

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FACEBOOK, INC. and INSTAGRAM, LLC,
Petitioners

v.

VOXER IP LLC
Patent Owner

Case IPR2021-00399
Patent No. 10,109,028 B2

**DECLARATION OF DR. SAMRAT BHATTACHARJEE IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 10,109,028 B2**

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DECLARATION OF DR. SAMRAT BHATTACHARJEE

I, Dr. Samrat Bhattacharjee, declare the following:

1. I make this declaration based upon my own personal knowledge and, if called upon to testify, would testify competently to the matters stated herein.

2. I have been retained by Facebook, Inc. and Instagram, LLC (which I will refer to collectively as “Petitioner”) to provide technical assistance in connection with the *inter partes* review of U.S. Patent No. 10,109,028 (which I will refer to as the “’028 patent”). More specifically, I have been asked to provide my opinion as to whether the ’028 patent is obvious in light of certain prior art references described further below. This declaration is a statement of my opinions on issues relating to the patentability of claims 1, 5, and 12 (which I will refer to as the “challenged claims”) of the ’028 patent.

3. I am being compensated for my work in this matter at my standard hourly rate of \$600 for consulting services. My compensation is not based on the content of my opinions or the resolution of this matter.

I. QUALIFICATIONS

4. In formulating my opinions, I have relied on my knowledge, training, and experience in the relevant field, which I will summarize briefly.

5. I am a tenured professor in computer science at the University of Maryland. I have been involved in the research and development of computing

systems and computer networks for thirty years.

6. I received Bachelor of Science degrees in both Computer Science and in Mathematics from Georgia College in 1994, and a Ph.D. in Computer Science in 1999 from Georgia Institute of Technology. My Ph.D. research was in developing a new form of networking architecture, and some of the work I did involved improving delivery of streaming media over the Internet. The work I did was also useful for faster connection setup and related to enabling mobility support for IP hosts.

7. After receiving my Ph.D., I joined the University of Maryland as an Assistant Professor in 1999. I was promoted to Associate Professor with tenure in 2005, and I was promoted to Full Professor in 2009. At Maryland, I have taught both undergraduate and graduate courses in computer networking, computer operating systems, computer security, and various special courses on topics in related fields. My courses, both graduate and undergraduate, cover the basic structure of computer systems, security and networking. For example, my courses cover the IP protocol stack, and include coverage of link, networking, transport, and application-layer protocols and systems. Some lectures cover details of streaming media protocols and systems, including those referenced in the '028 patent.

8. I have authored or co-authored over 100 articles in peer-reviewed

journals and conference proceedings in the aforementioned areas of computer science, including in particular in the area of streaming media.

9. My research work has been supported by multiple grants from the U.S. National Science Foundation and the Department of Defense. I have also started a joint Ph.D. program with the University of Maryland and the Max Planck Society in Germany, and co-founded the annual Cornell, Maryland, Max Planck Research School that provides research exposure to over 100 students from across the world during a week-long program.

10. As I mentioned earlier, part of my Ph.D. research was to develop new and more efficient architectures for streaming media delivery on the Internet, and I have published papers on this architecture during my graduate studies. I continued to work on streaming media delivery as a faculty member, and have published various papers on streaming media, content delivery architectures, and on resilient large scale content delivery. During 2007, I was a visiting researcher at AT&T Labs, and one of the projects I focused on was a streaming media delivery platform. This work resulted in both publications and a granted U.S. patent (No. 8,752,100 B2).

11. I have served as an expert witness and technical consultant in litigation and *inter partes* review matters concerning networking protocols and systems, Voice-over-IP (“VoIP”), streaming media, and mobile applications. I

have testified at trial as an expert witness in patent disputes in district court and before the International Trade Commission.

12. A copy of my curriculum vitae, which summarizes my relevant education and experience and lists all of my publications, is included with Petitioner's Petition for *Inter Partes* Review as Ex-1007.

II. MATERIALS CONSIDERED

13. The analysis and opinions that I provide in this Declaration are based on my education and experience in the field of computer systems, networks, and communication systems. In addition to Petitioner's Petition for *Inter Partes* Review itself, I have reviewed and considered the following documents in connection with forming the opinions expressed herein:

Exhibit No.	Description of Document
1001	U.S. Patent No. 10,109,028 to Matthew J. Ranney (filed Jan. 14, 2015, issued October 23, 2018) ("028 patent")
1002	U.S. Patent Application Publication No. 2006/0003740 A1 (filed Jun. 30, 2004, published Jan. 5, 2006) (" <i>Munje</i> ")
1003	U.S. Patent No. 9,462,115 (filed April 4, 2014, issued Oct. 4, 2016) (" <i>Rand</i> ")
1004	International Publication No. WO 03/015383 A2 (filed August 8, 2002, published February 20, 2003) (" <i>Bulthuis</i> ")
1005	International Publication No. WO 2010/136997 A1 (filed May 27, 2010, published December 2, 2010) (" <i>Pelttari</i> ")

Exhibit No.	Description of Document
1008	Claim Construction Order in <i>Voxer, Inc. v. Facebook, Inc.</i> (W.D. Tex. 1:20-cv-655) [Dkt. 74]
1010	U.S. Pat. App. Ser. No. 09/780,229 Filed Feb. 9, 2001

III. LEGAL STANDARDS FOR PATENTABILITY

14. My opinions are also based on my understanding of the relevant law. I am not an attorney. For purposes of this declaration, I have been informed about certain aspects of the law as it relates to my opinions.

15. I understand that a patent contains one or more claims that may be written in independent or dependent form. I further understand that an independent claim is a standalone claim that contains all the limitations necessary to define an invention, whereas a dependent claim refers to a claim previously set forth and further limits that claim. I also understand that a claim in dependent form incorporates all the limitations of the claim that it depends from.

16. I understand that for an invention claimed in a patent to be patentable, it must be new and not obvious based on what was known before the invention was made.

17. I understand that the information that is used to evaluate whether an invention was new and not obvious when made is generally referred to as “prior art.” I understand that the prior art includes patents and printed publications that

existed before the earliest filing date of the patent (*i.e.*, the “effective filing date”). This includes foreign language material.

18. I understand that in this *inter partes* review proceeding, Petitioner has the burden of proving that the challenged claims of the '028 patent are unpatentable in light of the prior art by a preponderance of the evidence. I understand that a preponderance of the evidence is sufficient to show that a fact is more likely true than not true.

19. I understand that in this *inter partes* review proceeding, the information that may be used to demonstrate unpatentability is limited to patents and printed publications. My analysis compares the challenged claims of the '028 patent to patents and printed publications that I understand are prior art to the challenged claims.

20. I understand that prior art can render a claim “obvious” to a person of ordinary skill in the art and thus unpatentable. My understanding of this legal standard is set out below.

21. I understand that prior art can render a patent claim unpatentable where the differences between the subject matter that falls within the scope of the claim and the prior art are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art. I understand that the following standards govern the determination of whether a patent claim is rendered

“obvious” in light of the prior art. I have applied these standards in my evaluation of whether the challenged claims of the ’028 patent are obvious in light of the prior art.

22. 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.

23. Prior art disclosing a method or device that falls within the scope of a claim can render that claim obvious even if other, different methods or devices might also fall within the scope of the claim.

24. I understand that a determination as to whether a claim would have been obvious should be based on four factors (though not necessarily in the following order): (i) the level of ordinary skill in the art at the time the application was filed; (ii) the scope and content of the prior art; (iii) the differences between the claimed invention and the prior art; and (iv) any “objective factors” indicating obviousness or non-obviousness that may exist in a particular case.

25. I understand that an obviousness analysis should not be based on hindsight, but must be done using the perspective of a person of ordinary skill in the relevant art as of the effective filing date of the patent claim.

26. I understand that the objective factors indicating obviousness or nonobviousness may include: commercial success of products covered by the patent claims; a long-felt but unaddressed need for the invention; failed attempts

by others to make the invention; copying of the invention by others in the field; expressions of surprise by experts and those skilled in the art at the making of the invention; and the patentee having proceeded contrary to the accepted wisdom of the prior art. I also understand that any of this evidence must be specifically connected to the claimed invention rather than associated with the prior art or with marketing or other efforts to promote an invention.

27. I understand that the teachings of two or more prior art references may be combined in the manner disclosed in the claim if such a combination would have been obvious to one having ordinary skill in the art. In determining whether a combination would have been obvious, the following exemplary rationales may support a conclusion of obviousness:

- combining prior art elements according to known methods to yield predictable results;
- simple substitution of one known element for another to obtain predictable results;
- use of a known technique to improve similar devices (methods, or products) in the same way;
- applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- “obvious to try” – choosing from a finite number of identified,

- predictable solutions, with a reasonable expectation of success;
- known work in one field of endeavor 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 are predictable to one of ordinary skill in the art;
 - some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention; and
 - common sense.

28. I understand that the obviousness analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, but instead can take account of the ordinary innovation and experimentation in the relevant field that does no more than yield predictable results.

29. I understand that, in assessing whether there was an apparent reason to modify or combine known elements as claimed, it may be necessary to look to interrelated teachings of multiple patents and printed publications, the effects of commercial demands, and the background knowledge of a person of ordinary skill in the art. I further understand that any motivation that would have applied to a person of ordinary skill in the art, including motivation from common sense or derived from the problem to be solved, is sufficient to explain why references

would have been combined.

30. I understand that modifications and combinations suggested by common sense are important and should be considered. Common sense suggests that familiar items can have obvious uses beyond the particular application being described in a prior art reference, that if something can be done once it would be obvious to do it multiple times, and that in many cases a person of ordinary skill in the art can fit the teachings of multiple patents together in an obvious manner to address a particular problem. Further, the prior art does not need to be directed to solving the same problem that is addressed in the patent.

31. I understand that a person of ordinary skill in the art is also a person of ordinary creativity. In many fields, it may be that there is little discussion of obvious techniques, modifications, and combinations, and it may be the case that market demand, rather than scientific research or literature, will drive a new design. When there is market pressure or design need to solve a particular problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has a good reason to employ the known options. If this leads to the expected success, then it is likely the product of ordinary skill and common sense as opposed to patentable innovation. I understand that if a combination was obvious to try, that may show that it was obvious and therefore unpatentable. That a particular combination of prior art elements was obvious to try suggests that the

combination was obvious even if no one made the combination.

IV. THE '028 PATENT

A. Overview of the '028 Patent

32. The '028 patent is entitled “Embeddable communications software module.”

33. The specification of the '028 patent acknowledges that there are “a wide variety of communication services available for use on mobile and computer devices” which “allow a user to talk in real time with another user” and “to send text messages, video or images[.]” Ex-1001 1:21-27. The '028 patent states that “[t]ypically, users will access the above communications services by using a dedicated application,” such as an installed “dedicated Skype client on [a] mobile device.” *Id.* 1:28-31.

34. As an alternative to using a dedicated application, the '028 patent proposes a “communications software module that can be easily embedded in a wide variety of software applications and platforms.” *Id.* 3:49-52. This embeddable communications software module performs various functions to facilitate live (“near real-time”) or delayed (“time-shifted”) communications via a separate communications system, and to progressively transmit, receive, and store messages. *Id.* 3:20-41. The claimed module uses an application programming interface (API) to communicate with a software application in which it is

embedded. *Id.* Fig. 2B, 13:62-67.

35. The '028 patent specification asserts that utilizing the claimed embeddable communications software module to manage communications is advantageous because “[t]he developer of the software application [] need not spend time or resources on developing a proprietary communications solution, but instead can offload such functionality to the module [], which is typically provided by another developer.” *Id.* at 5:14-20.

B. Overview of the Challenged Claims

36. The '028 patent's claims challenged in the Petition, claims 1, 5, and 12, claim an “embeddable communications software module that allows a software application to access a communications system providing both ‘time delayed’ and ‘near real time’ communication.” In each claim, the module is arranged to perform various functions.

37. **Independent Claim 1** recites that the embeddable communications software module perform functions relating to the receipt of an “incoming message.” It reads:

An embeddable communications software module that allows a software application to access a communications system providing both time delayed and near real time communication, the embeddable communications software module stored in a non-transitory tangible computer readable storage medium, wherein the embeddable

communications software module is arranged to:

- a. provide an application programming interface (API) that allows the embeddable communications software module to receive API inputs from the software application, the embeddable communications software module and the software application communicating through the API;
- b. receive an incoming message behavior policy from the software application, wherein the incoming message behavior policy controls how the embeddable communications software module responds to incoming messages;
- c. receive an incoming message from an remote communications device;
- d. progressively store the incoming message as it is received;
- e. in response to the received message, send a notification to the software application based on the incoming message behavior policy;
- f. selectively render the incoming message in a near real time mode, wherein the near real time mode involves progressively rendering the incoming message as it is received;

selectively render the incoming message in a time-shifted mode, wherein the time shifted mode involves rendering the incoming message after the incoming message has been received and stored; and;

g. determine whether to render the incoming message in the near real time mode or the time-shifted mode based at least in part on the incoming message behavior policy,

h. wherein the software application is separate from the communication system that is accessed through the embeddable communications software module.

