

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MOTOROLA SOLUTION, INC.,
Petitioner,

v.

STA GROUP LLC,
Patent Owner.

Case No. IPR2023-01294
U.S. Patent No. 8,831,664

DECLARATION OF SHMUEL SHAFFER, PH. D.

I, Shmuel Shaffer, do hereby declare and say:

I. INTRODUCTION

1. I am over the age of twenty-one (21) and competent to make this declaration.

I am also qualified to give testimony under oath. The facts listed below are within my personal knowledge.
2. I am not an employee of the Patent Owner in this matter. Rather, I have been engaged in this matter to provide my independent analysis of certain issues I understand arise in connection with the *Inter Partes* Review of U.S. Patent No. 8,831,664 (which I refer to as “the ’664 Patent”) (Ex. 1001). I have received no compensation for this declaration beyond my normal hourly rate of \$450/hr for file review and case preparation, including preparing my declaration, and \$450/hr for testifying at deposition, and for my time spent studying the matter. I will not receive any added compensation based on the outcome of any proceeding related to the ’664 Patent. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this matter.

3. I have considered documents, including the '664 Patent (Ex. 1001), and have been asked to provide my opinions on how those of skill in the art (as defined herein) would understand those documents. For the purposes of this declaration, the documents I considered are the documents identified herein. I provide my conclusions regarding the disclosures of these documents below.
4. I have also not formulated any opinions regarding patent validity in light of any prior art other than that cited by Petitioner Motorola Solutions, Inc. ("Petitioner"). For the cited prior art, I have examined that art in light of the arguments made by Petitioner and the opinions expressed by David Williams (Petitioner's technical expert witness) in his declaration (Ex. 1002) and his deposition testimony (Ex. 2006).
5. I was asked to provide opinions about whether those of skill in the art would have modified and/or combined (1) *Downs* in view of *EDACS*, (2) *Downs* in view of *EDACS* and in further view of *Childress*, (3) *Downs* in view of *EDACS* and in further view of *Hancock*, (4) *Downs* in view of *EDACS* in further view of *Childress* and in even further view of *Hancock*, (5) *Downs* in view of *EDACS* and in further view of *Reich*, (6) *Downs* in view of *EDACS* in further view of *Childress* and in even further view of *Reich*, (7) *Kim* in view of *Ishibashi*, (8) *Kim* in view of *Goss* in certain ways based on their

understanding of *Downs*, *EDACS*, *Childress*, *Hancock*, *Reich*, *Kim*, *Ishibashi*, and *Goss*, and the state of the art as of August 16, 2011. I have offered my opinions on these issues where asked.

6. I was also asked to provide opinions about whether the combinations of (1) *Downs* in view of *EDACS*, (2) *Downs* in view of *EDACS* and in further view of *Childress*, (3) *Downs* in view of *EDACS* and in further view of *Hancock*, (4) *Downs* in view of *EDACS* in further view of *Childress* and in even further view of *Hancock*, (5) *Downs* in view of *EDACS* and in further view of *Reich*, (6) *Downs* in view of *EDACS* in further view of *Childress* and in even further view of *Reich*, (7) *Kim*, (8) *Kim* in view of *Ishibashi*, (9) *Kim* in view of *Goss* describe certain features of certain claims of the '664 Patent. I have offered my opinions on these issues where asked.
7. I am not offering any conclusions as to the ultimate determinations that I understand the Patent Trial and Appeal Board ("Board") will make in this proceeding. I am simply providing my opinion on the technical aspects of the documents (including, where asked, the application of what I understand Patent Owner asserts is the appropriate construction of claim terms for this proceeding).

II. BACKGROUND QUALIFICATIONS

8. I am an engineering professional in the telecommunication and software industry with over 40 years of experience. For most of my career, I worked as an engineer, engineering supervisor/director, and as an Engineering Vice-president in the telecommunication market, predominantly developing telecommunications software and hardware. My resume covering my experience is submitted as Ex. 2007 in this proceeding and outlines my qualifications and background. *See* Ex. 2007.
9. I started my career in the telecommunication space at ROLM/IBM/Siemens as an individual contributor in Siemens Private Networks in the United States. After years spent in the company, I was promoted to the head of the HW organization. Then I moved within Siemens Private Networks, and started the Voice Over IP (“VoIP”) application group and head of the organization of this new group. From there, I changed companies and became Director at the Voice Technology Group for Cisco Systems in San Jose, California. Here I began developing software for use in Contact Center and Voice over IP applications.

10. In 2004, I began work as a Director of Engineering for Safety and Security Systems Business Unit of Cisco Systems. While in this role, I managed a team of more than 60 engineers to develop radio over IP application systems.
11. After some time, I was sent to the Stanford Executive Program which then led me to be moved into more office work at the Office of the CTO in the Emerging Technology Group where I held the position as Senior Director. In this role, I identified and developed new areas for Cisco to invest and create a new business units that could grow to generate over \$1 billion in revenue.
12. In 2009, I assumed a Senior Director role governing the development organization of the Smart Grid Business Unit. In this role, I was responsible for over 75 engineers and developed telecommunication products and routers for the utility market. This work culminated in a key component to Cisco's Smart Grid Intellectual Property Initiative. For my efforts in this role, I was awarded the Distinguished Inventor title by Cisco Systems.
13. I received my Bachelor of Science degree in Electronics Engineering in Technion, Israel.
14. I received my Master of Science, Electrical Engineering from Stanford University located in Stanford, California.

15. I received my Master of Science, Statistics from Stanford University located in Stanford, California.
16. I then received my Ph. D. in Electrical Engineering from Stanford University located in Stanford, California.
17. Over my professional career, I have been the inventor or co-inventor of more than 250+ issued domestic and international patents, including the '664 Patent.

III. MATERIALS REVIEWED

18. In the course of conducting my analysis and forming my opinions, I have reviewed materials including those listed below.
 - i. The IPR Petition by Motorola in this proceeding
 - ii. The '664 Patent (Ex. 1001)
 - iii. The Prosecution History of the '664 Patent (Ex. 1003)
 - iv. Mr. Williams' Declaration (Ex. 1002)
 - v. Mr. Williams' Deposition Testimony (Ex. 2006)
 - vi. U.S. Patent No. 5,754,960 to Stephen R. Downs ("*Downs*") (Ex. 1004)

- vii. System and Standards Definition for a Digital Land Mobile Radio System, TSB69, TIA/EIA Telecommunications Systems Bulletin (Nov. 1998) (“*EDACS*”) (Ex. 1005)
- viii. U.S. Patent Publication No. 2006/0147028 A1 to Jerry T. Hancock (“*Hancock*”) (Ex. 1006)
- ix. U.S. Patent Publication No. 2007/0197248 A1 to Jason A. Reich (“*Reich*”) (Ex. 1007)
- x. International Patent Publication No. WO 2004/034350 A1 to Chang-Eui Kim (“*Kim*”) (Ex. 1008)
- xi. Japanese Patent Publication No. 2006-340164 A to Yoshihiro Ishibashi (“*Ishibashi*”) (Ex. 1009)
- xii. U.S. Patent No. 7,330,693 to Stephen Clifford Goss (“*Goss*”) (Ex. 1010)
- xiii. U.S. Patent No. 4,905,302 to Jeffrey S. Childress et al. (“*Childress*”) (Ex. 1031)
- xiv. Claim Construction Order, Case No. 2:22-CV-00381-JRG (E.D. Tex.) (Ex. 2004)

IV. OVERVIEW OF THE TECHNOLOGY

19. The technology covered in the analysis relates to communications and to channel configuration in a communication environment. The method comprises message transmission in media streams in a communication environment.
20. Communication systems have increasingly grown more complex. In recent years, there have been protocols implemented that intelligently respond to endpoint communication. Push-to-talk (PTT) devices are commonly used by first responders and emergency personnel that allow for single channel or multiple channel configurations.
21. In these types of environments, the management center will support the channels and may make determinations regarding which channels are more important than others. Normally, channels are statically configured meaning that the volume of each channel is manually adjusted by an end user at the call/management center or by the emergency responder in the field. This leads to a possibility that important information can be missed. As such, there is a need to implement a way for channels to optimally be configured in the communication environment in such a way that the channels may be coordinated for effective and optimal communication.

22. The subject matter of the '664 Patent describes a method that allows channels to be dynamically and optimally provisioned in a communication environment to allow the messages sent on the channels to be received by the intended recipient. The benefit of such a method is that said method requires no manual input from an input user. A key benefit of this system is that it facilitates the dynamic nature of provisioning media streams to provide an automated real-time response to situations in the field. To accomplish that, the media stream in a communication environment is monitored and when an alert is detected on one of the media streams, the system automatically elevates the media stream to change how it is received by an endpoint.

V. U.S. PATENT NO. 8,831,664

23. The '664 Patent is titled "SYSTEM AND METHOD FOR PROVIDING CHANNEL CONFIGURATIONS IN A COMMUNICATIONS ENVIRONMENT." Ex. 1001, Cover. The patent describes a system and method for "monitoring media streams associated with channels in a communication environment." *Id.*, Abstract. Emergency personnel usually use push-to-talk communication radios to communicate. *Id.*, 1:25-46. This type of system usually supports a plurality of channels. *Id.*, 3:15-29. These types of channels were normally statically configured and were not able to

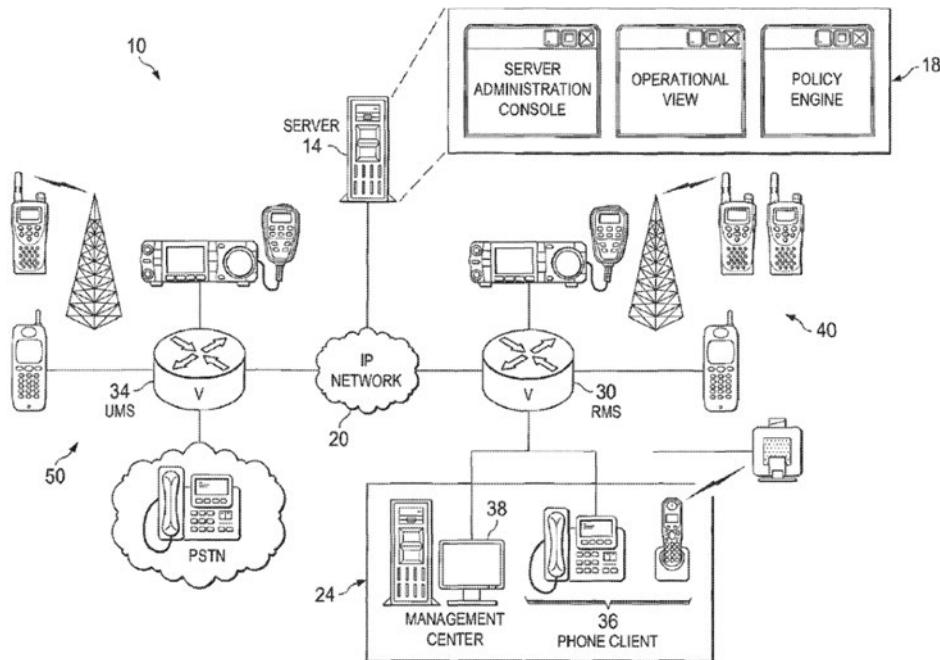
dynamically and intelligently configure to endpoints in the communication environments depending on priority messages. *Id.*, 1:33-46. This would potentially impede communications from reaching the intended recipients. *Id.*

24. As an example of this, the '664 Patent describes that the PTT communication network has two different channels that are utilized by the officers, a UHF channel and a VHF channel. Ex. 1001, 3:30-45. Each channel has different roles in the system with the UHF channel providing a way for dispatchers to communicate with the officers and the VHF channel provides a means for passive communication for routine activities. *Id.*
25. Dispatcher communications may have higher priority than other routine activities, so a dispatcher may need to turn up the volume of the UHF channel while decreasing the volume of the VHF channel which are all monitored by dispatchers listening at the same time. Ex. 1001, 3:30-45. In so doing, the officer may forget to turn the volume back up on this channel which may cause the officer to miss important information that may need immediate attention. *Id.*, 3:46-55.
26. In turn, the '664 Patent solves this problem by providing a communication system a way to monitor and identify alerts transmitted as part of media streams through intelligent prioritization. *Id.*, 3:56-65, cl. 1. The system will

achieve this by dynamically adjusting the media stream over a channel. *Id.*, 3:56-4:9. This is achieved by identifying in the media stream an alert from a PTT mobile device and the system makes adjustments to how endpoints receive that media stream, through which the alert was received, in a higher priority fashion as the stream continues. *Id.*, 3:56-4:9. The adjustment to the media stream will include increasing the priority of the media stream and changing how the endpoint receives that media stream or presented to the end-user. *Id.* This elevation will ensure that all important messages are received by the intended parties and no message is missed. *Id.*, 3:56-59.

