complexity.

1982-present

Technology development projects

Some technology development projects have included:

Wildlife Tracking Systems -- Implemented a remote monitoring system to track and weigh Adelie penguins on Ross Island, Antarctica. System was debugged on-site and made to function in adverse environmental circumstances. 1994-1997, 2016.

Internet Systems -- Implemented a LINUX Internet server with FTP and gopher services. Installed and Internet client for IBM/PC platform. 1994-1995.

Image Compression Technology -- Developed proof-of-concept system for a system to compress images of checks to very small file size. 1994.

Biomedical Systems -- Implemented a large biomedical system used in patient diagnostics. Provided all necessary materials for Food and Drug Administration compliance. 1992-1993.

Synthetic Speech Systems -- Implemented and supported several generations of synthetic speech systems for commercial as well as research purposes. 1985-1999.

Graphics -- Developed high-speed drivers for several graphical devices and evaluated their applicability for interactive uses. Devices included: Vectrix, RAMTEK, Apple Lisa, and IBM Enhanced Graphic Adapter. 1983-1987.

Voice Boards -- Specified function requirements for several generations of high quality voice boards for Q-bus (PDP-11), Apple, MultiBus, and IBMPC bus. Developed high-speed drivers for each of the boards. 1982-1986.

Video Disk and Touch Screens -- Developed experimental interactive system utilizing computer controlled video disks and touch screens. 1982.

1994-present

Intellectual property projects

A separate document detailing intellectual property projects is available on request.

tools

Languages commonly used:

Pascal 1980-1988

C 1985-present.

Other languages used: C++, Lisp, Java and Python .

Assembler:

Intel 8048, 8051, 8088-pentium

Motorola 680xx

TI 320xx signal processors

Zilog Z8, Z80, PIC

Protocols include:

TCP/IP, UDP, RPC and NFS

Operating systems commonly used:

UNIX, MSDOS, Windows and p-system.

In circuit emulators.

Database tools.

ARM processors for embedded systems.

PC bus interfacing.

**contact
information**

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Office: (212) 684-3890

Academic and business references available upon request.