38. **Dependent Claim 5** recites an embeddable communications module as described in claim 1 that is further arranged to perform functions relating to “outgoing media.” It reads:

An embeddable communications software module as recited in claim 1 wherein the embeddable communications software module is further arranged to:

a. receive recipient identity information from the software application, the recipient identity information indicating an identity of a message recipient;

b. record outgoing media created by a user;

c. progressively transmit the outgoing media to remote device while the outgoing media is being created by the user wherein the message recipient of the outgoing media is identified by the recipient identity information received from the software application; and

d. progressively store the outgoing media while the outgoing media is being created and transmitted.”

39. **Independent Claim 12** recites that the embeddable communications software module is arranged to perform various functions relating to “outgoing media.” Claim 12 reads:

An embeddable communications software module that allows a software application to access a communications system providing both time delayed and near real time communication, the embeddable communications software module stored in a non-transitory tangible computer readable storage medium wherein the embeddable communications software module is arranged to:

a. provide an application programming interface (API) that allows the embeddable communications software module to receive API inputs from the software application, the embeddable communication module and the software application communicate through the API;

- b. receive recipient identity information from the software application, the recipient identity information indicating an identity of a message recipient;
- c. record outgoing media created by a user;
- d. progressively transmit the outgoing media to a remote communications device associated with the message recipient while the outgoing media is being created by the user, wherein the message recipient of the outgoing media is identified by the recipient identity information received from the software application; and
- e. progressively store the outgoing media while the outgoing media is being created and transmitted,
- f. wherein the software application is separate from the communication system that is accessed through the embeddable communications software module.

40. None of the elements of claims 1, 5, or 12 are novel, individually or in combination, as explained in detail in Section VIII.¹ The claimed embeddable communications software module or modules performing functions relating to communication of “outgoing media” or the rendering of an “incoming message”

¹ Section references are to sections within this declaration.

was well known in the art long before the alleged invention.

C. Effective Filing Date of the '028 patent

41. The '028 patent states in its face that it issued from an application filed on January 14, 2015. Ex-1001 at cover. The '028 patent purports to claim priority to provisional application No. 61/980,166, filed on April 16, 2014.

42. I have been instructed to use April 16, 2014 as the effective filing date for my analysis of the asserted claims of the '028 patent.

D. Level of Ordinary Skill in the Art

43. I understand that an assessment of claims of the '028 patent should be undertaken from the perspective of a person of ordinary skill in the art as of the earliest claimed priority date, which I have assumed is April 16, 2014. I have been advised that, to determine the appropriate level of skill of one of ordinary skill in the art, I may consider the following factors: (a) the types of problems encountered by those working in the field and prior art solutions thereto; (b) sophistication of the technology in question, and the rapidity with which innovations occur in the field; (c) the educational level of active workers in the field; and (d) the educational level of the inventor.

44. A hypothetical person of ordinary skill in the art to which the '028 patent relates is one who, as of April 2014, would have had a working knowledge of computer networking and distributed systems generally, and messaging and

multimedia communication systems specifically. Such a person would have had at least a bachelor's degree in computer science, computer engineering, or an equivalent degree, and 2-3 years of professional experience with distributed multimedia systems, with a working knowledge of computer networking and distributed systems generally and messaging and multimedia communication systems specifically. Work experience could be substituted for additional education, and vice versa.

45. My opinions regarding the level of ordinary skill in the art are based on, among other things, my more than 25 years of experience in the relevant areas, my understanding of the basic qualifications that would be relevant to an engineer or scientist tasked with investigating methods and systems in the relevant areas, and my familiarity with the backgrounds of researchers and practitioners in the relevant areas, including colleagues, students, and other individuals working in these areas, both past and present.

46. Although my qualifications and experience exceed those of the hypothetical person of ordinary skill in the art defined above, my analysis and opinions regarding the '028 patent are based on the perspective of a person of ordinary skill in the art as of April 2014.

47. My opinions herein regarding the understanding of a person of ordinary skill in the art and my other opinions set forth herein would remain the

same if the person of ordinary skill in the art were determined to have somewhat more or less education and/or experience than I have identified above.

48. Although I have used April 16, 2014 as the effective filing date for my analysis of the challenged claims of the '028 patent, my opinions regarding the understanding of a person of ordinary skill in the art and my other opinions set forth herein would remain the same if the effective filing date were determined to be somewhat earlier or later.

V. CONSTRUCTION OF THE TERMS USED IN THE '028 PATENT

A. Relevant Legal Principles

49. I understand that terms used in patent claims are generally given the meaning that the terms would have had to a person of ordinary skill in the art at the time of the invention. I also understand that the person of ordinary skill in the art is deemed to read a claim term not only in the context of the particular claim in which the term appears, but in the context of the entire patent, including the specification.

50. I am informed by counsel that the patent specification, under the legal principles, has been described as the single best guide to the meaning of a claim term, and is thus highly relevant to the interpretation of claim terms. I am further informed by counsel that other claims of the patent in question, both asserted and unasserted, can be valuable sources of information as to the meaning of a claim

term. Because the claim terms are normally used consistently throughout a patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims. Differences among claims can also be a useful guide in understanding the meaning of particular claim terms.

51. I understand that the prosecution history can further inform the meaning of the claim language by demonstrating how the inventors understood the invention and whether the inventors limited the invention in the course of prosecution, making the claim scope narrower than it otherwise would be. Extrinsic evidence, such as dictionary definitions or my expert opinions, may also be consulted in construing the claim terms.

52. I have been informed by counsel that, in *inter partes* review proceedings, a claim of a patent shall be construed using the same claim construction standard that would be used to construe the claim in a civil action filed in a U.S. district court (which I understand is called the “*Phillips*” claim construction standard), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

B. “incoming message behavior policy”

53. I understand that the term “incoming message behavior policy” was construed in the litigation pending in federal district court (*Voxer, Inc. and Voxer*

IP LLC v. Facebook, Inc. and Instagram, LLC, Case No. 1:20-cv-00655 (W.D. Tex.)) (which I will refer to as the “Texas Litigation”) to mean “received data indicating how the embeddable communications software module responds to incoming messages.” *See* Ex-1008.

54. For purposes of my analysis of the challenged claims, I considered and applied the court’s construction, and I have determined that my conclusions are the same under this construction or any other reasonable construction of the claim terms.

C. Construction of Preambles of Claims 1, 5 and 12

55. I understand that in the Texas Litigation, the district court concluded that the preambles of claims 1, 5, and 12 are limiting. *See* Ex-1008. I further understand that the District Court found that the claimed “embeddable communications software module” referenced in the preambles had its plain and ordinary meaning. *See* Ex-1008.

56. For purposes of my analysis of the challenged claims, I considered and applied the court’s finding that the preambles are limiting, and I have determined that my conclusions are the same whether or not the preambles are limiting.

VI. OVERVIEW OF PRIOR ART REFERENCES

A. Munje

57. *Munje* claims a “mobile station” (such as a cellular telephone) which utilizes a message behavior “switch” that can be configured to record live incoming PTT (Push-to-Talk) voice communications, thus allowing message rendering in a time-shifted mode, in addition to a real-time mode. Ex-1002 Abstract, Claim 1. *Munje* explains that “PTT voice communications are different from traditional cellular telephony communications in that the voice communications are generally immediate and unannounced.” Ex-1002 [0005]. Consequently, a recipient of a PTT communication “may be busy or caught ‘off guard’ and not listening to the initial communication.” *Id.*

58. *Munje* proposes to solve this issue by enabling “a service provider or end user at the user interface of the mobile station” to select or set a “recording feature” as an option through the use of claimed switches, such as a “key message” allowing for “automatic[] record[ing of] Push to Talk (PTT) voice communications for replay in a mobile station.” *Id.* [0068], [0007], [0053-54], [0008] (“Advantageously, PTT voice communications that are missed . . . may be replayed by an end user.”).

59. *Munje*’s claimed “method of automatically recording PTT voice communications for replay in a mobile station” is described in Figure 6:

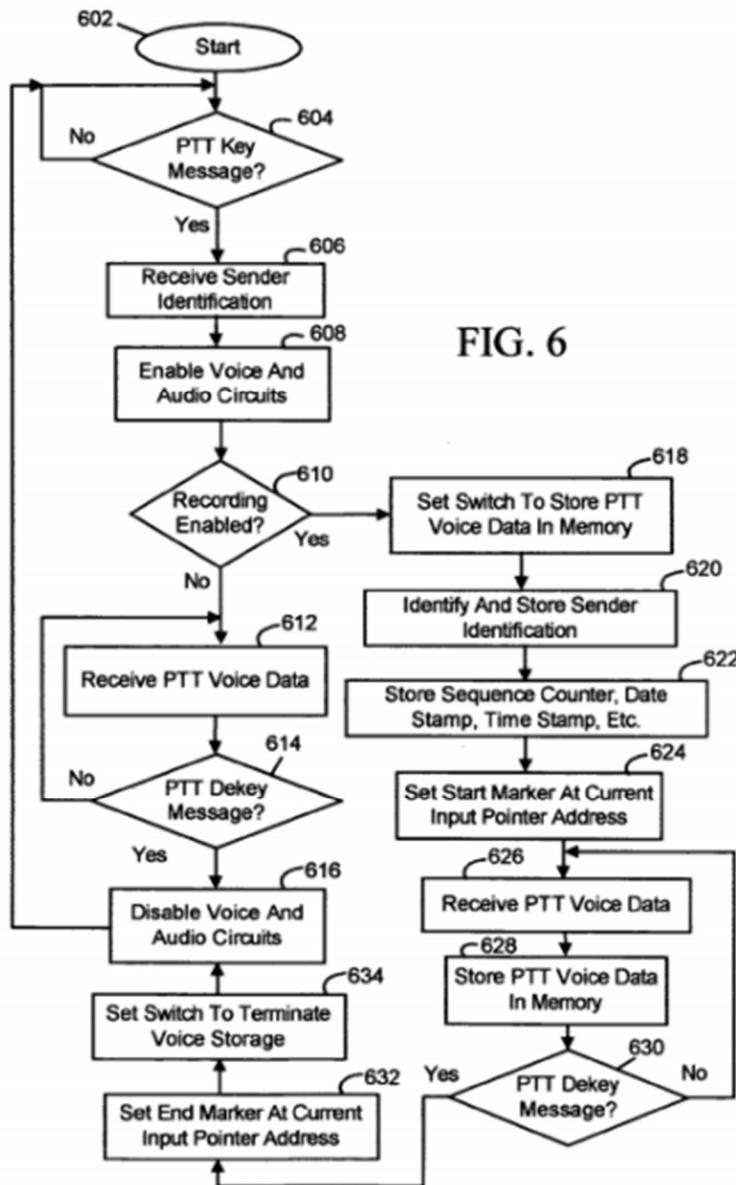


FIG. 6

Ex-1002 Fig. 6. *Munje* discloses that the claimed invention enables progressive storage and recording of PTT communications. *Id.* This claimed invention “may be embodied in a computer program product,” which in turn includes “computer instructions stored in a storage medium.” *Id.* [0066], Claim 19.

60. *Munje* instructs that this claimed invention sends, receives, records,

stores, and otherwise enables communications over a communications network. See, e.g., Ex-1002 [0007] (describing claimed apparatus “for automatically recording Push-To-Talk (PTT) voice communications” received over “a wireless communication network”), Claim 10 (“[a] mobile station, comprising a wireless transceiver adapted to operate within a wireless communication network[.]”).

61. As part of the invention in *Munje* and as shown in Figure 6, incoming PTT voice data is stored by the transceiver simultaneously with its receipt. Ex-1002 [0007], [0072], [0071] (“[T]he voice data for the PTT voice communication is received through the wireless transceiver (step 626 of FIG. 6). . . . Advantageously, the voice data of the PTT voice communication is also simultaneously saved in memory (step 628 of FIG. 6).”).

62. In addition to storing incoming PTT voice communications, *Munje* discloses progressively storing outgoing PTT voice communications as they are being transmitted: “Upon PTT button depression, the processor causes the voice data of the PTT voice transmission to be stored in the memory simultaneously with its transmission.” Ex-1002 [0074] (emphasis added).

63. *Munje* further discloses both real-time and time-shifted rendering of received messages pursuant to the user’s election. Ex-1002 [0053-54], [0007-0008]. *Munje* permits “conventional listening of voice with simultaneous recording in memory.” *Id.* [0054]. After voice communications are stored in memory, they

may be replayed by the user. “[I]n response to detecting a user actuation of the PTT replay switch, the processor causes the voice data of the PTT voice communication to be retrieved from the memory and audible voice signals corresponding to the voice data to be output from the speaker.” Ex-1002 [0079]; *see also id.* [0007], [0075-78], Fig. 7.

B. Rand

64. *Rand* discloses managing and delivering PTT audio and video communications, including PTT live streams. *Rand* notes that, in the prior art, unscheduled calls can interrupt the recipient, establishing connections between the parties requires the user to dial and wait for an answer, background noise limits conversations, and a user must have at least two applications if the user would like to text a friend but also share a file or music. Ex-1003 1:12-17, 1:30-35, 3:5-7.