27. Figure 1 of the '664 Patent depicts a representative system envisioned by the '664 Patent. *Id.*, 2:33-34, Fig. 1. The communication system includes an IP network connected to a router media service ("RMS") and a universal media service ("UMS"). *Id.*, 2:37-40. The communication network also hosts a management center connected to end-user devices which are called endpoints in the system. *Id.*, 2:40-44, 47-50. The ingenious nature of the '664 Patent allows the UMS to "understand which streams should be given priority over other streams." *Id.*, 5:26-28. As a result, the UMS shifts media streams and determines what volume the media streams should have for an end user device. *Id.*, 5:28-30.

28. Figure 1 depicts the system of the '664 Patent.

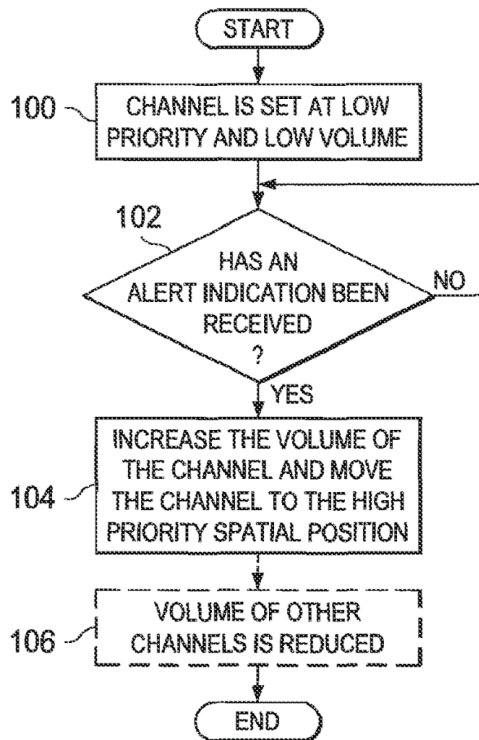


Ex. 1001, Fig. 1.

29. The UMS of the '664 Patent may include a mixer. Ex. 1001, 5:36-40. This mixer will allow the UMS to control any volume of each media stream. *Id.*, 5:36-45. As an example, two streams that originate from end-user devices are received by the UMS. *Id.* The mixer then provisions the media streams to the endpoints as these endpoints do not have the capacity to provisioning channels based on the identified alert conditions in the media streams. *Id.*, 5:50-52. The management center also performs such mixing function and manages each of the media streams so that the media from the channels is received at the specified volume. *Id.*, 5:53-64.

30. The dynamic nature of the claims is illustrated in Figure 5 of the '664 Patent.

Ex. 1001, Fig. 5, 7:60-8:14.



Ex. 1001, Fig. 5.

31. The system will dynamically make adjustments to the media stream if the originating media stream includes an alert indication. *Id.*, 7:60-8:14. The step 100 of the '664 Patent shows that a channel of a PTT radio is set on a low priority and a low volume. *Id.*, 7:61-63. The next step, the system then identifies what media stream the alert indication was received in and from which end-user device (PTT radio). *Id.*, 7:66-67. The media stream that has the alert indication then has the volume increased over the other channels or

the media stream is assigned to a high priority spatial position (such as a specific ear in a headpiece). *Id.*, 8:1-5. This increased volume or change in spatial direction is an example of an elevation of a priority associated with the media stream. *Id.*, 5:36-40, 5:63-64. While the alert associated with the media stream may increase the volume, it is also possible that the other channels will decrease in volume. *Id.*, 8:6-7.

VI. RELEVANT LEGAL STANDARDS

32. When considering the '664 patent and stating my opinions, I rely on the following legal standards as described to me by the attorneys for Patent Owner.
33. I am informed that a patent cannot be properly granted for subject matter that would have been obvious to a POSITA before the effective filing date of the claimed invention and that a patent claim directed to such obvious subject matter is invalid (under 35 U.S.C. § 103). I am also informed that, in assessing the obviousness of claimed subject matter, one should evaluate obviousness over the prior art from the perspective of a POSITA before the effective filing date of the claimed invention and in light of the general knowledge in the art as a whole. It is my further understanding that obviousness is to be determined based on several factual inquiries:

- i. The scope and content of the prior art;
- ii. The difference or differences between the subject matter of the claim (as construed) and the prior art; and
- iii. The level of ordinary skill in the art at the time of the invention of the subject matter of the claim.

Against this background, the obviousness or non-obviousness of the claim is determined.

34. I also understand that obviousness may be established under certain circumstances by combining or modifying the teachings of the prior art. Specific teachings, suggestions, or motivations to combine any first prior art reference with a second prior art reference can be explicit or implicit, but must have existed before the date of purported invention. I understand that prior art references themselves may be one source of a specific teaching or suggestion to combine features of the prior art, but that such suggestions or motivations to combine art may come from the knowledge that a person of ordinary skill in the art would have had.
35. I understand that a reference may be relied upon for all that it teaches, including uses beyond its primary purpose, but also including teachings that lead away from the invention. I understand that a reference may be said to

teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, although the mere disclosure of alternative designs does not teach away.

36. I am also informed that additional rationales may support an obviousness determination when dealing with a known problem, including:

- i. Combining prior art according to known methods to yield predictable results;
- ii. Simple substitution of a known element for another element to obtain predictable results;
- iii. Use of a known technique to improve similar devices, methods, or products in some way;
- iv. Applying a known technique to a known device, method, or product ready for improvement to yield predictable results;
- v. Obvious to try—that is, choosing from a finite number of identified, predictable solutions with a reasonable expectation of success; and
- vi. Known work in one field of endeavor may prompt variations for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to a POSITA.

37. I further understand that whether there is a reasonable expectation of success in combining references in a particular way is also relevant to the analysis.
38. I am informed that, when I conduct my analysis, I should guard against hindsight, that is, using the claimed invention(s) to retroactively form the basis of any combination of prior art references. To guard against this, a reason must be shown to combine or modify prior art teachings to arrive at the claimed subject matter, and I have taken into consideration any teachings as expressed within the prior art references and the general common knowledge in the art at the time the claimed invention(s) was filed to guide my determination whether or not a POSITA would make any of the combinations or modifications proposed in the Petition.
39. I am not offering any legal opinions in this declaration nor am I qualified to do so. I only consider such legal standards in framing my opinions and conclusions as well as placing assertions made by Petitioner in the Petition into the proper context. Additionally, from a subject matter perspective, I understand that the petitioner always has the burden of persuasion regarding a challenge of patentability of an invention under an inter partes review.

VII. LEVEL OF SKILL IN THE ART

40. My opinions in this declaration are based on the understandings of a person of ordinary skill in the art, which I understand is sometimes referred to as an “ordinary artisan” or by the acronyms “POSITA” or “PHOSITA,” as of the time of the invention, which I understand is here assumed to be the filing date (August 16, 2011) of the ’664 patent. I understand that the person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. By “relevant,” I mean relevant to the challenged claims of the ’664 patent.
41. I understand that factual indicators of the level of ordinary skill in the art include the various prior art approaches employed, the types of problems encountered in the art, the rapidity with which innovations are made, the sophistication of the technology involved, and the educational background of those actively working in the field. I understand that, in assessing the level of skill of a person of ordinary skill in the art, one should consider the type of problems encountered in the art, the prior solutions to those problems found in the prior art references, the rapidity with which innovations are made, the sophistication of the technology, the level of education of active workers in

the field, and my own experience working with those of skill in the art at the time of the invention.

42. In this case, I assert that the level of ordinary skill in the art at the time of the invention to be as follows:

A POSITA would have had a bachelor's degree in electrical engineering, computer engineering, computer science, or a related field, and two to three years of experience in the design or development of telecommunication systems, or the equivalent. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education.

This level of ordinary skill is consistent with Petitioner's Expert:

"[A POSITA] would have had a bachelor's degree in computer science, electrical engineering, or a similar field, and would have had approximately two years industry experience in networking or communication systems."

Ex. 1002, ¶ 54.

43. As further discussed below, my opinions as stated in this declaration are valid even if the Board adopts a slightly different level of ordinary skill in the art. For example, as will be discussed throughout my report, even a person with the level of knowledge or experience described by Mr. Williams or adopted by the Board would not have a reasonable expectation of success in implementing certain aspects of the proposed combination as of the priority date of the '664 Patent.

VIII. CLAIM CONSTRUCTION

44. I understand that claim terms are generally given their ordinary and customary meaning, which is the meaning that the term would have to a person of ordinary skill in the art (POSITA) in question at the time of the invention, i.e., as of the earliest priority date of the patent. I further understand that the POSA is deemed to read the claim term not only in the context of the particular claim in which a claim term appears, but in the context of the entire patent, including the specification and file history.
45. Except as noted below, I have not been asked to provide any specific definitions for any of the terms in the claims I have analyzed. If asked, I would undertake such an endeavor. Accordingly, I have treated each claim term as it would be understood to have its plain and ordinary meaning to a POSITA in light of the specification, as outlined below.
46. I understand that some claims are independent, and that these claims are complete by themselves. Other claims refer to these independent claims and are “dependent” from those independent claims. The dependent claims include all the limitations of the claims from which they depend.

47. I have been instructed that the following terms have been construed as by the District Court and have applied these constructions to my understanding of the claims:

- i. “endpoint” means “end-user device.”
- ii. Order of steps means “[t]he steps of the claim must be performed in the recited order.”
- iii. “media stream[s]” means “audio or video or both, which may include associated data.”
- iv. “channels” has the plain and ordinary meaning.

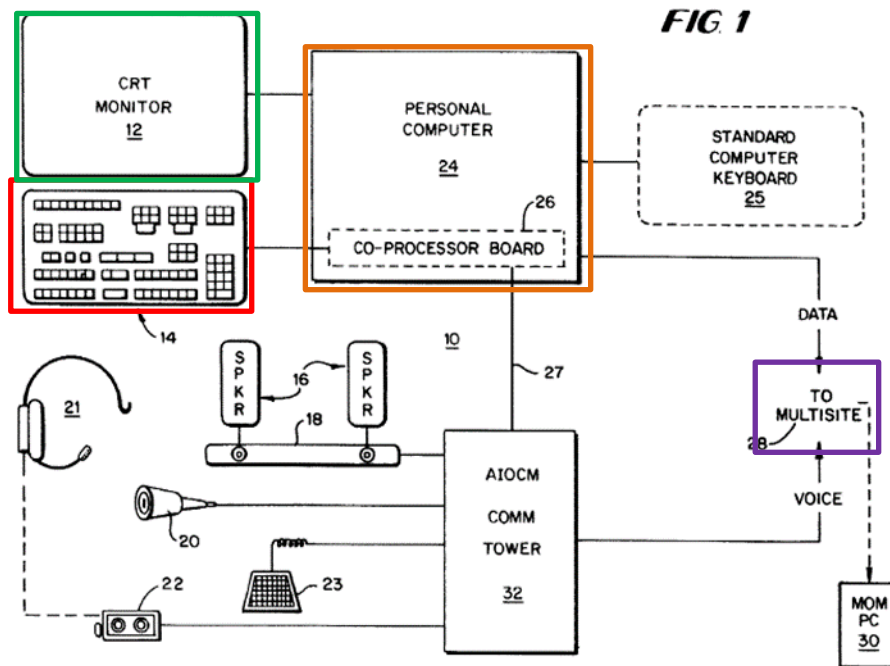
IX. OVERVIEW OF THE ASSERTED PRIOR ART REFERENCES

A. *Downs* (Ex. 1004)

48. *Downs* is entitled “Display Console and User Interface for Multisite RF Trunked System.” The filing date of *Downs* was February 14, 1992 with a date of patent granted on May 19, 1998.
49. *Downs* is directed to a console used within a radio system to assist dispatchers to more easily assist dispatchers in handling call requests. Ex. 1004, Abstract. The console is connected to a personal computer system and a specialized keyboard set up with keys allocated to specific functions. *Id.* This allows a

dispatcher to see information on the console monitor and know where the information is located and how to respond in a timely manner. *Id.*

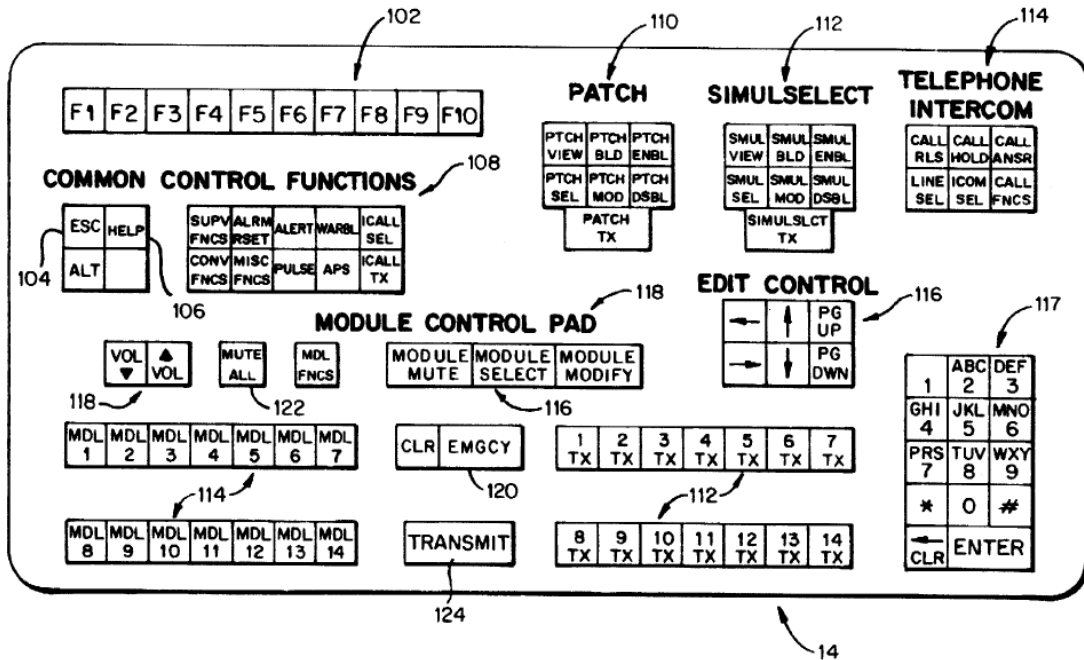
50. A representative figure shows an overview of the *Downs* system showing how the console fits within the digital trunked system of *Downs*. Ex. 1004, Fig. 1.



Ex. 1004, Fig. 1 (annotated).

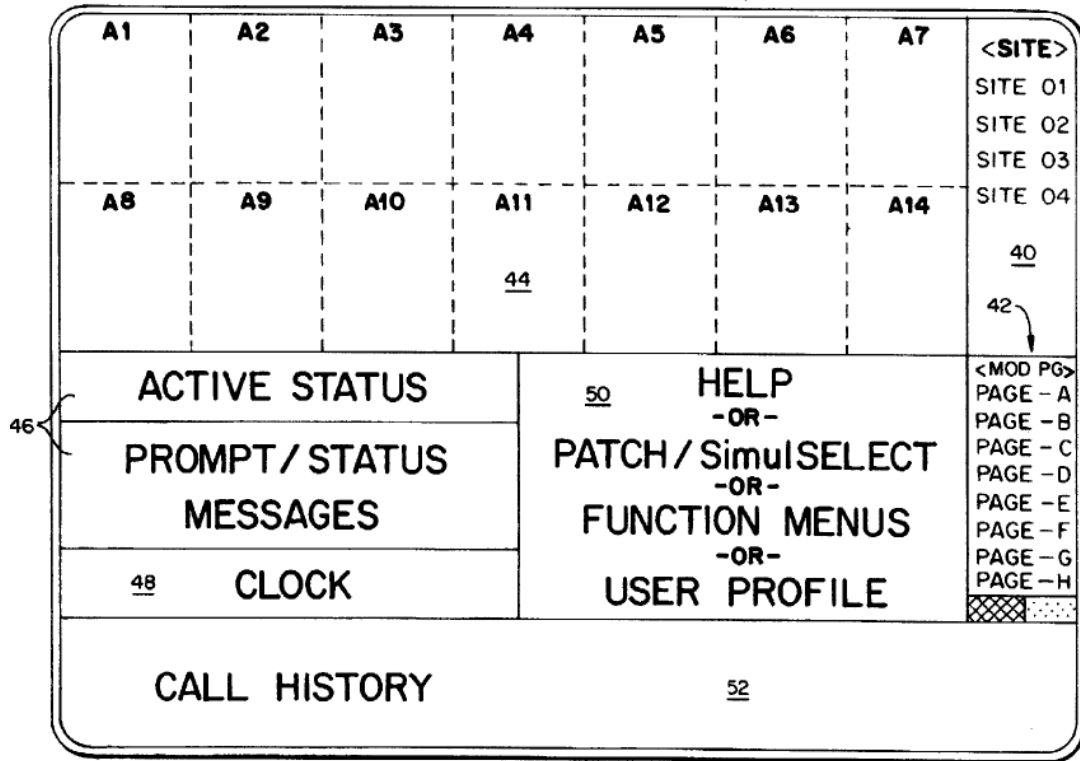
51. Fig. 1 shows the customized keyboard and monitor screen connected to a personal computer with a co-processor board located within the personal computer. The personal computer is then connected to the rest of the system through a multisite. This multisite allows the dispatcher to communicate with other end users in the system.

52. *Downs* discloses a computer console set-up to allow a dispatcher to set up individual profiles. Ex. 1004, 4:31-36. These specific profiles allow for individual dispatchers to create individualized profiles unique to their set up. *Id.* 5:14-22.
53. These profiles allow the dispatchers to pre-set downs stream effects based on their own preferences such as volume settings for dispatcher created alerts, delay times, and logical ID settings for callers. *Id.* 6:47-53.
54. Importantly, the dispatcher is able to assign emergency alerts color coding to allow dispatchers to quickly identify emergency signals from other calls coming into the *Downs* console. Ex. 1004, 6:30-46. Red is the color assigned to emergency signals in the *Downs* console. *Id.*
55. These emergency indications are assigned to the emergency calls by the dispatcher after the dispatcher determines that the call should be classified as a call state. Ex. 1004, 6:40-44. In order to achieve such a call status, *Downs* has a keyboard designed with keys allocated to dedicated conditions. Ex. 1004, 8:29-35.
56. Figure 6 of *Downs* shows the keyboard designed to work with the *Downs* system. The buttons “CLR” and “EMGCY” are the buttons dispatcher press to achieve call statuses and clear such statuses from the system.



Ex. 1004, Fig. 6. Additionally, the volume keys of 118 allow the dispatcher to change and manipulate the incoming calls with the volume keys to set specific volumes for calls. *Id.*, 8:40-47.

57. Fig. 2 of *Downs* shows the monitor setup used in the *Downs* ' system.



Ex. 1004, Fig. 2. The boxes of A1-A14 show the specific call modules that are received by the dispatcher. Ex. 1004, 6:1-5. The display of Fig. 2 is static, but the channel information contained within each window may change based on input from the dispatchers regarding the channels in use at a given time.
Id.

58. Fig. 3 of *Downs* depicts a call window that will appear in column and rows A1-A14. Ex. 1004, 6:30-33.

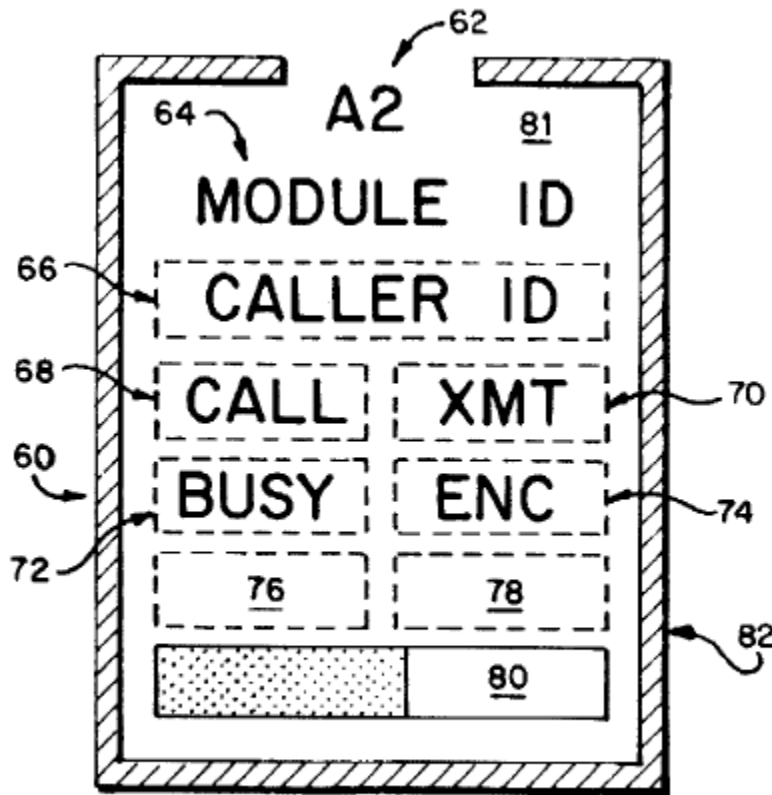


FIG. 3

Ex. 1004, Fig. 3. These windows depict the emergency color as previously discussed and are assigned by the dispatcher in these windows to appear on the monitor in Fig. 2. Ex. 1004, 6:40-46.

59. *Downs* discusses what an endpoint should do with specific calls coming into the communications center by creating an easy to use console and keyboard that allows dispatchers to handle large volumes of calls with ease. Ex. 1004, 11:25-38. *Downs* intends for the dispatcher to control the communication environment in a manual fashion and free the dispatcher to handle increased

demands of communication systems. *Id.*, Abstract. I think that the following statement best describes the goal of *Downs*: “[t]here is a need for dispatcher consoles that displays call information in an easy-to-comprehend manner, that can be simply configured to suit individual dispatchers. An inventive dispatch console has been developed that is easy for the dispatcher to operate through a customized keyboard and CRT computer display.” *Id.*, 3:4-9.

B. *EDACS* (Ex. 1005)

60. *EDACS* is a Telecommunications Industry Association standard published as “A system and Standards Definition for a Digital Land Mobile Radio System, TSB69.” Ex. 1005, 1. This standard describes digital access within communication systems to allow cross-compatibility between different companies. *Id.*, 3.
61. *EDACS* discloses how different data system points may be able to interact and behave within a trunked system. Ex. 1005, 3. The envisioned system is signified in Fig. 2 as the “General System Model.” *Id.*, Fig. 2.