65. *Rand* seeks to overcome these shortcomings by combining several features of communication systems, including text messaging services, PTT services, 2-way communication, group conferencing, video calling, and file sharing, among other things, into a single platform. Ex-1003 2:25-28, 2:66-3:7. *Rand* calls this platform invention a “software embodiment” that it names “the Application.” *Id.* Figs. 9A, 2a-2h, 14:1-3, 21:38-44.

66. Figure 9A illustrates the functionality disclosed in *Rand*:

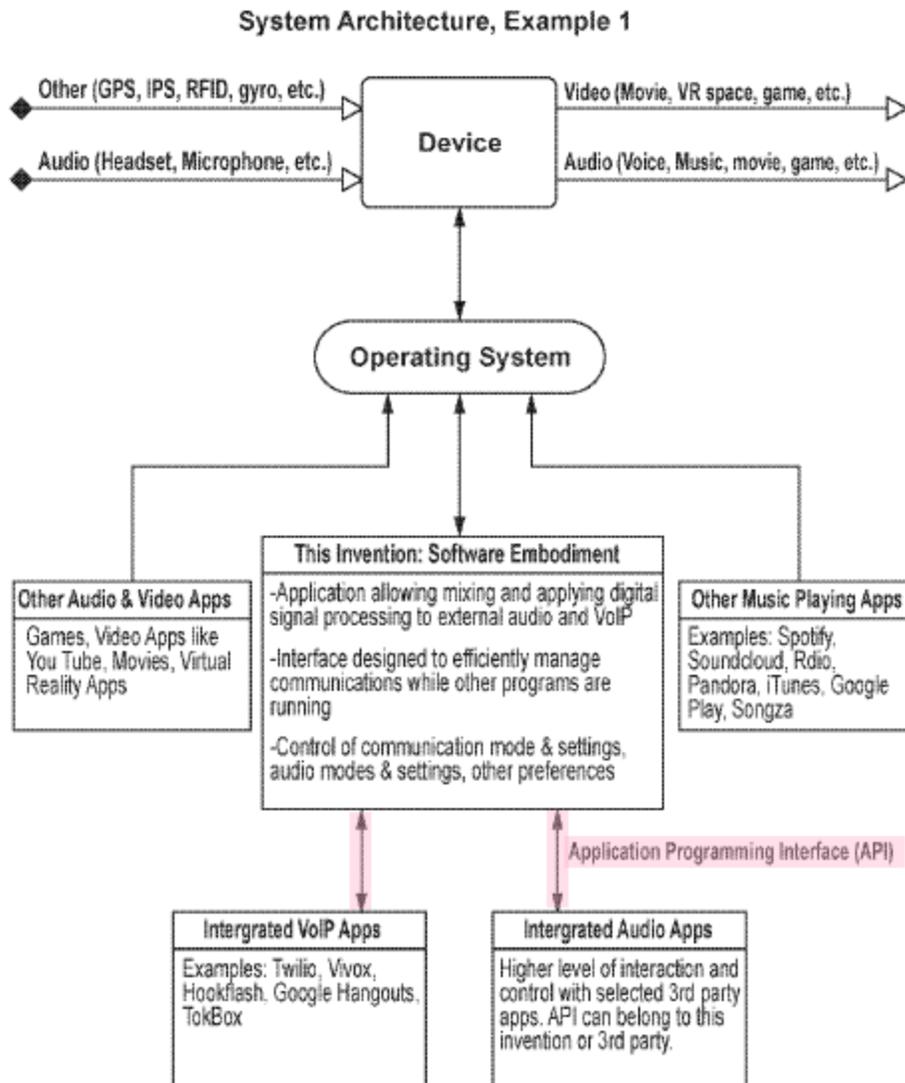


FIG. 9A

Ex-1003 Fig. 9A (annotated). As illustrated above, the Application communicates via an Application Programming Interface (“API”) with software consisting of the Integrated VoIP and Audio Applications depicted in Fig. 9A. *Id.* 21:41-43 (“The Application could integrate with third party VoIP and Audio Apps through an Application Programming Interface (API)[.]”), *see also id.* Fig 2d, 14:46-47; 16:5-

28, 17:47-53, 24:15-18.

67. *Rand* also discloses a device communicating with a second device, and optionally other devices. Ex-1003, Fig. 12, 24:10-13. Each device contains an Application. Ex-1003 Fig. 12.

68. The Application has a set of instructions for controlling numerous inputs, such as control inputs (including keyboards, touchscreens, wearable devices, sensors built into a phone, headsets, or other devices, as well as any other device), audio inputs (audio, music, from other applications), voice inputs (microphone located on the device itself or any other device), and video inputs. *Id.* 24:15-44; *see also id.* 4:37-41 (the software application also “contains code for delivering features that help users determine the availability of their friends for communication and collaboration.”).

69. When sending a message to another device, the user can also select a specific recipient using the Application’s Connect user interface. *Id.* Fig. 9A, 5:57-67, 6:1-5, 14:1-7.

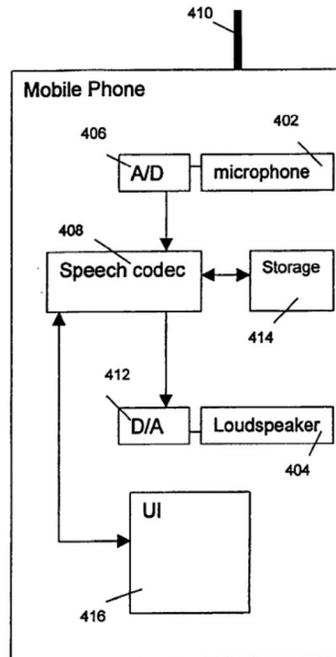
C. Bulthuis

70. *Bulthuis* discloses initiating, receiving and recording real-time communications on consumer electronics communication devices, including audio communications over cellular networks or over the Internet. Ex-1004 2:8-10.

Bulthuis explains that recording systems for audio communications were well-

known in the art but that these systems, such as voicemail and 911 services, “are not sufficiently flexible to accommodate all user needs.” *Id.* 1:14-19. *Bulthuis* seeks to improve on these systems by configuring a “consumer electronics device, such as a cell phone” to record “real-time communication in response to a user initiating or accepting the real-time communication.” *Id.* Abstract, 1:20-21. This “provides an advantage to the user of a mobile phone” who might postpone actions in relation to the communication until “a more convenient moment as the recording is going to be available.” *Id.* 1:25-29. The communication functions of the invention may be performed by software that is carried on the consumer device. *Id.* Claim 18.

71. Figure 4 illustrates components of a mobile phone device arranged according to *Bulthuis*:



400

FIG.4

Ex-1004 Fig. 4, 9:31.

72. *Bulthuis* teaches that such a communication device utilizes “a module with a storage” which performs a variety of functions in response to input to a “user interface” (the software application) and which facilitates “communication” by the device with “conventional telephonic devices or via the Internet” (a communication system). *Id.* 4:20-30, 5:15-17. In particular, in response to activation of “a certain key or pattern of keys [] reserved for user-interaction with the module to implement,” the module performs functions such as “replaying the communication most recently recorded” or activating recording “during a real time

communication upon a user input.” *Id.* 4:20-30.

73. *Bulthuis* teaches communication of messages in real-time and associated recording of those messages (for later playback), depending on various settings and configurations. Ex-1004 Abstract, 2:9-11. For example, *Bulthuis* teaches that the software can be configured to “enable real-time communication via the device.” *Id.* Claims 1, 18. Recording during such a real-time communication can be “automatic.” *Id.* Claim 2. Alternatively, “Caller-ID and other profiling information (e.g., time of day) . . . may be used to select for which communications to skip the recording or to explicitly carry out the recording.” *Id.* 9:28-30.

74. *Bulthuis* teaches the progressive storage of the recordings during real-time communications, enabling the rendering of messages in time-shifted mode. Ex-1004 1:29-2:1. For example, *Bulthuis* discloses “instant rewind,” a mechanism requiring progressively recording and storing messages because it allows for “replay of at least a part, e.g., the last 5 minutes, of the communication recorded most recently.” *Id.* 3:11, 10:17. *Bulthuis* teaches that this feature may be activated through a user interface such as a “button” or “upon a specific voice command.” *Id.* 3:10-17. *Bulthuis* further teaches that communication recordings may be stored and organized in a variety of forms of storage, such as “onboard storage” in a “solid state memory card/module.” *Id.* 2:32-3:1, 2:25-29. *Bulthuis* explains that these stored messages may be rendered “if and when needed.” *Id.* 8:29-30.

D. Pelttari

75. *Pelttari* discloses communicating audio content over a communication network, and enabling recording, storage, and retrieval of that content. Ex-1005 Abstract, [0012]. *Pelttari* explains that although “voice/audio call[s]” advantageously can be “accessed in real time” and carry the “benefit of being enabled on all types of communication terminals,” this medium “requires user intervention in receiving the call” which “may not be desirable at times.” *Id.* [0008]. *Pelttari* seeks to solve this problem by configuring systems on smart phones, laptops, desktops and other devices to automatically identify, accept, and record an incoming call along with identification information, as well as initiate outgoing calls to identified recipients. *Id.* [0012-13], [0035].

76. *Pelttari* teaches this facilitation of audio communications through the use of functionality contained within “communication terminals” and “communication stations.” *Id.* [0012-13]. For example, *Pelttari* discloses a “recipient communication terminal” such as a smart phone, which comprises “a receiver configured to automatically identify and accept an incoming audio call,” where that audio call along with “identification parameters” is received “over a telephony channel” (a communication system) and automatically stored. *Id.* [0012]. In another embodiment, *Pelttari* discloses a “communication station, comprising a receiver configured to receive an audio call request including

identification parameters,” and containing functionality to receive and record audio content, determine the location of an identified recipient of a message, and initiate a call to transmit audio content to an identified recipient. *Id.* [0013].

77. *Pelttari* explains that the invention can be performed by a “computer program product” (*i.e.*, a software application) that contains “computer readable program code” (which one of ordinary skill in the art would have understood can be a module or modules) which enable both incoming and outgoing communications. *Id.* [0019-0021] (claiming “a computer program product” comprising various bodies of code to perform multiple functions such as “code for receiving an audio call request,” “code for storing audio content,” “code for initiating an audio call,” etc.); *see also id.* [0113], [0115]. A person of ordinary skill in the art would have understood these can constitute modules.

78. *Pelttari* also teaches the use of an API to facilitate communications. In particular, it teaches that when the communication terminal receives an incoming call, it identifies the communication on the basis of “predefined parameters.” Ex-1005 [0042]. These “predefined parameters” may be associated with a “known API which designates identifiers to services including audio content delivery.” *Id.* [0076].

79. *Pelttari* further discloses progressive storage of these incoming messages. An incoming call is stored “in one or more content stores appropriate for

storing and accessing content pertaining to the specified category.” Ex-1005 [0041]. These incoming calls may be accepted and stored “without alerting the user and without user intervention.” *Id.* [0075].

80. *Pelttari* also teaches the use of notifications in the form of “alerts.” For example, an “alert” is provided to the user when “entire content has been recorded or when only part of the content has been recorded and no storage space is available to record further data.” Ex-1005 [0047]. An “alert” may also be produced if the recipient communication terminal does not support the category specified by the predetermined parameters. *Id.* [0044]. The stored content may be accessed through an interface, which may “correspond to the relevant application” and “may comprise playback or deletion of the content.” *Id.* [0080].

81. *Pelttari* further discloses the use of recipient identity information in the process of recording and transmitting outgoing media. For example, in one embodiment *Pelttari* discloses that the “transmitter (305) may retrieve the contact parameters of the at least one recipient from an address book.” Ex-1005 [0072]; *see also id.* [0125] (“The computer program product may further comprise computer readable program code for obtaining contact details of a recipient from an address book.”).

VII. SUMMARY OF OPINIONS

82. I have reviewed and analyzed the prior art references and materials

referenced above. Claims 1, 5, and 12 of the '028 patent are obvious in view of the following prior art:

Ground	Claims	References
1	1, 5, 12	<i>Munje</i> (Ex-1002) and <i>Rand</i> (Ex-1003)
2	1, 5, 12	<i>Bulthuis</i> (Ex-1004) and <i>Pelttari</i> (Ex-1005)

83. I understand that each of the references cited in the grounds identified above qualifies as prior art with respect to the challenged claims of the '028 patent because each reference was filed and/or published before the earliest claimed effective filing date for the '028 patent.