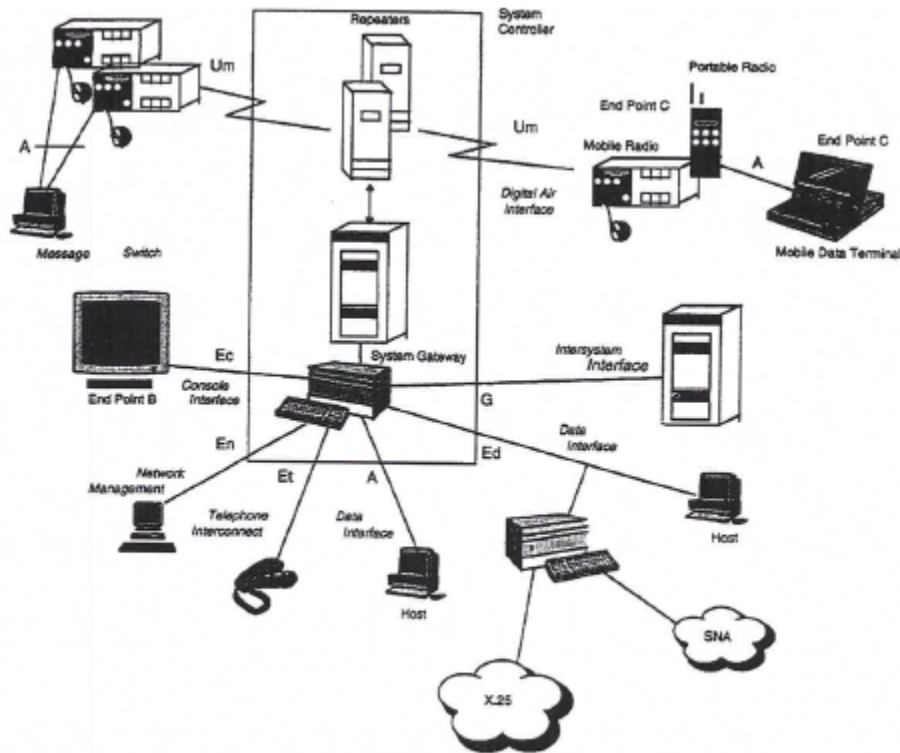


Figure 2. General System Model

Ex. 1005, Fig. 2. This Figure depicts multiple endpoint users interacting via repeaters to connect with a system gateway with further endpoints, such as endpoint B. *Id.*

62. *EDACS* describes how a trunked radio system will operate within a system.

Ex. 1005, 13-14, 17-18. The system uses both group calls and individual calls to communicate the system. *Id.*

63. *EDACS* discloses a master control channel that transmits at a set frequency of 9600 bps NRZ. Ex. 1005, 23. This control channel allows new devices to search and synchronize to the system by finding this control channel. *Id.*

Once the devices are synchronized, the system allows for inbound signaling.

Id.

64. The call system envisioned by *EDACS* has two types of call transmissions, messaged trunked communications or transmission trunked communications.

Ex. 1005, 25.

65. Transmission trunking allows for quick allocation and deallocation of specific transmissions to working channels. Ex. 1005, 25. Once the radio user—such as a police officer—presses the transmission button, the call begins on the control channel. *Id.*, 61-62. This is exemplified in Fig. 8,

reproduced below.

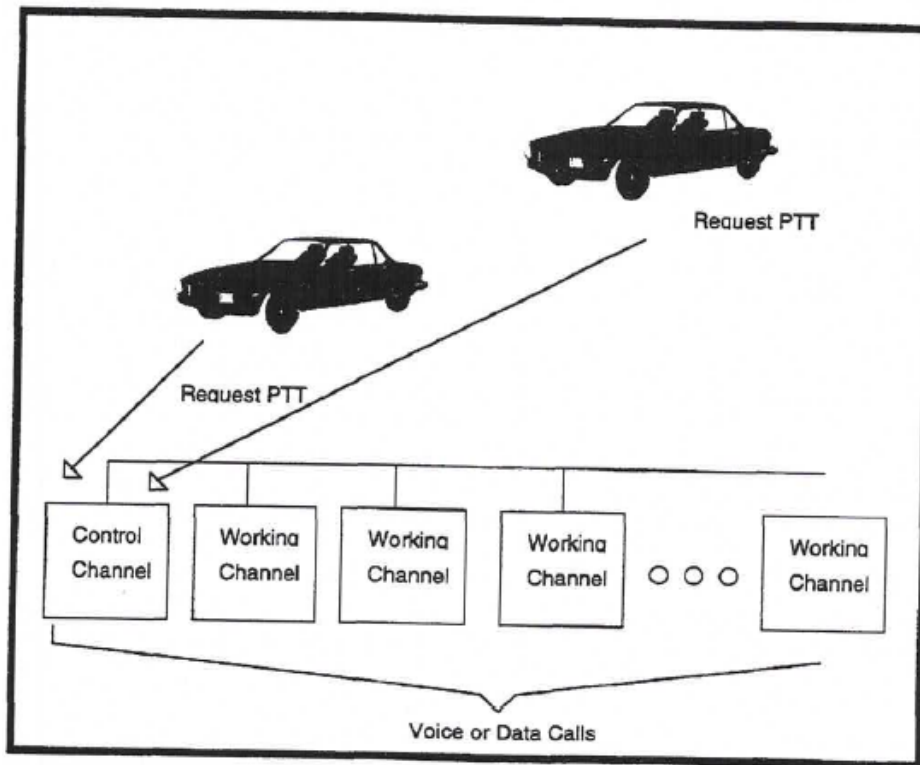


Figure 8. Request PTT

Ex. 1005, Fig. 8, 61.

66. Once the control channel receives the call request, the call is transmitted to a working channel. *Id.*, 62-63. This request schematic is exemplified in Fig. 9 of *EDACS*.

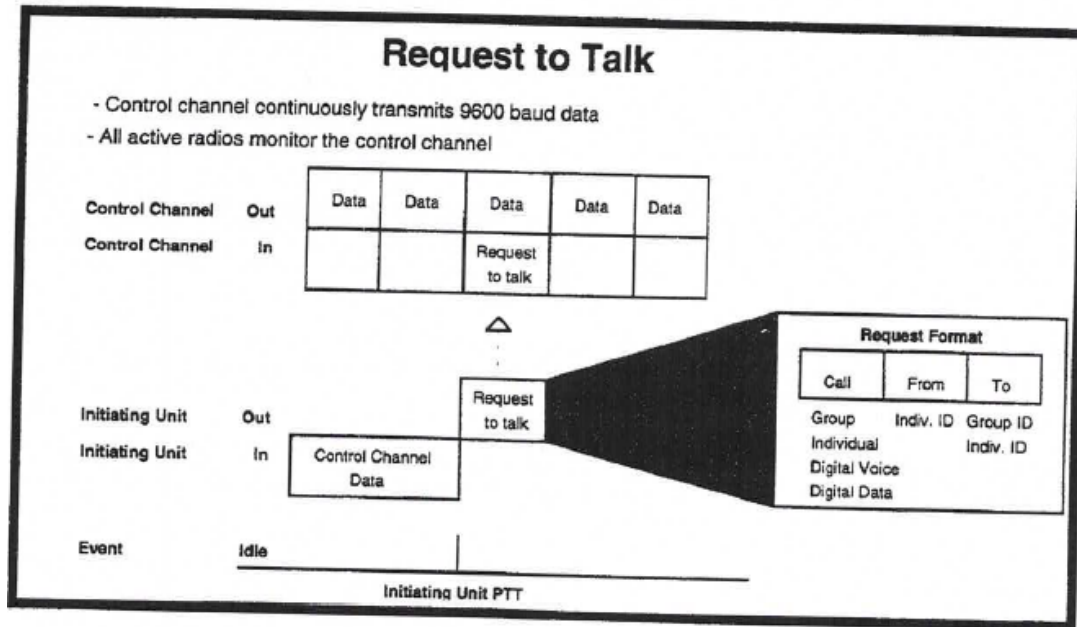


Figure 9. Request To Talk

Ex. 1005, Fig. 9, 62.

67. Once allocated to a working channel, the system transmits a “OK-to-transmit-prompt tone” to the officer to signal that the transmissions may begin on the channel. *Id.*, 63-64.
68. Once the officer released the PTT button, the working channel is de-allocated and the unit returns to the control channel to begin transmission call assignment again for the next PTT. *Id.*, 65.
69. Message trunking follows a similar format as *EDACS*’ transmission trunking with the caveat that a specific hang time is allocated to the transmissions to prevent the working channel from being dropped. Ex. 1005, 65. This allows

for other groups in the system to access the channel without having to repeat the channel acquisition process. *Id.*

70. Emergency calls in *EDACS* are designated as “emergency group calls” and are initiated by pressing the emergency button on the radios. Ex. 1005, 25, 51. “Emergency group calls” are message trunked in the *EDACS* system. *Id.*, 25. Such calls begin as emergency requests on the control channel and are assigned to working channels once the system receives the request. *Id.* Should all working channels be busy at the time the system receives the “emergency request,” the request is placed at the top of the queue for priority allocation. *Id.*, 25, 29.
71. The control channel of *EDACS* is not used for back and forth communication. Ex. 1005, 50. Instead, the control channel is a repeater channel where control information is continually transmitted and channel request or channel statuses are received from the field units. *Id.* Field radios will continually monitor the control channel when not on an active working channel further signifying that the control channel is not meant for back and forth communication. *Id.*
72. In contrast to the control channel of *EDACS*, the working channels allow for multi-directional communication between field units and central command centers. Ex. 1005, 57. As *EDACS* describes “All repeater channels except

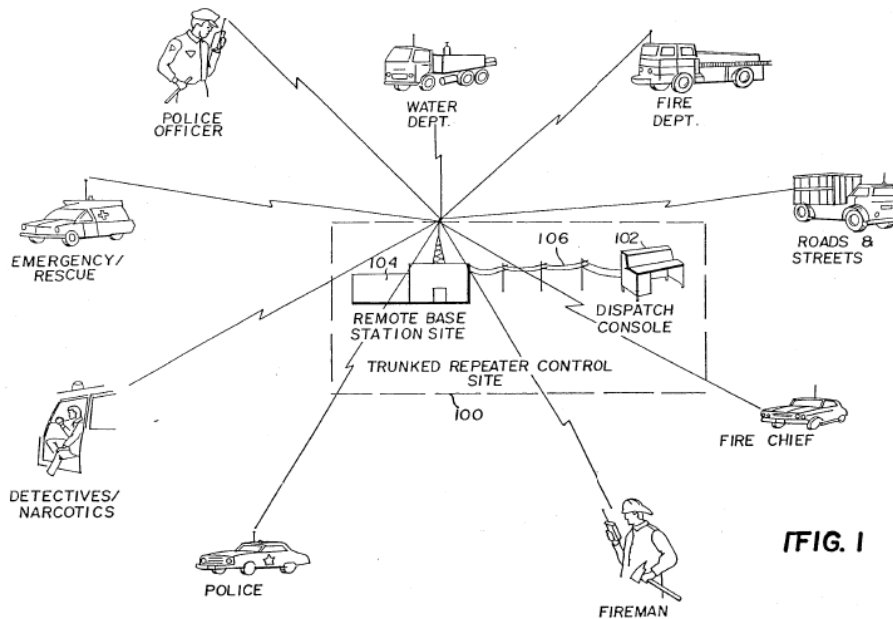
the single control channel . . . intercommunicate either encryption, mutual aid, analog voice, digital voice, or digital data, through a working channel.” *Id.*, 57. *EDACS* discloses that the working channels are the communication channels of the system and are specifically designed to allow back-and-forth communication.

C. *Childress* (Ex. 1031)

73. *Childress* is entitled “Trunked Radio Repeater System.” The filing date of *Childress* was June 3, 1987 with a date of patent granted on February 27, 1990.
74. *Childress* is directed to a digitally trunked radio repeater system which improves timeliness of channel acquisition and drop. Ex. 1031, Abstract. This system uses a multi-channel system to communicate. *Id.* The control channel transmits digital channel requests and assignment messages between a central site and the mobile units. *Id.* This allows for channel request operations to be sent by mobile units on the control channel. *Id.* Once an assignment message is received, the system transmits the mobile unit to a working channel.
75. *Childress* utilizes both message and transmission trunking in the system. Ex. 1031, Abstract. The transmission trunking of the *Childress* system, the

channel used for a call is returned to the pool of available working channels once the call PTT button is unpressed. *Id.*

76. Fig. 1 depicts the system of *Childress*.



Ex. 1005, Fig. 1. Mobile units such as police and fireman communicate with the remote base station site. *Id.*

77. A message is received on the control channel for a call. Ex. 1031, 3:43-49.

This call is then assigned to a working channel by a dispatcher to allow communication on the new channel. *Id.*, 3:43-53.

78. Emergency requests begin on a special digital channel as a request signal on a control channel. Ex. 1031, 13:16-18. The central controller sends an automatic assignment signal to the call requester which signals which channel

should be allocated. *Id.*, 13:18-23. Once the call is finished, the channel is dropped and placed back into the working channel pool. *Id.*, 15:1-6.

D. *Kim* (Ex. 1008)

79. *Kim* is entitled “TELEVISION SET AND METHOD FOR NOTIFYING A DISASTER SITUATION.” The filing date of *Kim* was June 3, 1987 with a date of publication was April 22, 2004.
80. *Kim* is directed to a television system that broadcasts emergency-warning broadcast messages. Ex. 1008, Abstract. This system uses a predetermined channel to send the broadcasting messages without monitoring other channels for such emergency broadcasts. *Id.*, 4:17-25.
81. The broadcast data receivers include tuners and an IF processor which receives the broadcast data to perform the channel selection. Ex. 1008, 24:13-18. Once the channel is selected, the control signal will output IF data in response to the operation and converts the IF data from the tuner into baseband data. *Id.*, 24:15-21.
82. The audio data from the audio decoder will send such data to the amplifier which will amplify the data and output an audio signal. Ex. 1008, 25:3-10. The different video data is applied to the decoder to send the video data to the

graphic mixer and depicts the associated display signals in tandem with the audio signal. *Id.*, 25:11-19.

83. When an emergency warning broadcast signal is received, the emergency data information is applied to the controller to allow the Television to be controlled. Ex. 1008, 25:20-26:6. The broadcast information detects the broadcast start information on the channel which directs the controller to power on and control the television display. *Id.*, 26:6-14.
84. The emergency broadcast information is decoded by a decoder in the television set to determine if the emergency warning start code matches the reception area, then the television will broadcast the emergency signal. Ex. 1008, 26:18-27:20. The television may increase the volume of the television with the controller within the television directing the speaker to increase volume for the television set. *Id.*

X. THE CHALLENGED GROUNDS

A. Ground 1: *Purported Obviousness by Downs in view of EDACS*

85. I understand that Petitioner asserts that the '664 Patent would be obvious in view of *EDACS*, but I disagree for several reasons.
86. I will lay out several important differences between the '664 Patent and *Downs* in view of *EDACS*, including that the channel configurations for both

systems is different. To highlight these differences, I will dive deeper into the references along with pertinent background information to put the teaching of *Downs* and *EDACS* into proper context. First, I will address *EDACS* system and then turn to the '664 Patent's system and methods which will highlight the key differences to establish that *EDACS* control channel is not a media stream as claimed, and note that the media channel allocation in response to call requests received via a control channel is not a "media stream" that includes the claimed alert. In doing so, I will show that a POSITA would not find the teachings of *EDACS* to render obvious the claims of the '664 Patent.

87. Additionally, I will lay out the differences between *Downs* and the '664 Patent. To highlight these differences, I will dive deeper into the reference and note that the disclosure of *Downs* is directed to a console interface for dispatchers to interact with a communication network. Nothing in *Downs* involves allocating or adjusting priority to a media stream before it is reached at an endpoint nor is there an alert that is received in a media stream. As explained below, these distinctions will make clear that the dispatcher console of *Downs* does not disclose receiving and adjusting alerts in a media stream before the media stream reaches an endpoint.

88. To start, *EDACS* does not disclose or render obvious “receiving an alert in one of the media streams” and “elevating a priority associated with the media stream receiving the alert.”
89. Next, *Downs* does not disclose or render obvious two of the claimed limitations of the ’664 Patent. The limitation of “an adjustment is made to how the media stream is provisioned to an endpoint” and “elevating a priority associated with the media stream receiving the alert.”
90. Lastly, *Downs* and *EDACS* do not render obvious independent claims 11 and 16 based on their recitation of similar elements to claim 1 such as claim element 1[b] and 1[c]. Since the Petition fails to show that claim 1 is unpatentable, then claims 11 and 16 are also patentable on the same basis. All claims that depend from claims 1, 11, and 16 are also patentable for being dependent from valid independent claims.
1. *EDACS* does not disclose or render obvious the claim limitation of “receiving an alert in one of the media streams”
91. As discussed above, *EDACS* is directed to a trunked communication system which utilizes a control channel as a master channel to assign working channels for bi-directional communication. Ex. 1005, 13-14, 17-18. The system uses both individual and group calls within the system to communicate. *Id.* Use of channels in this fashion allows for efficient and

timely call allocation within the system and assures that calls are handled in a timely manner.

92. *EDACS* describes that its trunked radio system has a master control channel that will operate within the system and transmits at a set frequency. Ex. 1005, 23. This set frequency will allow for radios to find the control channel in order to gain access to the system by first finding the frequency. *Id.* Once the radio finds the control signal, the radio will then synchronize to the system and will allow inbound signaling on this control channel. *Id.*
93. In an ordinary setting, the system call sequence will be carried out in a transmission trunked manner. Ex. 1005, 61-62. In this setting, the officer will press the push-to-talk button to activate a call request signal, which is sent to the dispatch system on the control channel. *Id.* In doing so, the dispatch system will receive this call request and ascertain if there are any free working channels to assign this call request. *Id.*, 62-63. Once the system determines that there is an unused working channel, the system will assign the request to that working channel. *Id.* Upon assignment, the control channel transmits an “OK-to-transmit” message, and the user device would play a specific sound which will signal to the officer that they are approved to begin transmission on the working channel. *Id.*, 63-64. The working channel then carries the bi-

directional communication between the officer and another individual in the system. *Id.* Once the officer finishes the call, the working channel is released back to the pool of working channels. *Id.*, 65.

94. One critical distinction of the '664 Patent requires that the limitation of claim 1 reciting “receiving an alert in one of the media streams” requires the alert to be received in the same media stream that is being monitored. *EDACS* instead discloses sending emergency alerts on the control channel. Ex. 1005, 25, 50. The control channel is used as the master channel in the *EDACS* system. *Id.*, 61. *EDACS* then **assigns** the call request and call to a **new** channel to perform the communication aspect. *Id.*, 25. This transfer is not what the claimed limitation speaks to and is wholly at odds with the plain language of the claims in the '664 Patent. The claim language states that “an alert in one of the media streams” to be the limitation. If the media stream receives the alert, then that would meet the limitation, but any transfer from the originating channel would no longer be within the confines of the claim language.
95. The Petition and Mr. Williams **ignore** this critical distinction between the plain meaning of the claim language and the disclosure of *EDACS*. Petition, 31. The Petition and Mr. Williams seem to agree that there is a transfer from the control channel to a new working channel that allows “[a]ll members of

the talk group are notified of the emergency condition,” yet in this quote, there is no mention of an alert being sent on the working media channel. *Id.* While there is a notification of the emergency condition over the control channel, this is not the same thing as the claimed alert which is detected over the working media channel. Upon further reading of the cited passage, a POSITA would understand that the actual condition mentioned by the Petition is actually discussing the emergency sent on the control channel and not sent on any working channel. Ex. 1005, 43. Again, the Petition and Mr. Williams are attempting to pick individual aspects of the disclosure to fit their narrative without mentioning other aspects of the disclosure. An emergency in this context is more aptly described as an indicator sent on the control channel and more readily described in section 4.5.2.1.2 “Emergency Group Call.” Ex. 1005, 25. In this section, a POSITA would understand that the indicator of an emergency condition is transmitted on the control channel after the “emergency call is initiated by pressing the emergency button on the radio.” *Id.*

96. Mr. Williams alleges that the alert in *EDACS* is sent as a coupled message with the call. Ex. 2006, 43:19-23. This is not a correct characterization of *EDACS* as the alert is not the same thing as the call. If a call was the alert,

then there would not be a reason to distinguish the call from a call request sent over the control channel to then have the call placed into the working channel. In other words, the call request is made before a call is established in *EDACS* as some call requests may be denied and never reach transmissions to be an actual call. *EDACS* discloses that a call request is sent over the control channel, then the call is placed into the working channel by the system in response to the request. Ex. 1005, 25. Since the call and call request are not indicated as being the same and are treated differently within the well-established *EDACS* standard, then they cannot be on the same media stream. A POSITA would understand that by the representations of *EDACS* describing the call and call request being separate, then the two are not constituted as the same bundle. This notion is further elaborated when taken into context that the control channel is not meant to transmit audio and video data. Ex. 1005, 50. Trying to transmit communicable data over the control channel would simply frustrate the purpose of the control channel and would amount to no efficient transmission of messages across the control channel entirely.

97. In furtherance to the above, the District Court has defined media stream to include “audio or visual [data] or both” as a requirement for something to be

a media stream. Ex. 2004, 42. The control channel does not carry audio or visual data as described in the glossary of *EDACS*. Ex. 1005, 50 (“system control information is continually transmitted and channel request/status information” is what is transmitted on the control channel). Since the control channel only transmits information related to channel requests and status information, this is not audio or visual data and is instead channel identifier information.

98. The Petition’s conclusion that *EDACS* discloses the claimed invention is based on single conclusory statements made by Mr. Williams that lack merit when looking at the *EDACS* reference as a whole. Petition, 31. Instead, if the *EDACS* reference were read as a whole in light of the Claim Construction order, a POSITA would know that *EDACS* control channel is not a media stream and is instead just a channel to allow radios to transmit system messages rather than audio and/or visual data.
99. The control channel of *EDACS* is not used for back-and-forth transmission of audio and/or visual data. Ex. 1005, 50. Instead, the control channel is a channel where control information (data) is transmitted and channel request or channel statuses are received from the field units. *Id.* Field radios will continually monitor the control channel when not on an active working

channel further signifying that the control channel is not meant for back-and-forth media stream communication. *Id.* Since the control channel is not used for any type of direct back-and-forth media stream communication, a POSITA would understand that the control channel of *EDACS* is not a media stream that is provisioned to an endpoint.

100. A POSITA understands that the control channel is not a media stream as the media stream is required to include audio and video data. As explained above, and understood by the *EDACS* standard approval board, the control channel cannot be a media stream as it does not include audio and video data. Instead, it includes control messages for emergency requests and call requests from a mobile unit to a communication center. No disclosure in *EDACS* suggests anything to the contrary. To consider *EDACS*' control channel as including anything else would be contrary to the teachings of the reference.

2. *EDACS* does not disclose or render obvious the claim limitation of “elevating a priority associated with the media stream receiving the alert”

101. The limitation of “elevating a priority associated with the media stream receiving the alert” is not met by the disclosure of *EDACS*.
102. In addition to the above with *EDACS*' control channel not being a media stream, *EDACS* does not disclose any elevation of priority associated with a

media stream that conveys the alert. The plain reading of the claims of the '664 Patent require that the media stream which conveys the alert should be the same media stream that is elevated. As an initial matter, since *EDACS* does not receive an alert in a media stream, then it follows that there cannot be an elevation of a media stream that does not exist. As such, a POSITA would understand that since *EDACS* does not disclose an alert in a media stream, then there cannot be an elevation of a media stream that receives the alert.

103. *EDACS* discloses that a call request is received on an inbound control channel. Ex. 1005, 25. This system then assigns the call to a working channel. *Id.* This working channel is not the same channel as the control channel as defined by the glossary of *EDACS*. Ex. 1005, 57. Working channels are instead described as “[a]ll . . . channels except the single control channel operate as working channels. Radios intercommunicate . . . through a working channel.” *Id.* Since the working channel is not the same channel that receives the call request, then this is no longer the same channel that received the call or call request as defined by the Petition. Petition, 31.
104. As stated above, the District Court has defined media stream to include “audio or visual [data] or both” as a requirement for something to be a media stream.