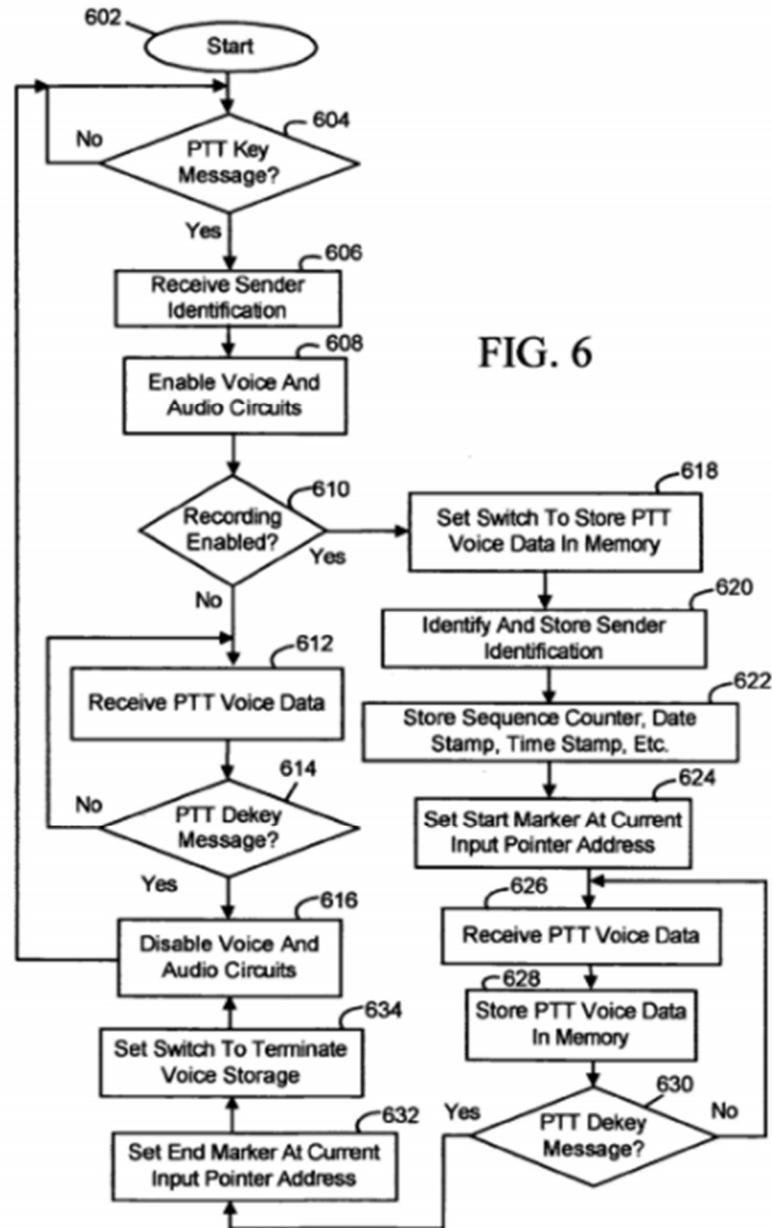
84. I am not presently aware of any evidence of objective factors suggesting the claims of the '028 patent are non-obvious. Should the Patent Owner submit evidence purportedly showing such objective factors, I reserve the right to consider the evidence and respond to it.

VIII. APPLICATION OF THE PRIOR ART TO THE CLAIMS OF THE '028 PATENT

A. Ground 1: Obviousness of Claims 1, 5, 12 in view of *Munje* and *Rand*

85. For the reasons explained in detail below, *Munje* in combination with *Rand* renders obvious Claims 1, 5 and 12 of the '028 patent.

software modules. In particular, Figure 6 is a schematic describing “a method of automatically recording PTT voice communications for replay in a mobile station” in accordance with the claimed invention:



Ex-1002, Fig. 6. *Munje* further explains that this described method “may be embodied in a computer program product,” which in turn includes multiple

“computer instructions stored in a storage medium,”—one of ordinary skill in the art would have understood this can constitute a software module or modules. *Id.* [0066]; *see also id.* [0066-0078], Claim 19 (claiming a “computer program product comprising” “computer instructions”).

89. *Munje* further discloses that the module is an embeddable software communications module because it sends, receives, records, stores, and otherwise enables communications. *See, e.g.*, Ex-1002 [0007] (describing claimed apparatus “for automatically recording Push-To-Talk (PTT) voice communications” received over “a wireless communication network”), Claim 10 (“[a] mobile station, comprising a wireless transceiver adapted to operate within a wireless communication network[.]”), Claim 19 (claiming software to enable the mobile station in Claim 10).

90. *Munje* also discloses an embeddable communications software module. Ex-1002 [0066] (method of Figure 6 “may be embodied in a computer program product” which comprises various “computer instructions” that are performed by “processors of the mobile station”), Claim 19.

91. Thus, *Munje* discloses an embeddable communications software module.

92. *Munje* additionally discloses a communications system. Ex-1002 [0080] (“A wireless communication system of the present application includes a

wireless communication network”), [0026] (detailing “communicat[ion] in and through wireless communication network” such as a “cellular telecommunications network”), [0035].

93. *Munje* further discloses software applications, including a user interface depicted in Figure 8:

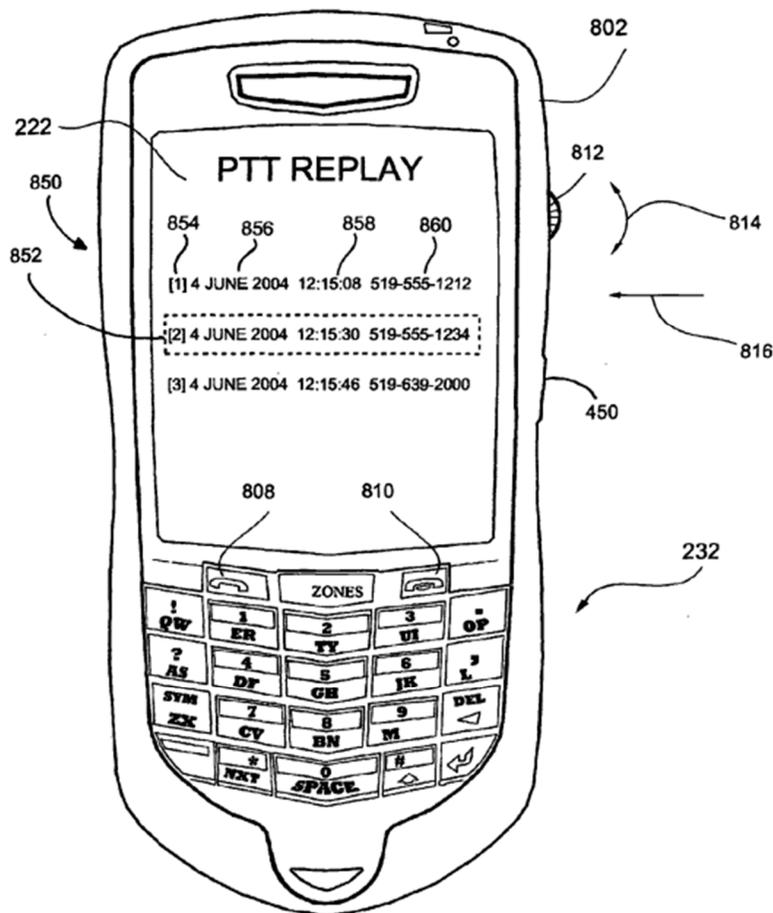


FIG. 8

Ex-1002 Fig 8, [0058]. *Munje* claims that such a user interface can be implemented with a software application. *See id.* Claim 10 (claiming a “mobile station”

comprising, *inter alia*, “a user interface” which includes a PTT “switch for transmitting a PTT voice communication through the wireless transceiver”), Claim 19 (claiming software for the user interface separately from the wireless transceiver of Claim 10), Claim 20 (claiming software for Claim 19 as well as for responding to “user actuation of a switch” causing retrieval and replay of recorded voice data). The software application disclosed in *Munje* provides a user interface for conveying user actions such as “a Push-to-Talk (PTT) switch for transmitting a PTT voice communication[.]” Ex-1002 Claim 10; *see also id.* [0060], [0068] (disclosing that a “recording feature may be an option and may be selectable and settable by a service provider or end user at the user interface of the mobile station.”), Claim 19, Fig. 6.

94. *Munje* also discloses various third-party and integrated software applications, including “[a] predetermined set of applications which control basic device operations,” “[a] preferred application that may be loaded onto [the] mobile station” such as a “personal information manager” organizing e-mail, calendar, and other data items, and “[a]dditional applications [that] may also be loaded onto [the] mobile station[.]” Ex-1002 [0037-0038].

95. *Munje* teaches that the embeddable communications software module allows a software application to access one or more communications systems. Specifically, *Munje* teaches that, upon user interaction with the software

application user interface, the embeddable communications software module in turn interacts with the device hardware in Figure 4 to set message behavior policies and initiate or receive calls over the communications network. Ex-1002 Fig. 6, Claim 10, Claim 19. Therefore, *Munje* discloses that the module allows the software application to access the communication system.

96. *Munje* further discloses a software module that allows the software application to access a communications system providing time-delayed communication because the disclosed invention comprises, *inter alia*, computer instructions for “receiving voice data of a PTT voice communication,” “causing the voice data ... to be recorded,” and “causing the voice data ... to be retrieved from the memory and audible voice signals corresponding to the voice data to be output.” Ex-1002 Claim 19, Claim 20; *see also id.* Fig. 6, [0066].

97. *Munje* discloses a software module that allows the software application to access a communications system providing near real time communication because the invention discloses “conventional PTT voice communication.” Ex-1002 [0068]; *see also id.* [0054] (disclosing “the conventional listening of voice with simultaneous recording in memory”).

98. *Munje* discloses that the embeddable communications software module is stored in a non-transitory tangible computer readable storage medium. *Munje* teaches that the invention “may be embodied in a computer program

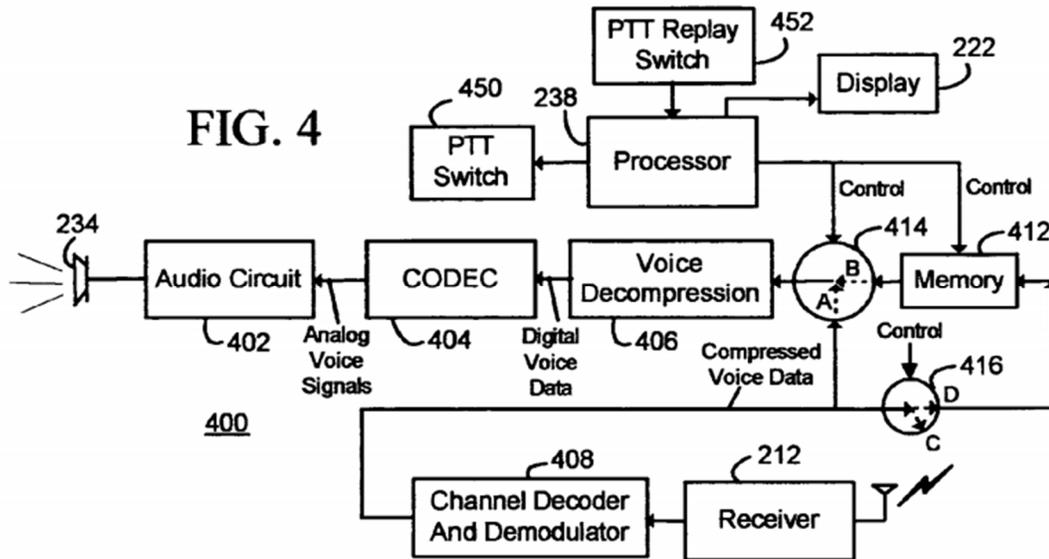
product which includes a storage medium (e.g. computer disk or memory) and computer instructions stored in the storage medium.” Ex-1002 [0066]; *see also id.* [0081] (disclosing that the computer program product “includes a storage medium”), Claim 19 (disclosing that the computer program product comprises “computer instructions stored in the storage medium”), [0036] (“system software . . . is preferably stored in a persistent store such as flash memory . . . or similar storage element.”).

- b. provide an application programming interface (API) that allows the embeddable communications software module to receive API inputs from the software application, the embeddable communication software module and the software application communicating through API;**

99. *Munje* discloses an application programming interface that allows the embeddable communications software module to receive API inputs from the software application, and thus, the embeddable communications software module and the software application communicate through the API.

100. As I discuss in Paragraphs 86-98, *Munje* discloses that the mobile device contains an embeddable communications software module and that various software applications—including the user interface, integrated applications, and third-party applications—access a communications system through the embeddable communications software module. That module includes the software which enables the steps described in Figure 6, which I discuss in Paragraphs 86-94 above,

and which is used for the operations of the hardware in Figure 4 below. See discussion *supra* at Paragraphs 86-90.



Ex-1002 Fig. 4.

101. An API was a commonly used mechanism to integrate multiple software components, and the use of APIs to do so was regular industry practice long before the *Munje* disclosure. Therefore, it would have been obvious to a person of ordinary skill in the art, even without resorting to the disclosure of any other reference, to modify *Munje* to use an API to facilitate the communication of information between the module and the user interface software (associated with Display 222) so that they communicate “through the API.” Ex-1002 Fig. 6, Claim 19.

102. In short, *Munje* discloses or renders obvious that the embeddable

communications software module and the software application communicate through the API. However, to the extent that a combination is required, it is my opinion that the combination of *Munje* with *Rand* renders obvious that the embeddable communications software module and the software application communicate through the API.