- Ex. 2004, 42. A media stream is not formed in *EDACS* until after a call is assigned to a working channel when voice is subsequently transmitted. Ex. 1005, 25. At this point, *EDACS* does not alter the working channel for the duration of the conversation. Assignment of priority in *EDACS* occurs before the media stream is created. Ex. 1005, 25. The priority groups are already created and are waiting to be assigned by the system upon receiving an alert on the control channel. *Id.* This manner of static configuration is a “pre-determined” system which is different from the requirement that the alert related parameters be configured after the media stream is already identified and established. Without an alert coming on the media stream receiving the alert, the claim limitations of the ’664 Patent cannot be met. Ex. 2004, 16.
105. In plain contrast to the meaning of *EDACS*, the Petition attempts to cherry pick the word “priority” to fit the narrative of their argument. Petition, 34. Again the Petitioner and Mr. Williams are mistaken. The context for the quote “[t]he system automatically assigns the highest priority to the talk group” is not an actual priority assigned to an alert being received on the control channel. Instead, the full context of this quote is better characterized as meaning the priority of the talk group is pre-assigned to the emergency calls since these should take highest priority in the system. Ex. 1005, 31. *EDACS*

explains that the priority within the system should give “higher priority” to calls with greater ranking of importance such as those of a life-threatening situation. *Id.* In doing so, *EDACS* pre-assigned this priority listing if two calls come in at the same time, then the emergency call request should be assigned first to a working channel. *Id.* This assures that police and other first responders faced with a life-threatening situation are able to establish communication on a working channel before other non-life threatening communications in the system. *Id.*

106. A POSITA understands that the claims of the '664 Patent require an elevation of a priority to occur to the same media stream that the alert was received on. Ex. 1001, cl. 1. Anything else would not fit the limitations of the claims. Petitioner's erroneous assertions that a pre-assignment of a call type to have priority over other calls is misplaced and contrary to the plain reading of *EDACS*. A POSITA would understand that the alleged priority assignments do not originate from a media stream and instead are pre-assigned before any alert is generated by a call request.
107. As such, a POSITA would understand that *EDACS* does not render obvious the claims of the '664 Patent.

3. *Downs* does not disclose or render obvious the claim limitation of “elevating a priority associated with the media stream receiving the alert”

108. I disagree with the Petition’s and Mr. Williams’ assertion that *Downs* renders the claim element of “receiving an alert in one of the media streams.” Specifically, in my opinion, *Downs* discloses a console endpoint interacting with a system with a dispatcher affecting change of channels after the media stream reaches the endpoint console. So, the Petition fails to establish that *Downs* discloses the claimed elements. My analysis below references elements of claim 1, but the analysis also applies to the other independent claims that recite the same or similar elements.
109. I will lay out several important differences between the ’664 Patent and *Downs*, including that *Downs* is an endpoint console that receives information on a channel that is manually affected by a dispatcher only *after* the information is received at an endpoint. I will follow these assessments by also performing a specific analysis of the assertions and conclusions made by the Petition and Petitioner’s expert Mr. Williams. To highlight these differences, I will address the disclosures of *Downs* then turn to the claim language and disclosures of the ’664 Patent to highlight the key differences that will establish that *Downs*’ console is an endpoint in the communication system

and that the effects of the dispatcher's actions fall outside of the claim recitation order of the '664 Patent.

110. More particularly, these differences between *Downs* and the claims of the '664 Patent include differences in how prioritization of alerts is achieved and how an endpoint is positioned in the communication environment. In *Downs*, the console used by the dispatcher is an endpoint receiving channels, in contrast, the '664 Patent's system automatically adjusts media streams before they reach an endpoint. Ex. 1001, cl. 1. As explained below, these distinctions make clear the *Downs* console system is an endpoint and any characterization of affecting a channel happens after the channel reaches an endpoint.
111. As discussed above, *Downs* is directed to a console used within a trunked radio communication system that assists dispatchers in handling call requests. Ex. 1004, Abstract. To achieve this, *Downs* created a novel keyboard/console interaction that allows dispatchers to create personalized interface screens to increase knowledge of the arrangement of channels and icons. *Id.* The computer console set-up allows the individual profiles to be set up and loaded to the computer once a shift starts. *Id.*, 4:31-36, 5:14-22. One of the benefits of this type of profile set up permits the dispatcher to pre-allocate volume levels to specific settings based on their own preferences. *Id.*, 6:47-53. In

doing so, the dispatcher uses their own preferences to set volumes for alerts, delay times, and any Logical ID settings for channel specific callers. *Id.* *Downs* further discloses that the “common functions ***are assigned dedicated function keys*** include the establishing of patch 110; simulselect 112 and telephone/intercom communications 114; edit control 116 such as paging through screen displays and cursor and position control on the display; muting the console speakers 122; and ***emergency condition*** 120. A dedicated color coded key 124 sends a push-to-talk command over the selected communications module. The foot switch 23 can also serve this transmit function. Transmissions to any other module is made by depressing the TX key 112 corresponding to the communications module.” *Id.*, 8:29-40. So the emergency conditions are dedicated to function keys that need to be activated by the dispatcher; in contrast the ’664 Patent’s system does not require any action by the dispatcher.

112. Another important aspect of *Downs* includes the ability of dispatchers to manually adjust how alert communications are presented on the console. Ex. 1004, 6:30-46. Once a call comes into the dispatch console, the dispatcher then listens to the call and determines that the call should be given priority over other calls within the system and can manually make that change. *Id.*

The color given to such emergency demarcations is red and is highlighted on the background of the call window shown in Fig. 3 of *Downs* which is reproduced below.

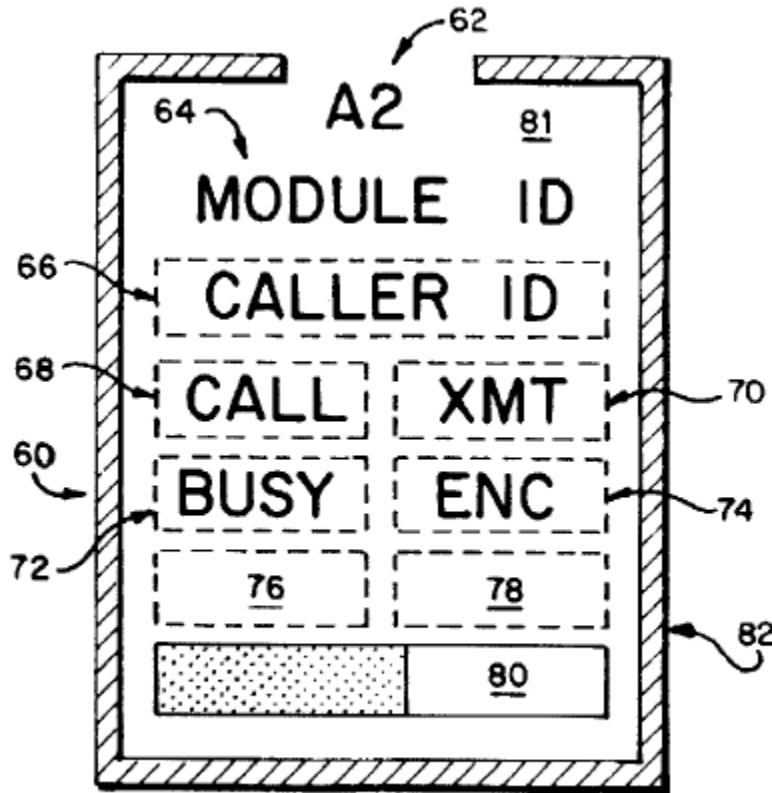


FIG. 3

Ex. 1004, Fig. 3. The background of this specific call module will change from the normal background color to red to indicate the change in priority. *Id.*, 6:40-46. These changes occur only *after* the call is received by the dispatch console and in fact the disclosures of the system support this conclusion. *See id.*, 8:29-40.

113. *Downs* describes in detail how a keyboard is set up by a dispatcher and how each keyboard should operate in the system of *Downs*. Ex. 1004, 8:1-47. The disclosure of *Downs* confirms that the console keyboard interaction drives responses to the system after the channel is heard by the dispatcher. *Id.*, 8:1-6. *Downs* states that the “dispatcher inputs commands to the console through a customized keyboard.” *Id.*, 8:1-2. A POSITA would understand that *Downs*’ driving operating force lay in the manual operation of the console by the dispatcher and not in the console system making automatic changes. Further support for this can be found in the setup of the keyboard which allow the volume keys to be changed depending on any call that is selected to be changed. *Id.*, 8:40-47. Lastly, the emergency system of *Downs* is controlled by the dispatcher. The buttons “CLR” and “EMGCY” are meant to allow the dispatcher to assign emergency indications to channels or clear the emergency signal after the call is completed. *Id.*, Fig. 6, 8:30-36. A POSITA would understand that this disclosure relates to the dispatcher creating the emergency signal within *Downs*’ system instead of the channel itself.
114. In contrast to the disclosure of *Downs*, the ’664 Patent instead intelligently elevates a priority associated with a given media stream. Ex. 1001, cl. 1, 3:56-65. This dynamic adjustment allows individuals connected to the

communication system to rest-assured that an emergency indication, such as an indication of a life-threatening emergency, will not be missed due to the volume of channels being decreased. *Id.*, 3:56-4:9. In operation of the PTT by an officer, the alert is received from the PTT mobile radio, the system makes an adjustment along the media stream to the endpoint by elevating this priority over other media streams within the system to ensure that the message and consecutive communications are properly received. *Id.* The system itself has the ability to detect which media stream should be given priority. *Id.*, 2:37-50. The way the system is able to distinguish such priority indications involves use of a router media service and a universal media service. *Id.*, 2:37-50, 5:26-28. These acts in conjunction to intelligently understand which stream should be given priority over other streams and the UMS shifts the media streams and automatically determines and adjusts the media stream volume so that the propagation to the endpoint is proper. *Id.*, 5:26-30. This disclosure is exemplified in the claims of the '664 Patent as a media stream will carry an alert, elevate the priority of the media stream, and adjust how the media stream is provisioned to the endpoint. *Id.*, cl. 1.

115. With this understanding of the technology of *Downs* and the '664 Patent, the Petition's incorrect analysis incorrectly identifies aspects of *Downs* as being

within the order of operations of the claims of the '664 Patent when in fact they are not.

116. A critical distinction between *Downs* and the '664 Patent is that *Downs* is directed to how an endpoint interacts with a system while the '664 Patent discusses how the media stream itself is affected ***before*** it reaches an endpoint. The Petition and Mr. Williams assert that *Downs* meets the limitations of the claims yet agree that *Downs*' console is an endpoint. Petition, 34, 36 (establishing that the "dispatcher console" of *Downs* is an endpoint); Ex. 2006, 22:24-23:2; Ex. 1002, ¶ 165. As the District Court has construed, and a POSITA would understand, the order of operations for the claims of the '664 Patent need to be completed ***before*** the media stream reaches the endpoint. Ex. 2004, 16. Since the Petitioners agree that the console in *Downs* is an endpoint, then any action occurring after the channel reaches the endpoint is not within the plain language of the claims. It is my opinion that on this basis, *Downs* does not render obvious the claims of the '664 Patent and a POSITA would agree that operations happening after the order of the claims is not within the meets and bounds of the claims. A POSITA would understand that the console system in *Downs* is the endpoint and the manual configurations by the dispatcher are not within the bounds of the claims of the '664 Patent.

117. Petitioner alleges that since a talk group's signal is automatically broadcast louder than other groups, then this constitutes an elevation of a priority since "[the media stream] can be clearly heard over other, lower-priority media streams" on a headset. Petition, 34 (citing Ex. 1004, 3:17-25, 6:30-53). This is a blatant mischaracterization of the disclosure in *Downs*. The Petitioner, and Petitioner's expert, seem to believe that the system is affecting the change of the media stream and how the media is heard in the headset, but this is not the case. Instead, the volume is only affected by pre-set aspects set by a dispatcher *after* the dispatcher determines that a channel is a priority. Ex. 1004, 8:41-48. A POSITA would understand that the dispatcher is the master controller in this system described in *Downs* since the dispatcher chooses what each channel should receive as a priority indication. *Id.*, 8:49-53. Indeed, even looking at the citations of the Petition, a POSITA would come to the same conclusion as when these citations are taken in context, the disclosure relates to how the *dispatcher* is affecting the console and channels. *Id.*, 6:30-53. To start, the "volume levels [are] set such that emergency calls are broadcast louder . . . than other calls." *Id.*, 6:50-51. Looking at the plain language of the quote, the volume levels are *set* by the dispatcher by their individual dispatcher profile when reading the rest of the paragraph. *Id.*, 6:47-

50. Since the dispatcher profile is pre-setting these levels, then this disclosure cited by the Petition is not affecting any actual media stream received by the console system and is instead describing how a dispatch profile *may* set up their individual dispatch profile. A POSITA would understand that this disclosure is not relating to affecting actual media streams and is instead directed to orienting and “setting up” dispatcher profile pre-set preferences.
118. Taking the assessments made above, a POSITA would understand that *Downs* does not disclose the limitation of “elevating a priority associated with a media stream receiving the alert” since *Downs* discloses how a dispatcher interacts with an endpoint. Nothing in *Downs* would be construed as disclosing the claimed element since the elevation of the priority is required to be adjusted so that it is provisioned differently to the endpoint. As Petitioner and Mr. Williams agree, *Downs*’ console is an endpoint. As such, a POSITA would understand that aspects affecting a media stream after reaching the endpoint would not fall within the meaning of the claimed order of operations.
4. *Downs* does not disclose or render obvious the claim limitation of “an adjustment [being] made to how the media stream is provisioned to an endpoint in the communication environment”
119. The arguments, discussions, and conclusions raised above regarding *Downs* being an endpoint within the communication system is applicable for this

limitation of the '664 Patent. Indeed, looking at the plain language of the limitation, requires that the adjustment be made to the media stream affecting how the media stream is provisioned to the endpoint. I disagree with the Petition and Mr. Williams in their conclusion that *Downs* discloses this limitation as *Downs* does not affect the media stream before it reaches an endpoint.

120. With the explanation of the technology explained *supra* (paragraphs 114-118), the Petition erroneously analysis incorrectly identifies the step in which the dispatcher affects the channels. *Downs* system remains an entirely different method of affecting the media streams compared to the claims of the '664 Patent.
121. The Petition seems to allege that the auditory adjustment of volume is the claimed “adjustment [being] made to . . . an endpoint.” Petition, 34-36. The Petition is incorrect in this assertion. According to the Petition, the dispatcher manually adjusts how the modules in the communication environment are provisioned after the call requests are received. *Id.*, 36. The Petition misstates the disclosure by cherry-picking aspects to fit their narrative. When taken as a whole, the actual context of this disclosure occurs *after* the media stream/channel reaches the endpoint of the console. Ex. 1004, 8:41-45

(“Through the use of the customized keyboard, the dispatcher can choose a particular communications module by depressing the appropriate key 114, e.g. MDL 3. to pick module 3. Once this module has been picked, then the dispatcher can adjust its volume via volume keys.”). After looking at the actual language of the disclosure, a POSITA would understand that the dispatcher affects changes happening to the module after the media stream is received at the console. Nothing in the disclosure relates to how the media stream is provisioned or affected *before* it reaches the console in *Downs*.

122. This notion is further solidified by the Petition admitting that the dispatcher pre-sets any action that will happen to the modules displayed on the console interface. Petition, 36. This action of pre-setting emergency conditions instills that the console is merely acting as a static endpoint and the dispatcher is acting on the modules themselves. A POSITA would understand that this type of system is not the same intelligent system described and claimed by the '664 Patent.
123. The Petition's argument thus fails because the preset levels affect the channel only after the media stream is received by the dispatcher a POSITA would understand that the console system in *Downs* is not the same intelligent system devised in the '664 Patent.

B. Ground 2: Purported Obviousness by *Downs* in view of *EDACS* and in further view of *Childress*

1. *Childress* does not disclose or render obvious the claim limitation of “receiving an alert in one of the media streams”

124. I disagree with the Petition’s and Mr. Williams’ assertion that *Childress*’ control channel discloses the claim element 1[b]. Specifically, in my opinion, *Childress*’ control channel is not a media stream as construed by the Claim Construction Order and identified in the ’664 Patent. So, the Petition fails to establish that the media stream “receives and alert” since the control channel is not a media stream. Although my analysis below references elements of claim 1, the analysis also applies to the other independent claims which include the same or similar elements and limitations.
125. I will lay out several differences between the ’664 Patent and *Childress*, including that the system channels are configured differently in *Childress* than those described as media streams in the claims of the ’664 Patent. Following this overview, I will go through a specific analysis of the actual assertions in the Petition regarding this Ground. To highlight these differences, I will go through a deep dive of both inventions along with the pertinent background information to put the teaching of *Childress* in the proper context as to better understand the reference. First, I will address *Childress*’ system, then I will turn to the ’664 Patent’s system, I will highlight the key differences which

establish that *Childress*' control channel is not the claimed media stream, and note various points which have bearing on whether a POSITA would find any modification of *Childress* obvious to arrive at the claims of the '664 Patent.

126. *Childress* describes a trunked radio system that has a master control channel that operates within the system and transmits signals. Ex. 1031, 3:22-27. The system of *Childress* is sometimes called a “digitally” trunked system since the trunking control is controlled by a dedicated “control” channel. *Id.*, 4:42-45. Radios that are on the system automatically revert to the control channel turned on or being reset. *Id.*, 4:45-48. *Childress* uses in-band signaling on the control channel to assure reliability. *Id.*, 3:27-31.
127. In an ordinary setting, the system call sequence will originate with a radio requesting a calling signal to the control site over the active control channel. Ex. 1004, 3:43-45. Once the controller receives the request from the radio, the controller assigns a specific working channel to the communication and passes along digital assignment signals on the control channel to the requesting radio. *Id.*, 3:45-49. The requesting radio then detect the channel assignment and switch transmitters to the working channel. *Id.*, 3:49-52. After this is completed, a final handshake is done and are again exchanged between the control site and the requesting radio. *Id.*, 3:53-56. Upon

confirmation from the central site, the digital release signal is sent over the working channel to release the units for communication to ensue use of control and working channels. *Id.*, 3:56-60. The emergency call procedure in *Childress* follows in the same manner as the above identified method of handshakes. Ex. 1031, 28:4-45. The requesting call transmits an emergency group call requesting assignment to a working channel. *Id.*, 28:16-19. The control channel then responds with two channel assignment messages and all mobiles of the called group are switched to the assigned working channel. *Id.*, 28:33-45. The channels then receive a confirmation message from the control site regarding admittance to the working channel. *Id.*, 28:42-52. After admittance, the originating mobile will then be able to carry out communications on the working channel. *Id.*, 28:59-29:4.

128. One critical distinction of the '664 Patent requires that the limitation of claim 1 reciting "receiving an alert in one of the media streams" requires the alert to be received in the same media stream that is being monitored. In other words, if an alert is received in one channel, then the system assigns the call to another channel, then this "assignment" to a new channel is different from the claimed limitation. *Childress* discloses sending emergency call requests in the control channel. Ex. 1031, 28:16-19. The control channel is used as the master

channel for the *Childress* system and is meant to serve as a system message communication medium. *Id.*, 4:42-45. Additionally, *Childress* defines the control channel as being one that “utilize[s] the maximum high speed data rates (e.g., 9600 bps on the typical 25 KHz bandwidth radio channel) for critical control channel signalling.” *Id.*, 3:22-25. In other words, the control channel is meant to send control signals to other channels in the system and **assigns** call requests to specific working channels for audio communication. A POSITA would understand that the control channel is meant for signaling capabilities and is not meant for voice or audio communication, which is similar to EDACS’ control channel. The word “alert” is mentioned only once in *Childress*. Ex. 1031, 5:26. This indication is provided over the digital control channel rather than any in-band signal that would be associated with a working channel. *Id.* The claims of the ’664 Patent require that the alerts be received in a media stream. Ex. 1001, cl. 1. The assignment of a channel in *Childress* is completely at odds with the plain language of the claims in the ’664 Patent. The claim language states that “an alert in one of the media streams” to be the limitation. If a media stream includes the alert, which causes an assignment of a new channel, then the assignment to the new channel is no longer within the plain meaning of the claims and outside the

order of operations that should be carried out in the claims. Ex. 2004, 16 (requiring the claims to be completed in order).

129. The Petition and Petitioner's expert Mr. Williams *ignore* this critical distinction between the plain meaning of the claim language and the disclosures of *Childress*. Petition, 50. The Petition and Mr. Williams conflate where the emergency call request originates in the disclosure of *Childress*. *Id.* According to the Petition, the Emergency Call type is allegedly received in the working channel. *Id.* This is simply not true. The reading of *Childress* has the emergency call origination request begin in the control channel of *Childress*, regardless of what *EDACS* discloses as the call type. Ex. 1031, 28:16-34. As above with *EDACS*, the Petition and Mr. Williams attempt to pick individual aspects of the disclosure through a word-search analysis in order to fit the narrative of using the claims to create the invention. A POSITA would understand that the control channel of *Childress* is nothing more than a channel that allocates control signals and is not a media stream that includes audio and/or visual and associated data. This is confirmed by *Childress*' own disclosure, which discloses the messages that the control channel carries do not include audio or video or both. *Id.*, 5:20-52. Of the messages, audio and/or visual is not one of the message types transmitted on *Childress*' control

channel. *Id.* Additionally, a POSITA would understand that the disclosure of *Childress* to be a call request being sent on the control channel, whereby the system then assigns the call to a new working channel which is carried out by the mobile units.

130. In furtherance to the above, the District Court has defined media stream to include “audio or visual [data] or both” as a requirement for something to be a media stream. Ex. 2004, 42. The control channel does not carry audio or visual data as described in the glossary of *Childress*. Ex. 1031, 3:22-25. Since the control channel only transmits information related to channel requests and status information, this is not audio or visual data and is instead channel identifier information.
131. The Petition’s conclusion that *Childress* discloses the claimed invention is based on single conclusory statements made by Mr. Williams that lack merit when looking at the *Childress* reference as a whole. Petition, 50. Instead, if the *Childress* reference were read as a whole in light of the Claim Construction order, a POSITA would know that *Childress*’ control channel is not a media stream and is instead just a channel used to control system messages.

132. A POSITA understands that the control channel is not a media stream as the media stream is required to transmit audio and video data. As explained above, the control channel cannot be a media stream as it does not transmit audio and video data. Instead, it transmits messages for emergency requests and call requests from a mobile unit to a communication center. No disclosure in *Childress* suggests anything to the contrary. To consider *Childress*' control channel as transmitting anything else would be contrary to the teachings of the reference.
133. The Petition fails to render obvious the claim limitation "receiving an alert in one of the media streams" since *Childress* does not disclose an alert being received in a media stream.

2. Purported Motivation to Combine Ground 1 with *Childress*

134. The Petition fails to provide an adequate basis to combine Ground 1 with *Childress* as *EDACS* already solves the alleged problems put forth by the Petition.
135. The Petition, along with Petitioner's Expert Mr. Williams, state that combining *Childress* with the art of Ground 1 would provide "numerous efficiency and interoperability benefits." Petition, 49. This is simply not the case. A POSITA would understand that the trunked operating communication

system described in *Childress* is the same as that disclosed and implemented in *EDACS*. Since *EDACS* already describes and solves the alleged problem, then a POSITA would not look to combine these references as it would be duplicative with the *EDACS* standard.

136. *EDACS* describes a trunked radio system that describes how emergency messages are communicated via a repeater control channel. Ex. 1005, 25. The emergency group call is initiated by pressing a button on a PTT radio to transmit an incoming message to the system for allocation of a working channel. *Id.* The call is then assigned to a working channel. *Id.* This is the same emergency trunking system described in *Childress*. The first request message is sent over the control channel and the system replies on the control channel with an assignment of a working channel. Ex. 1031, 13:16-42. Then, a secondary handshake occurs between the end device and the system where the second handshake takes place over the working channel. *Id.*
137. As such, the trunked system of an inbound message being received on a control channel and then assigned to a working channel is the same between the references. It is my opinion that a POSITA would not look to combine *Childress* with the references of Ground 1 as *EDACS* already performs the alleged concept of a control channel receiving an inbound call request.