Rationale and Motivation to Combine

103. A person of ordinary skill in the art would have been motivated to extend or combine *Munje* with the functionality described in *Rand* in terms of enabling the embeddable communications software module and the software application to communicate through an API for a multitude of reasons.

104. *Munje* and *Rand* are in the same field of endeavor, namely PTT voice communications. Ex-1002 Abstract, [0002], [0007], [0020]; Ex-1003 1:5-8, 9:26-36, 11:5-8, 11:23-27, 13:9-16, 20:9-13, 25:1-7, 25:27-44.

105. Both *Munje* and *Rand* are also aimed at addressing the same problem, namely a limitation with then-conventional PTT voice communications that such communications are instantaneous and the listener may be unable to hear, or uninterested in hearing, the communication as it arrives at a communication device. Ex-1002 [0005-6] (“An end user of the mobile station may be busy or caught ‘off-guard’ and not listening to the initial communications. Thus, the end user may not hear at least the initial PTT voice communication. . . . Accordingly,

there is a resulting need for mobile station methods and apparatus to overcome the deficiencies of the prior art.”); Ex-1003 1:15-17 (“Unscheduled calls often interrupt the recipient because the callers are unaware of what the recipients are doing at that time.”), 2:8-15 (“[T]here is a risk that the recipient will not be there to answer the call. In this case, a follow up call is often delayed and forgotten as the caller resumes other work. It is therefore desirable to provide a communications system that encourages spontaneous communication and provides automated tools to alert and connect parties as they become available, without interrupting them.”).

106. Moreover, *Munje* and *Rand* propose to address the above-identified problem by offering similar solutions, namely an embeddable communications software module that allows a software application to access a communications system providing both near real-time and time delayed communication for playback. Ex-1002 Claim 10 (“the wireless transceiver being operative to . . . cause the voice data of the PTT voice communication to be recorded in the memory[.]”), [0080] (“a PTT replay switch for replaying a PTT voice communication previously received through the wireless transceiver and stored in . . . memory[.]”); Ex-1003 24:57-67 (“the message [may] automatically record as a voice clip and go to an inbox.”), 30:22-27 (disclosing that the recording buffer “can store messages for playback,” and a user may “select the size (e.g. recording time) of the buffer and when it records”).

107. In Figure 9A, *Rand* enables a software module to communicate with other software applications through use of an API:

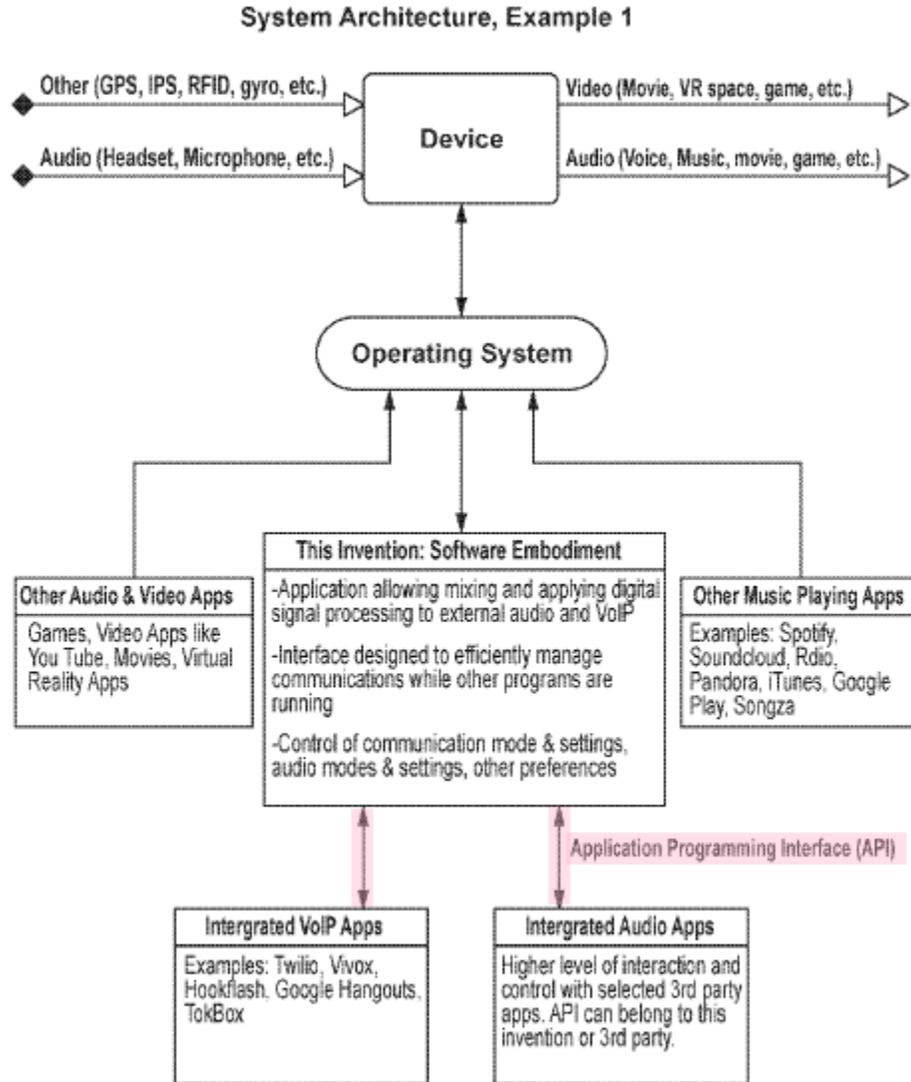


FIG. 9A

Ex-1003 Fig. 9A (annotated); *see also id.* 21:38-46 (“[t]he Application could integrate with third party VoIP and Audio Apps through an Application Programming Interface (API), Software Development Kit (SDK), or other

means.”).

108. Consequently, a person of ordinary skill in the art practicing *Munje* who did not find sufficient teaching for how the embeddable communications software module and the software application communicate through an API would have been motivated to try *Rand*'s teachings given that it was in the same field, was directed at the same problem, and offered a similar solution. Applying *Rand*'s use of an API to inputs sent from the software application to the embeddable communications software module would have enabled users of *Munje*'s system to be able to use the user interface software application to access the embeddable communications software module, thereby providing for the initiating, receiving, and storage of calls as they are being sent and allowing it to play back these calls at any moment in time.

109. Furthermore, a person of ordinary skill in the art would have had the technical ability to combine known elements of *Munje* and *Rand* and would have known that each of those elements would perform the same function in combination as it does separately. As I discuss in Paragraphs 86-98, a person of ordinary skill in the art would have recognized that *Munje*'s device is already enabled with an embeddable communications software module and software applications, the module enabling storage and selective rendering of messages in a time-shifted mode. Thus, a person of ordinary skill in the art would have

understood that combining *Munje*'s embeddable communications software module and software applications with *Rand*'s invention of enabling communication between an embeddable communications software module and software application through the use of an API would have required nothing more than the application of a known technique to a known product ready for improvement. In other words, it would have been obvious to a person of ordinary skill in the art to adapt *Munje*'s system to provide *Rand*'s functionality, and such a combination could have been implemented without undue experimentation in any of various ways well known in the art.

- c. **receive an incoming message behavior policy from the software application, wherein the incoming message behavior policy controls how the embeddable communications software module responds to incoming messages;**

110. *Munje* discloses the receipt of an incoming message behavior policy from the software application, wherein this policy controls how the module responds to incoming messages.

111. *Munje* discloses that the determination of whether or not voice communications will be rendered live or in time shifted mode is effectuated through the configuration of processor-controlled switches that enable various functions such as “the conventional listening of voice,” “conventional listening of voice with simultaneous recording in memory,” Ex-1002 [0054], and “recording

for [incoming] PTT voice communications.” *Id.* [0068].

112. *Munje* explains that Step 610 in Figure 6 is where the claimed invention “identifies whether recording for PTT voice communications is enabled for the mobile station,” and that this feature “may be an option and may be selectable and settable by a service provider or end user at the user interface of the mobile station.” Ex-1002 [0068], Fig. 6; *see also id.* [0054] (detailing “different switch configurations” such as switch position “A” and “D” “for the conventional listening of voice with simultaneous recording in memory”), Claims 10, 19. In other words, *Munje* discloses that the incoming message behavior policy of whether to enable time-shifted communication by recording is something that can be set by the end user through the software application of the user interface.

113. *Munje* additionally discloses that such an incoming message behavior policy controls how the embeddable communications software module responds to incoming messages, detailing that:

Processor 238 controls switches 414 and 416 to be in one of three different switch configurations depending on the desired operation. In a first configuration, processor 238 controls switch 414 to be in switch position A and switch 416 to be in switch position C for the conventional listening of voice without recording. In a second configuration, processor 238 controls switch 414 to be in switch position A and switch 416 to be in switch position D for the conventional listening of voice with simultaneous recording in memory

412. In a third configuration, processor 238 controls switch 414 to be in switch position Band switch 416 to be in switch position C for the listening of previously recorded voice from memory 412. This listening may be prompted by an actuation of PTT replay switch 452, which may be a normal push-button switch or a switch activated by an insertion of a headset into the mobile station, for example.

Ex-1002 [0054], Fig. 4, [0070] (“If the processor identifies that the recording feature is enabled . . . conventional PTT voice communication processing and recording of the voice data . . . are performed.”), Claims 10 and 19.

d. receive an incoming message from an [sic] remote communications device;

114. *Munje* discloses that the embeddable communications software module receives an incoming message from a remote communications device.

115. *Munje* teaches that the wireless transceiver is part of the claimed module in the mobile station, (*see* Ex-1002, Abstract), and “[t]he wireless transceiver is operative to receive . . . voice data of a PTT voice communication” from another device or mobile station. *Id.* [0007]; *see also id.* [0067] (teaching that the processor of the embeddable communications software module receives “an incoming PTT voice communication from the [other] sending mobile station[.]”), [0069], Claims 10, 19, 20.

e. progressively store the incoming message as it is received;

116. *Munje* discloses that the embeddable communications software

module progressively stores the incoming message as it is received by the module.

Munje teaches that the “[t]he processor is operative to cause the voice data of the PTT voice communication to be recorded in the memory[.]” Ex-1002 [0007].

Munje further teaches “the continuous receipt, processing, and storage of voice data of the PTT communication” by the embeddable communications software module. *Id.* [0072]; *see also id.* Fig. 6, Fig. 4, Claim 10, 19 (describing claimed “computer program product” as comprising, *inter alia*, “instructions executable by one or more processors” for receipt and handling of PTT and voice data).

- f. in response to the received message, send a notification to the software application based on the incoming message behavior policy;**

117. *Munje* discloses that the embeddable communications software module sends a notification to the software application in response to the received message. In particular, *Munje* discloses “visual[] display indicators for PTT voice communications that were . . . received” and “PTT voice record indicators” that “are displayed for review by the end user.” Ex-1002 [0061]. These visual display and voice record indicators (which one of ordinary skill in the art would have understood constitute notifications) on the user interface (which one of ordinary skill in the art would have understood to be a software application) are further depicted in Figure 8:

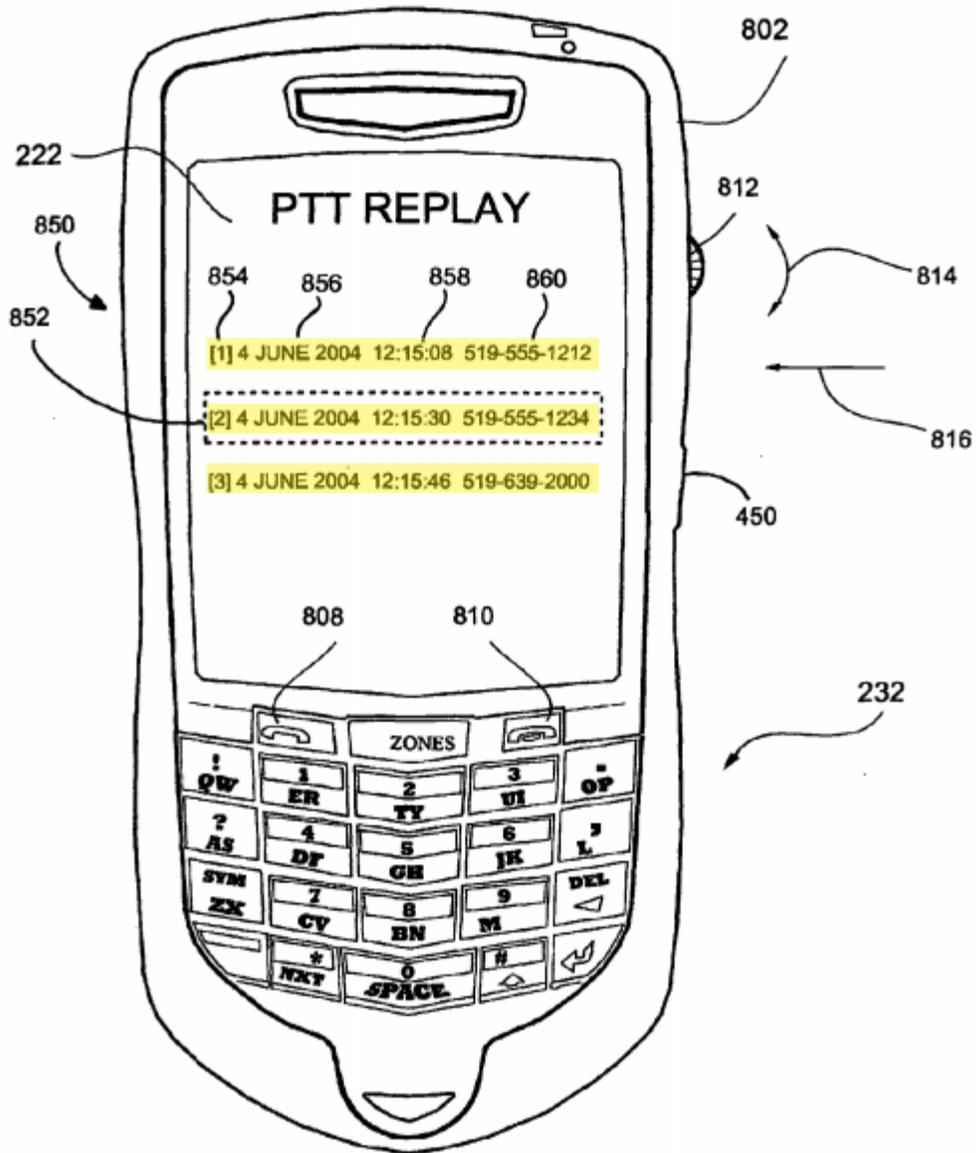


FIG. 8

Id. Fig. 8 (annotated).