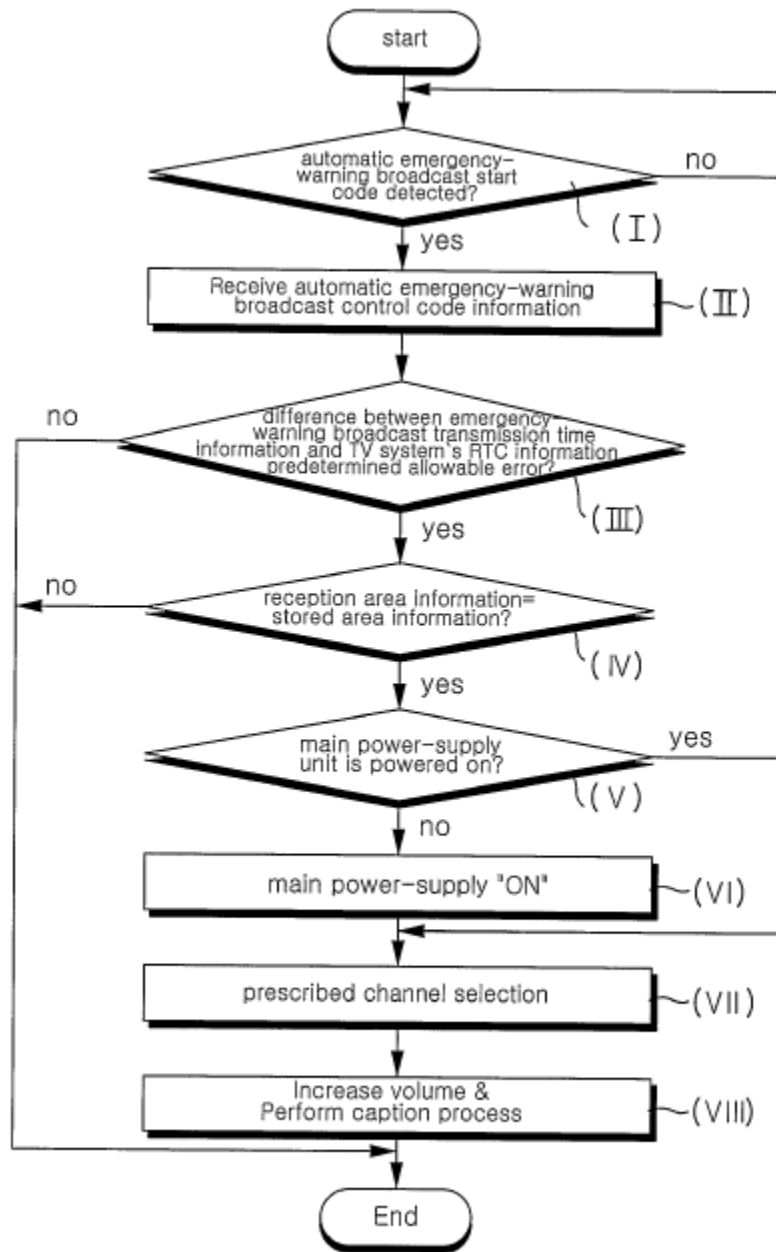
C. Ground 7: Purported Obviousness by *Kim*

138. I disagree with the Petition's and Mr. Williams' assertion that *Kim*'s system is one of the claimed entities, so elements 1[c] and 1[c'] are not disclosed or taught by *Kim*. Specifically, *Kim*'s television endpoint reacts to the received broadcast signals by adjusting endpoint settings. The Petition fails to establish that the broadcast signal is altered before reaching the endpoint. Although my analysis below references elements of claim 1, the analysis also applies to the other independent claims which include the same or similar elements.
139. I will lay out several important differences between the '664 Patent and *Kim*, including that the television merely reacts to the broadcast television in a static fashion instead of dynamically elevating a priority associated with the media stream such that an adjustment is made to how the media stream is provisioned to an endpoint in a communication environment, as required by the claims of the '664 Patent. I will highlight the system differences between the '664 Patent and the disclosures of *Kim*. To highlight these differences, I will dive deeper into both inventions along with pertinent background information to put the teaching of *Kim* in the proper context. First, I address *Kim*'s system, then turn to the '664 Patent's system, highlighting the key differences that

establish *Kim* as only reacting to a broadcast signal transmitted from the center.

140. More particularly, the differences include predetermined message-based emergency broadcast warnings used within *Kim*'s system. In *Kim*, the broadcast center sends a warning with all aspects of the channel effects already set before sending. In contrast, the '664 Patent dynamically configures the media stream on its way to the endpoint. As explained below, these distinctions make clear that *Kim* does not provision the media stream to an endpoint.
141. As discussed above, *Kim*'s system is directed to a television capable of displaying an emergency-warning broadcast to viewers. Ex. 1008, 1:3-6. The Television channels of *Kim* are static and their configuration does not change after the audio and video communications are received at the endpoint television. *Kim*'s television operates with a broadcast data receiver, a tuner, and an IF processor all being located within the television. *Id.*, 24:13-14. The television has a way to process the channel information via a channel processor to specifically act upon the baseband data created by the IF processor. *Id.*, 24:22-25:2. Each of the data types received by the television will have separate outputs. *Id.* *Kim*'s television handles broadcast systems

by receiving the broadcast signal, detecting if there is an emergency-warning broadcast signal, then causing some effect to happen to the television based on whatever messages were contained within the emergency signal. *Id.*, 4:1-12. Figure 3 exemplifies this process utilized in *Kim*.



Ex. 1008, Fig. 3. As can be seen in this figure, the start sequence detects the emergency broadcast with an emergency warning broadcast code. *Id.*, 15:13-22. Once the code is detected, the televisions clock is then used to assess the televisions clock compared to the clock sent in the transmission. *Id.*, 15:23-16:3. The controller in the television then compares the received information to the memory the television has stored. *Id.*, 16:6-10. If the information contained in the two clocks matches, then the controller in the television will power on the television to the pre-determined emergency channel and increase the volume to the set levels determined by the broadcast center. *Id.*, 16:11-17:11. This system allows the television to act as a dedicated endpoint that merely receives messages and carry out those pre-determined messages in accordance with the directions sent by the broadcast center. *Id.*, 2:3-4. Nothing in the *Kim* discusses how an adjustment to the media stream occurs in its relation *to* the television and instead focuses on the television responding to command actions sent from a broadcast center. Further, *Kim*'s television does not send the broadcast signal to other endpoints. The emergency message in *Kim* always arrives on the same channel, namely, the emergency channel. In contrast, the '664 Patent envisions the alert being detected on any

channel and change the volume of the same media stream through which the alert was received. Ex. 1001, cl. 1.

142. *Kim* discloses a message based system that is statically configured without any possibility of the media stream itself being adjusted. A POSITA would determine this by looking to the disclosures of *Kim* in Figure 2. In Figure 2, the broadcast signal is received by the broadcast signal receiver which will in turn divide the signal into two components, the CVBS signal and an audio signal. Ex. 1008, 9:24-10:3. The video signal processor in the television will process the CVBS signal to convert this to a display viewable by individuals looking at the screen of the television. *Id.*, 10:7-11:8. The audio signal processor will process the audio signal and generate an audio output signals for the speakers to use. *Id.* At the same time the broadcast signal receiver is dividing the CVBS signal, it will also send the signal to the emergency-warning broadcast divider. *Id.*, 11:13-19. This emergency broadcast divider separates the CVBS signal from the emergency warning broadcast signal and then decodes this signal which is sent to the controller in the television. *Id.* The controller will use this information to determine if the decoded emergency warning broadcast information will include a specific start time where the television should begin transmission. *Id.*, 11:25-12:12. Should the

start time transmission be detected, then the controller will power on the television, in the event it is off, or change the channel to the indicated channel in the emergency broadcast message. *Id.* In *Kim*, the television receives information from a control center to then initiate some change in how the television operates. *Id.*, 11:13-12:12. This, in essence, is a causal relationship between broadcast center in *Kim* and the endpoint television. Nothing in *Kim* discusses how the broadcast message itself is adjusted before it reaches the television, nor is there a difference in provisioning the broadcast transmission before it reaches the television. The broadcast transmitted from the broadcast center remains unchanged up to the point it reaches the television, where the modules of the television are adjusted for presentation of the broadcast. This message-based system is not what the '664 Patent claims.

143. The '664 Patent is a channel-based system that utilizes dynamic arrangement of media streams before they reach endpoints. Ex. 1001, cl. 1, 3:56-49. The process of the '664 Patent includes alerts originating with a PTT mobile device. *Id.*, 3:56-4:9. The system receives the alerts and elevates a priority associated with the media stream before the media stream reaches an endpoint. *Id.* The elevation in priority adjustments may include increasing the volume of the media stream itself, not the volume setting of downstream endpoints.

Id. To achieve this, the ingenious nature of the '664 Patent utilizes a UMS to “understand which streams should be given priority over other streams.” *Id.*, 5:26-28. As a result of this, the UMS shifts the media streams and determines the volume that the media stream should have for the end-user device. *Id.*, 5:28-30. This system of dynamically configuring channels is in direct contrast to the static nature of *Kim*. A POSITA would understand that these differences exist between the '664 Patent and *Kim* and would not find that *Kim* renders obvious the claim elements of an “adjustment [] made to how the media stream is provisioned to an endpoint” and “elevate a priority associated with the media stream.”

144. The Petition and Petitioner’s expert Mr. Williams, erroneously allege that *Kim* discloses or renders obvious the claimed limitations of the '664 Patent. Specifically, the Petition alleges that the powering on of the television is an elevation of priority, while the changing of the volume by the controller in *Kim* is allegedly the claimed adjustment. Petition, 70. This is simply not the case. In order to meet the claim limitation, the media stream itself has to affect change to the endpoint. Ex. 1001, cl. 1. *Kim*’s controller merely acts in accordance with pre-determined message signal received in a transmission. Nothing about this message effectuates an elevation in priority by the

controller *within* the television since by this very nature, the controller is located at the endpoint. In order to meet the claim limitations, the media stream needs to be elevated *before* it reaches the endpoint. A POSITA would understand that the receipt of the unaltered and un-elevated message from the broadcast center is nothing more than reacting to predetermined commands from the broadcast center.

145. *Kim* does not render obvious independent claims 11 and 16 based on their recitation of similar elements to claim 1 such as claim element 1[b] and 1[c]. Since the Petition fails to show that claim 1 is unpatentable, then claims 11 and 16 are also patentable on the same basis. All claims that depend from claims 1, 11, and 16 are also patentable for being dependent from valid independent claims.

XI. CONCLUSION

146. Although my complete opinions are set forth above, for convenience I summarize several points of my opinions in conclusion. For the foregoing reasons, based on my expertise and experience and the record of this case that I have reviewed, it is my opinion that:

- Claims 1-6, 8-9, and 11-20 are not obvious over *Downs* in view of *EDACS*;

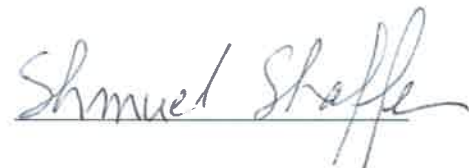
- Claims 1-6, 8-9, and 11-20 are not obvious over *Downs* in view of *EDACS* in further view of *Childress*;
- Claims 3-5, 13-14, 18, and 19 are not obvious over *Downs* in view of *EDACS* in further view of *Hancock*;
- Claims 3-5, 13-14, 18, and 19 are not obvious over *Downs* in view of *EDACS* in further view of *Childress* and in even further view of *Hancock*;
- Claims 7 and 10 are not obvious over *Downs* in view of *EDACS* in further view of *Reich*;
- Claims 7 and 10 are not obvious over *Downs* in view of *EDACS* in further view of *Childress* and in further view of *Reich*;
- Claims 1-2, 6-9, 11-12, 15-17, and 20 are not obvious over *Kim*;
- Claims 3-5, 13-14, 18-19 are not obvious over *Kim* in further view of *Ishibashi*;
- Claim 10 is not obvious over *Kim* in view of *Goss*.

147. I understand that my opinions discussed above support a legal conclusion that claims 1-20 are not invalid and are nonobvious.

I hereby declare that all statements made herein of my own knowledge are true and all statements made herein on information and belief were and are believed by me to be true, and that all statements herein were and are 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 and that any such willful false statements may jeopardize the validity of the application or any patents issued thereon.

Dated: June 28, 2024

Respectfully submitted,

 6/28/24
Shmuel Shaffer, Ph. D.