118. *Munje* further teaches that the notification is based on the incoming message behavior policy. Ex-1002 [0061] (detailing that “any suitable . . . PTT

voice record indicators may be displayed” by an end user’s election), [0054] (teaching that an end user sets an incoming message behavior policy in the form of switches enabling various functions such as “the conventional listening of voice,” and the “conventional listening of voice with simultaneous recording in memory.”), [0068] (“The recording feature may be an option and may be selectable and settable by a[n] . . . end user at the user interface of the mobile station.”). Accordingly, in light of the role of embeddable communications software module as described in Paragraphs 86-115, a person of ordinary skill in the art would have understood that the voice record indicator notifications are sent by the embeddable communications software module to the software application in response to the recipient’s election of the incoming message behavior policy.

- g. selectively render the incoming message in a near real time mode, wherein the near real time mode involves progressively rendering the incoming message as it is received;**

119. *Munje* discloses that the embeddable communications software module is arranged to selectively render the incoming message in a near real time mode.

120. *Munje* recognizes the near real time nature of PTT voice communications by noting that “PTT voice communications are different from traditional cellular telephony communications in that the voice communications are generally immediate and unannounced,” and so an “end user . . . may be busy . . .

and not listening to the initial communication.” Ex-1002 [0005]. To address this problem by affording the option of listening to a recorded live communication at a later time, *Munje* discloses that the processor can “be in one of three different switch configurations,” with one such configuration enabling “the conventional listening of voice with simultaneous recording in memory.” *Id.* [0054].

121. *Munje* further discloses that near real time mode involves progressively rendering the incoming message as it is received because the invention allows for “conventional PTT voice communication.” Ex-1002 [0068] (disclosing “conventional PTT voice communication processing” during which “audible voice . . . [is] heard from the speaker of the mobile station”), [0054] (disclosing “the conventional listening of voice”).

122. *Munje* teaches that the embeddable communications software module is arranged to selectively render the incoming message in a near real time mode, because during “conventional PTT voice communication processing,” “voice data for the PTT voice communication is received through the wireless transceiver . . . [and] processed so that audible voice signals are heard from the speaker of the mobile station.” Ex-1002 [0068].

- h. selectively render the incoming message in a time-shifted mode, wherein the time shifted mode involves rendering the incoming message after the incoming message has been received and stored;**

123. *Munje* also instructs that the embeddable communications software

module may selectively render the incoming message in a time-shifted mode, wherein the time shifted mode involves rendering the incoming message after the incoming message has been received and stored.

124. *Munje* teaches that one “switch configuration” enables “the listening of previously recorded voice from memory.” Ex-1002 [0054]; *see also id.* [0008] (benefit of invention is that “PTT voice communications that are missed (e.g. especially the first PTT voice communication of a PTT session) may be replayed by an end user”).

125. *Munje* teaches that the embeddable communications software module is arranged to selectively render the incoming message in a time-shifted mode because “in response to detecting a user actuation of the PTT replay switch, the processor causes the voice data of the PTT voice communication to be retrieved from the memory and audible voice signals corresponding to the voice data to be output from the speaker.” Ex-1002; *see also id.* Fig. 4, Claims 10, 19, 20, [0080].

- i. **determine whether to render the incoming message in the near real time mode or the time-shifted mode based at least in part on the incoming message behavior policy,**

126. *Munje* further discloses that the embeddable communications software module determines whether to render the incoming message in near real-time mode or time-shifted mode, based at least in part on the incoming message behavior policy.

127. *Munje* teaches that the claimed mobile station enables “three different switch configurations depending on the desired operation.” Ex-1002 [0054]. Those switch configurations include enabling “the conventional listening of voice with simultaneous recording” (near real time mode) as well as “listening of previously recorded voice” (time-shifted mode). *Id.*

128. *Munje* further teaches that the determination of whether or not a live conventional voice message will be recorded for later play back in a time-shifted mode is “an option and may be selectable and settable by a service provider or end user at the user interface of the mobile station.” *Id.* [0068]. *Munje* explains that “[i]f the processor identifies that the recording feature is not enabled ..., then conventional PTT voice communication processing is performed.” *Id.*; *see also id.* Fig. 6, Claims 10, 19. Further, *Munje* claims that the retrieval and replaying of a previously recorded and stored message occurs “in response to detecting a user actuation of a switch.” *Id.* Claim 20.

j. wherein the software application is separate from the communication system that is accessed through the embeddable communications software module.

129. *Munje* teaches that the software application is separate from the communication system that is accessed through the embeddable communications software module.

130. *Munje* discloses that the claimed “mobile station” and its

implementing software is separate from the communication system accessed by that mobile station. *See, e.g.*, Ex-1002 [0010] (Figure 1 is “a block diagram which illustrates pertinent components of a mobile station and a wireless communication network”), [0080] (“A wireless communication system of the present application includes a wireless communication network”), [0026] (detailing use of the invention for “communicat[ion] in and through wireless communication network” such as a “cellular telecommunications network”), [0035]. I discuss the communications system in Paragraph 95.

131. Moreover, *Munje* discloses that the communication system is accessed through the embeddable communications software module. *See* Ex-1002 Claim 10 (“the wireless transceiver being operative to: receive a PTT key message” switch and then “receive voice data of a PTT voice communication following the PTT key message.”), Claim 19 (claim includes software implementation of wireless transceiver), [0068], Fig. 6. “After PTT switch [] depression, audible voice signals are received at the microphone of the mobile station and voice signals are transmitted through the wireless network and heard at certain other mobile stations.” *Id.* [0060], Fig. 6.

2. Claim 5: An embeddable communications software module as recited in claim 1 wherein the embeddable

communications software module is further arranged to:

- a. receive recipient identity information from the software application, the recipient identity information indicating an identity of a message recipient;**

132. *Munje* discloses that the embeddable communications software module is arranged to receive recipient identity information from the software application, recipient identity information indicating an identity of a message recipient.

133. *Munje* teaches “[a]n access list . . . used by the end user,” in which the “access list contains end user defined identities of other end users or groups.” Ex-1002 [0045]. *Munje* instructs that these “end users may initiate PoC [Push-to-Talk over Cellular]” communications by using the “interface” software application and clicking “accept-contact”; the contact “contains either the pre-configured ad-hoc identity (for instant personal talk and ad-hoc instant group) or a group identity (for instant group talk or chat group talk).” *Id.* [0049]. Accordingly, *Munje* discloses message recipient identity information.

134. *Munje* additionally discloses that the embeddable communications software module receives this recipient identity information from the software application. For example, *Munje* discloses that incoming PTT Voice Data and “Sender Identification” is stored by the module, as reflected in Figure 6. A person of ordinary skill in the art also would have understood that users interact with the

user interface, Ex-1002 [0049], and the user interface communicates with the embeddable communications software module to initiate voice calls. *Id.* [0060].

135. The embeddable communications software module is configured to make and record outgoing calls as well as receive incoming calls. *See* Paragraphs 114-115, 141-143, 145-146. Thus, a person of ordinary skill in the art would have understood that a recipient identity, once provided by the user to the software application, would be received by the embeddable communications software module and available for later use.

136. In short, *Munje* discloses or renders obvious that that the embeddable communications software module is arranged to receive recipient identity information from the software application. However, to the extent that a combination is required, the combination of *Munje* with *Rand* renders obvious that the embeddable communications software module is arranged to receive recipient identity information from the software application, it does so in combination with *Rand*.

Rationale and Motivation to Combine

137. As detailed in Paragraphs 104-106, a person of ordinary skill in the art would have been motivated to extend or combine *Munje* with the functionality described in *Rand* because they are both in the same field of endeavor (PTT voice communications), address the same problem (recording and playback of PTT

communications), and offer similar solutions (an embeddable communications software module that allows a software application to access a communications system for PTT communications).

138. *Rand* discloses that the user interface software application displays message recipient identity information in Figures 1A and 2A:

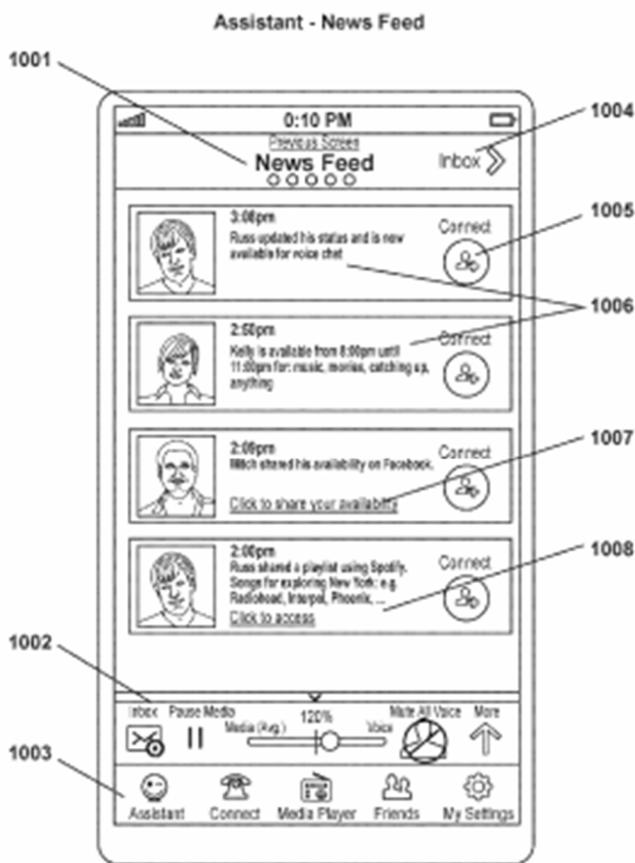


FIG. 1A

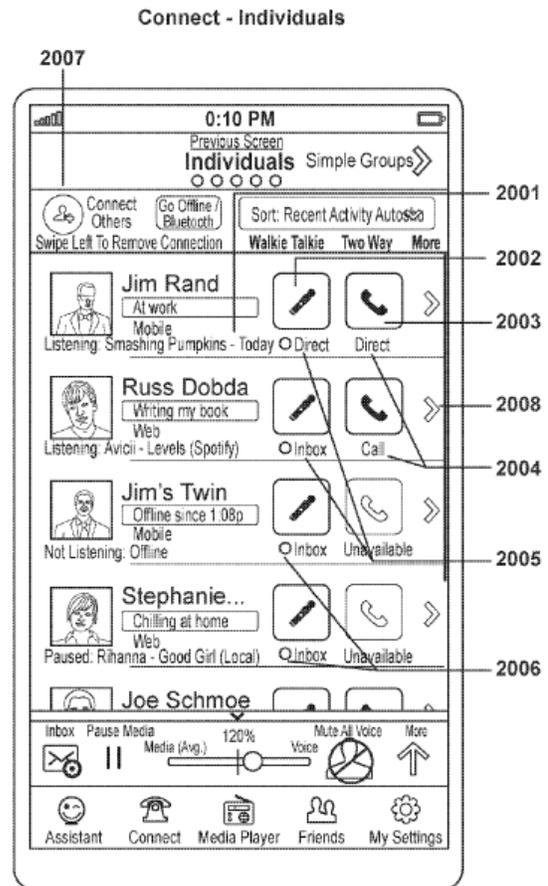


FIG. 2A

Ex- 1003 Figs. 1A, 2A; *see also id.* Figs. 1B, 2C, 3A. Thus, *Rand* discloses a software application that receives user input, including recipient identity information that indicates an identity of a message recipient.

139. A person of ordinary skill in the art would have been motivated to extend *Munje*'s system to provide the same functionality taught in *Rand* in terms of receiving recipient identity information from a software application. Such functionality would allow the users of *Munje*'s invention use of software application to specify recipients for outgoing calls. It would have been obvious to modify *Munje* such that the module receives the message recipient identity from the software application, as disclosed in *Rand*, as the two systems address similar technical challenges for the same application domain.

140. Moreover, such combination could have been implemented without undue experimentation in any of various ways well known in the art. A person of ordinary skill in the art would have recognized that *Munje*'s claimed invention is already enabled to initiate calls. Further, a person of ordinary skill in the art would have understood that combining *Munje*'s outgoing calls with *Rand*'s disclosure of the module's receipt of recipient information from a software application would have required nothing more than the application of a known technique to a known product ready for improvement.

b. record outgoing media created by a user;

141. *Munje* also discloses that the embeddable communications software module is arranged to enable the recording of outgoing media created by the user. *Munje* teaches that upon a user's "PTT button depression, the processor causes the voice data of the PTT voice transmission to be stored in the memory simultaneously with its transmission." Ex-1002 [0074]; *see also id.* Claim 10 ("processors being operative to: cause the voice data of the PTT voice communication to be recorded in the memory").

c. progressively transmit the outgoing media to [a] remote device while the outgoing media is being created by the user wherein the message recipient of the outgoing media is identified by the recipient identity information received from the software application; and

142. *Munje* discloses that the embeddable communications software module progressively transmits outgoing media to a remote device while the outgoing media is being created by the user wherein the message recipient of the outgoing media is identified by the recipient identity information received from the software application.

143. *Munje* discloses that upon a user's "PTT button depression, the processor causes the voice data of the PTT voice transmission to be stored in the memory simultaneously with its transmission." Ex-1002 [0074]; *see also* [0049] ("end users may initiate PoC [Push-to-Talk over Cellular]" communications).

144. Moreover, as I explained in Paragraphs 132-135, *Munje* discloses that a message recipient of the outgoing media is identified by the recipient identity information received from the software application; to the extent *Munje* does not make explicit or obvious that the embeddable communications software module is arranged to receive recipient identity information from the software application, it does so in combination with *Rand*.

d. progressively store the outgoing media while the outgoing media is being created and transmitted.

145. Finally, *Munje* discloses that the embeddable communications software module enables progressive storage of outgoing media while the outgoing media is being created and transmitted.

146. *Munje* teaches that upon a user's "PTT button depression, the processor causes the voice data of the PTT voice transmission to be stored in the memory simultaneously with its transmission." Ex-1002 [0074].

3. Claim 12

147. Independent claim 12 recites limitations that are very similar to those of independent claim 1 and dependent claim 5 and therefore, these limitations are disclosed by *Munje* in combination with *Rand* for many of the same reasons.

- a. **An embeddable communications software module that allows a software application to access a communications system providing both time delayed and near real time communication, the embeddable communications software module stored in a non-transitory tangible computer readable storage medium wherein the embeddable communications software module is arranged to:**

148. For reasons explained with respect to claim 1 above, *Munje* discloses an embeddable communications software module that allows a software application to access a communications system providing both time delayed and real time communication, which is stored in a non-transitory tangible computer readable storage medium. *See* Section VIIIA1a.

- b. **provide an application programming interface (API) that allows the embeddable communications software module to receive API inputs from the software application, the embeddable communication module and the software application communicate through the API;**

149. For the reasons explained with respect to claim 1 above, *Munje* by itself and in combination with *Rand* discloses an API that allows the embeddable communications software module to receive API inputs from the software application, and thus, the embeddable communications software module and the software application communicate through the API; to the extent that *Munje* does not render obvious that the module and the software application communicate through the API, it does so in combination with *Rand*. *See* Section VIIIA1b.

- c. receive recipient identity information from the software application, the recipient identity information indicating an identity of a message recipient;**

150. For the reasons explained with respect to claim 5 above, *Munje* discloses that the embeddable communications software module is arranged to receive recipient identity information from the software application, the recipient identity information indicating an identity of a message recipient; to the extent *Munje* does not make explicit or obvious that the embeddable communications software module is arranged to receive recipient identity information from the software application, it does so in combination with *Rand*. See Section VIIIA2a.

- d. record outgoing media created by a user,**

151. For the reasons explained with respect to claim 5 above, *Munje* discloses that the embeddable communications software module records outgoing media created by the user. See Section VIIIA2b.

- e. progressively transmit the outgoing media to a remote communications device associated with the message recipient while the outgoing media is being created by the user, wherein the message recipient of the outgoing media is identified by the recipient identity information received from the software application; and**

152. For the reasons explained with respect to claim 5 above, *Munje* discloses that the embeddable communications software module progressively transmits outgoing media to a remote communications device associated with the

message recipient while the outgoing media is being created by the user, wherein the message recipient of the outgoing media is identified by the recipient identity information received from the software application. *See* Section VIIIA2c.

153. *Munje* additionally discloses that the outgoing message is progressively transmitted to a remote communications device associated with the message recipient. For example, *Munje* discloses that “[e]nd users may initiate PoC [Push-to-Talk over Cellular]” communications by using the “interface” software application and clicking “accept-contact”; the contact “contains either the pre-configured ad-hoc identity (for instant personal talk and ad-hoc instant group) or a group identity (for instant group talk or chat group talk).” Ex-1003 [0049]. Thus, *Munje* instructs that a user may progressively transmit outgoing media to a remote communications device associated with a particular message recipient. *See also* Section VIIIA2c.

f. progressively store the outgoing media while the outgoing media is being created and transmitted,

154. For the reasons explained with respect to claim 5 above, *Munje* discloses that the embeddable communications software module progressively stores outgoing media while the outgoing media is being created and transmitted. *See* VIIIA2d.

- g. wherein the software application is separate from the communication system that is accessed through the embeddable communications software module.**

155. For the reasons explained with respect to claim 1 above, *Munje* discloses that the software application is separate from the communication system that is accessed through the embeddable communications software module. *See* Section VIIIA1j.

B. Ground 2: Obviousness of Claims 1, 5, and 12 in view of *Bulthuis* and *Pelttari*

156. For the reasons explained in detail below, *Bulthuis* combined with *Pelttari* renders obvious claims 1, 5, and 12 of the '028 patent.

1. Claim 1

- a. An embeddable communications software module that allows a software application to access a communications system providing both time delayed and near real time communication, the embeddable communications software module stored in a non-transitory tangible computer readable storage medium, wherein the embeddable communications software module is arranged to:**

157. *Bulthuis* discloses the preamble of Claim 1.

158. *Bulthuis* discloses an embeddable communications software module that allows a software application to access a communications system. *Bulthuis* explains that the claimed “invention uses a module with a storage for coupling with the communication device for enabling recording of the real time communication,” and that this module (contained in the “consumer electronics communication

device”) is embeddable as it “is controllable via a user-interface of the device.” Ex-1004 4:20-30, 2:8-9; *see also id.* Claim 18 (claimed invention includes “a software application enabling a programmable device when executing said software application to function as a device.”).

159. *Bulthuis* also teaches that the claimed module enables accessing a communications system. For example, the invention in *Bulthuis* is directed at facilitating communications via consumer electronics devices, where “[t]he term ‘communication’ shall be used [] to include telephone calls, whether audio, video, or multimedia in nature, and whether or not occurring via conventional telephonic devices or via the Internet or another data network.” Ex-1004 5:15-17. *Bulthuis* explains that “a certain key or pattern of keys is reserved for user-interaction with the module to implement, e.g., scrolling through the communication stored on the module, or replaying the communication most recently recorded, or to activate the recording during a real time communication upon a user input.” *Id.* 4:20-27.

160. *Bulthuis* additionally discloses software applications, Ex-1004 11:9-17, Claim 18, and user interfaces for interacting with the device. *Id.* 2:8-20, 4:4-6, 7:16-17. A person of ordinary skill in the art would have understood that the user interfaces disclosed in *Bulthuis* would be implemented as part of a software application that executes on the mobile device.

161. *Bulthuis* further teaches providing both time delayed and near real

time communication. For instance, *Bulthuis* discloses “a first functionality adapted to enable real-time communication via the device.” Ex-1004 2:9-10. *Bulthuis* also describes “a second functionality to enable recording of the real time communication.” *Id.* 2:10-11. And the device “comprises a last-communication rewind mechanism for replay of at least a part, e.g., the last 5 minutes, of the communication recorded most recently.” *Id.* 3:10-11.

162. Additionally, *Bulthuis* discloses that the module is stored in a non-transitory tangible computer readable storage medium. For example, *Bulthuis* explains that the “invention [] relates to a storage medium readable by a data processing device. The medium carries software adapted to perform operations[.]” Ex-1004 4:31-5:3. Thus, the non-transitory storage medium carries the module. *See also id.* 2:25-28 (also disclosing that the device has “onboard storage,” such as “a solid state memory card/module or a HDD module with a small form factor that stores a copy of the communication or conversation conducted in real time”). A person of ordinary skill in the art would have understood this discloses that the invention is stored in a non-transitory tangible computer readable storage medium because the claimed functionality would need to survive device power cycles.

- b. provide an application programming interface (API) that allows the embeddable communications software module to receive API inputs from the software application, the embeddable communication software module and the software application communicating through the API;**

163. *Bulthuis*, both by itself and in view of *Pelttari*, discloses this claim limitation. *Bulthuis* teaches the embeddable communications software module (the “module with storage”) communicates with the software application (the “user interface”) by way of “inputs,” or API inputs associated with an API.

164. *Bulthuis* teaches that the invention’s “module with a storage for coupling with the communication device for enabling recording of the real time communication” is “[p]referably ... controllable via a user-interface of the device....” Ex-1004 4:20-23. That user interface (i.e., the software application) exchanges information with the module, including inputs to the module. *See, e.g., id.* 4:5-6 (“user interface ... then enables the subscriber to select the mode of organization or representation”), 2:11-15 (“the first functionality comprises at least one user interface mechanism for providing real-time audio and/or visual information to a user and to receive real-time audio and/or visual information from the user,” and “a user input to enable the user to select a portion of the real time communication for recording”); *see also id.* 4:32-5:1, 10:12-13.

165. This interaction between a user interface and a software module that provides communication services is further disclosed in a patent application that is

expressly incorporated in *Bulthuis*. Ex-1004 1:5-8, citing U.S. Pat. App. Ser. No. 09/780,229 Filed 2/9/01 (Ex-1010). The '229 application states that the described user interface “provides output to software performing an action based on the user selection.” Ex-1010 7:28–29.

166. An API was a commonly used mechanism to integrate multiple software components, and the use of APIs to do so was regular industry practice long before the *Bulthuis* disclosure. It therefore would have been obvious to a person of ordinary skill in the art, even without resorting to the disclosure of any other reference, to modify *Bulthuis* to use an API to facilitate the communication of information between the module and the user interface so that they communicate “through the API.”

167. Moreover, if *Bulthuis* alone does not expressly disclose or render obvious this limitation, it does so in combination with *Pelttari*. *Pelttari* discloses the use of an API in software to facilitate the processing of incoming communications over a communications system. Ex-1005 [0102].

168. For example, *Pelttari* claims “computer readable program code for receiving an audio call request including identification parameters relating to a category pertaining to content of said audio call for one or more recipients...” Ex-1005 [0115]. These “predefined parameters” may be associated with a “known API which designates identifiers to services including audio content delivery.” *Id.*

[0076], [0045].

Rationale and Motivation to Combine

169. A person of ordinary skill in the art would have been motivated to combine *Bulthuis* and *Pelttari* for a number of reasons.

170. *Bulthuis* and *Pelttari* are in the same field of art, namely processing and recording real-time communications, such as audio and video, transmitted across wireless communications networks. *Compare* Ex-1004 1:29-2:1 (“The invention therefore records real time communications and stores them as data to enable people or data processing systems to retrieve them.”) *with* Ex-1005 [0012] (disclosing a “recipient communication terminal, comprising a receiver configured to automatically identify and accept an incoming audio call over a telephony channel”). Moreover, both references are directed to the same endeavor—software applications that can be configured to automatically record real-time communication between mobile device users. Ex-1004 Abstract, 1:13-14, 1:20-21, Claim 18; Ex-1005 [0002], [0012], [0020], [0040].

171. Both *Bulthuis* and *Pelttari* also address similar technical challenges for the same application domain. In particular, both references disclose software applications with which the user interacts. Ex-1004 4:31-5:3, Claim 18; Ex-1005 [0078], [0080], [0105], [0125]. *Pelttari* provides detail on how such a software application may be arranged, and how it can use a well-defined API to access

communication and related services. Ex-1005 [0045], [0076], [0077], [0102]. It would have been obvious to a person of ordinary skill in the art implementing *Bulthuis's* invention to consider the teachings of *Pelttari*.

172. Consequently, a person of ordinary skill in the art reviewing *Bulthuis's* software application would have been motivated to modify *Bulthuis's* application to use standard APIs to access communication and audio functionality. Indeed, the use of a standard API was well known and is the standard mechanism by which applications were structured. *Bulthuis* explicitly envisions that its invention would be coupled to multiple different applications. Ex-1004 11:10-17.

173. A person of ordinary skill in the art would have known that it was common for multiple applications to access the same functionality using an API. It would have been obvious to a person of ordinary skill in the art to adapt *Bulthuis's* system to use an API to access communications and audio functionality, and that such a combination could have been implemented without undue experimentation in any of various ways well known in the art. A person of ordinary skill in the art would have understood that extending *Bulthuis's* software application with *Pelttari's* disclosure of APIs would have required nothing more than the application of a known technique to a known product ready for improvement.

- c. **receive an incoming message behavior policy from the software application, wherein the incoming message behavior policy controls how the embeddable communications software module responds to incoming messages;**

174. *Bulthuis* also discloses the claimed embeddable communications software module arranged to receive an incoming message behavior policy from the software application, where the policy controls how the embeddable communications software module responds to an incoming message.

175. For example, *Bulthuis* discloses policies “compris[ing] enabling automatic, or default, recording of at least part of a real-time communication between at least two subscribers,” Ex-1004 3:24-27; requiring the module to “forward the recording to a remote destination, e.g., determined by default or specified by the user or the communication system,” *id.* 5:1-3; profiling information such as “Caller-ID and other profiling information (e.g., time of day). . . [that] may be used to select for which communications to skip the recording or to explicitly carry out the recording,” *id.* 9:28-30; and “Opting out . . . the form of pressing of the button [] by the user.” *Id.* 6:21-25. And *Bulthuis* discloses a “rewind” feature that facilitates “replay of at least part of the communication recorded most recently.” *Id.* Claim 8.

176. *Bulthuis* discloses that these incoming message behavior policies are received by the claimed module from the software application user interface.

Specifically, *Bulthuis* teaches that the user provides inputs, either using hardware buttons or in a programmatic manner, to specify various message behavior policies. *See, e.g.*, Ex-1004 6:21-25 (“Opting out may be in the form of pressing of the button [] by the user.” “Or, there may be a programmable opt out option[.]”); *see also id.* 3:4-9, 5:24-28, Claim 7. A person of ordinary skill in the art would have understood that users interact with and provide policy-setting inputs to a user interface, that the inputs are received by the claimed module, and that the user interface is part of the software application executing on a mobile device.

d. receive an incoming message from an [sic] remote communications device;

177. *Bulthuis* discloses the embeddable communications software module receiving an incoming message from a “consumer electronics communication device” acting as the remote communications device. *See, e.g.*, Ex-1004 4:31-34 (“The invention also relates to a storage medium ... [which] carries software adapted to perform operations comprising: detecting initiation or acceptance of a live communication by a user of a consumer electronics communication device.”), Abstract (“Recording is started when a communication is initiated, either by the user making or accepting a call, or when a user presses a button”), 1:29-2:1 (“The invention therefore records real time communications....”).

e. progressively store the incoming message as it is received

178. *Bulthuis* likewise discloses that the embeddable communications software module progressively stores the incoming message as it is received. *Bulthuis* teaches that “[r]ecording is started when a communication is initiated, either by the user making or accepting a call, or when a user presses a button.” Ex-1004 Abstract, 1:20-21. Progressive storage of an incoming message is further illustrated in what *Bulthuis* calls the “last-communication rewind mechanism.” *Id.* 3:10. This mechanism stores “the last N minutes” of a conversation “through a circular buffer that starts overwriting itself when full.” *Id.* 3:16-17. According to *Bulthuis*, the storage contemplated by the invention is contained with the subject “module.” *Id.* 4:20-23.

f. in response to the received message, send a notification to the software application based on the incoming message behavior policy

179. *Bulthuis* in view of *Pelttari* renders this limitation obvious.

180. *Pelttari* teaches sending a notification to a software application based on an incoming message behavior policy in the form of an “alert.” Ex-1005 [0044], [0077], [0079]. For example, such an alert “may be produced informing the user of the arrival of new audio content.” *Id.* [0079], [0044], [0077]. *Pelttari* discloses that the notification is sent by the module. *Id.* 4:23-24 (“a certain key or pattern of keys is reserved for user-interaction with the module to implement[.]”); *see also* Claims

14, 19 (claims which do not assert user interface as a limitation but do assert producing “an alert” as a limitation).

Rationale and Motivation to Combine

181. In addition to the motivations explained in Paragraphs 169-171, it is my opinion that a person of ordinary skill in the art would have been motivated to implement *Bulthuis*'s system according to and informed by *Pelttari*'s teaching because both these references disclose a user interface that can be operated to access recorded calls. *Compare* Ex-1004 2:11-13, 10:12-13; *with* Ex-1005 [0047], [0080], Claim 66.

182. *Pelttari* further discloses that a user may be alerted when an incoming call has been recorded and if the device exhausts storage space. Ex-1005 [0047], [0077], [0079], [0113], Claim 9. A person of ordinary skill in the art reviewing *Bulthuis* would have been motivated to extend *Bulthuis*'s system to provide the same functionality described in *Pelttari*, namely adding an alert to the *Bulthuis* user interface upon recording of a new call, because such an implementation would enable the users of *Bulthuis*'s system to be notified of incoming calls that have been recorded without user intervention.

183. Indeed, such a functionality was well known for voice mail, which is explicitly disclosed in *Bulthuis*. Ex-1004 1:14-15, 6:10-13, 8:3-5. It would have been obvious to a person of ordinary skill in the art to adapt *Bulthuis*'s system to

provide this functionality, and that such a combination could have been implemented without undue experimentation in any of various ways well known in the art.

184. A person of ordinary skill would have recognized, for instance, that *Bulthuis*'s device is already enabled to selectively record and store incoming and outgoing calls, and that *Bulthuis*'s system already provides a user interface for the user to interact with recorded calls. Ex-1004 1:14-15, 1:20-21, 1:25-2:1, 2:25-28, 6:10-13, 6:32-34, 8:1-7. A person of ordinary skill in the art would have understood that *Bulthuis*'s device could further be augmented to notify the user, via the user interface in the software application, when a new call has been recorded. Additionally, a person of ordinary skill in the art would have understood that combining *Bulthuis*'s user interface with *Peltari*'s disclosure of a user notification upon call recording would have required nothing more than the application of a known technique to a known product ready for improvement.

- g. selectively render the incoming message in a near real time mode, wherein the near real time mode involves progressively rendering the incoming message as it is received;**

185. *Bulthuis* discloses selectively rendering the incoming message in a near real time mode, where the near real time mode involves progressively rendering the incoming message as it is received.

186. For example, *Bulthuis* discloses that the claimed system “has a first

functionality adapted to enable real-time communication via the device.” Ex-1004 2:9-13. Real time communication via a device involves progressively rendering an incoming message as it is received. The “module” in *Bulthuis* performs various functions as dictated by user input to a user interface, including “recording during a real time communication.” *Id.* 4:20-30.

- h. selectively render the incoming message in a time-shifted mode, wherein the time shifted mode involves rendering the incoming message after the incoming message has been received and stored; and**

187. *Bulthuis* also discloses selectively rendering the incoming message in a time-shifted mode, so that it is rendered after the incoming message has been received and stored.

188. *Bulthuis* discloses that the “second functionality” of the claimed device is to “enable recording of the real time communication.” Ex-1004 2:10-11. For example, *Bulthuis* discloses that “[p]referably, the device comprises at least one organizational mechanism for organizing the recorded communications in a retrievable form for the user.” *Id.* 2:21-24.

189. *Bulthuis* further explains how in the disclosed invention “a ‘last conversation rewind’ feature may be implemented. Such a feature may be activatable, for instance, by button 106, and would allow a user to replay the conversation most recently recorded.” *Id.* 7:28-30; *see also id.* 1:22-25 (discussing advantages of playing a message in such a time-shifted mode); 4:20-30 (claimed

module “replay[s]” recorded communications).

- i. determine whether to render the incoming message in the near real time mode or the time-shifted mode based at least in part on the incoming message behavior policy,**

190. *Bulthuis* discloses that the embeddable communications software module can be arranged to determine whether to render the incoming message in the near real time mode or the time-shifted mode based at least in part on the incoming message behavior policy.

191. For example, *Bulthuis* expressly discloses that a policy such as “Caller-ID and other profiling information (*e.g.*, time of day) . . . may be used to select for which communications to skip the recording or to explicitly carry out the recording.” Ex-1004 9:27-30. And *Bulthuis* discloses a “rewind” feature that facilitates “replay of at least part of the communication recorded most recently.” *Id.* Claim 8.

192. *Bulthuis* also discloses a policy “adapted to enable real-time communication via the device,” *id.* Claim 1, “comprising a user input to enable the user to select a portion of the real-time communication for the recording.” *Id.* Claim 3; *see also id.* Claim 10 (disclosing “enabling recording of at least part of a real-time communication between at least two subscribers), 5:19-30 (disclosing “real-time communications devices”).

- j. wherein the software application is separate from the communication system that is accessed through the embeddable communications software module.**

193. *Bulthuis* discloses that the software application is separate from the communication system that is accessed through the embeddable communications software module. *Bulthuis* enables communications on “consumer electronics communication device[s]” such as a “mobile phone,” a “video phone,” or “other real-time communications devices,” with such communications transmitted “via the Internet or another data network.” Ex-1004 2:8-9, 5:15-23. The Internet and conventional telephone networks are communications systems that are separate from the device claimed in *Bulthuis*.

- 2. Claim 5: An embeddable communications software module as recited in claim 1 wherein the embeddable communications software module is further arranged to:
 - a. receive recipient identity information from the software application, the recipient identity information indicating an identity of a message recipient;****

194. *Bulthuis* teaches that the embeddable communications software module receives recipient identity information from the software application, which indicates an identity of a message recipient.

195. *Bulthuis* discloses that recipient identity information is obtained and used for purposes of sending messages. For example, *Bulthuis* teaches that “when a communication is initiated, either by the user making or accepting a call, or when a

user presses a button,” the user can “forward” recordings of the call to an identified “remote user.” Ex-1004 Abstract. Additionally, *Bulthuis* discloses that the invention can be arranged to “forward the recording to a remote destination, e.g., determined by default or specified by the user or the communication system.” *Id.* 5:1-3; *see also id.* 7:9.

196. Further, the recipient identity information is provided from the software application, as *Bulthuis* discloses that users may initiate phone calls to the recipients. *Id.* 6:8-15 (teaching that a user may make a phone call), 8:11-15 (same), 8:16-18 (same). As detailed in Sections VIIIB1a-c, f, g, a person of ordinary skill in the art would have understood that users interact with a user interface that is part of a software application executing on the mobile device claimed in *Bulthuis*. Therefore, the user must specify the identity of the intended recipient to the software application, and this information is conveyed by the user-interface (that is part of the software application) to the embedded communications software module to initiate and record calls pursuant to *Bulthuis*.

197. In short, *Bulthuis* by itself discloses or renders obvious this element. However, to the extent a combination is needed, it is my opinion that *Bulthuis* in combination with *Pelttari* renders obvious that the embeddable communications software module receives recipient identity information from the software application, which indicates an identity of a message recipient.

198. *Pelttari* teaches the receipt of “an audio call request including identification parameters relating to a category pertaining to content of said audio call for one or more recipients, storing audio content of the audio call request, determining the location of each recipient. . . .” Ex-1005 [0016], [0115] (disclosing “computer readable program code for automatically determining the location of each recipient, computer readable program code for initiating an audio call, and computer readable program code for retrieving and transmitting stored audio content and identification parameters after the audio call has been initiated.”). These identification parameters can be obtained from the software application, e.g. the “address book,” *id.* [0125], or a “contact information storage unit,” *id.* [0078], or “[t]he computer program product may further comprise computer readable program code for receiving the identity of one of more recipients.” *Id.* [0116]. And, it is obvious that the recipient identity information would be conveyed to the module as *Pelttari* discloses that the module initiates and receives calls, among other things. *Id.* [0115], [0125].

Rationale and Motivation to Combine

199. As discussed above, *Pelttari* discloses a software application that receives user input, including recipient identity information that indicates an identity of a message recipient that is conveyed to the claimed module; moreover, *Bulthuis* discloses that users may initiate calls, and users in *Bulthuis* also interact

with software applications to initiate calls. To the extent it is not explicit in *Bulthuis*, it would have been obvious to modify *Bulthuis* such that the module receives recipient identity information from the software application in *Bulthuis* as disclosed in *Pelttari*, as the two systems address similar technical challenges for the same application domain. A person of ordinary skill reviewing *Bulthuis*'s invention would have been motivated to extend the system in *Bulthuis* to provide the same functionality of *Pelttari* in terms of receiving recipient identity information from a software application. Such functionality would allow users of *Bulthuis*'s system the ability to access a software application to specify recipients for outgoing calls.

200. Moreover, this combination could be implemented without undue experimentation in any of various ways well known in the art. A person of ordinary skill would have recognized, for instance, that *Bulthuis*'s claimed device is already enabled to initiate calls. Further, a person of ordinary skill would have understood that combining *Bulthuis*'s outgoing calls with *Pelttari*'s disclosure of receipt by the module of recipient information from a software application would have required nothing more than the application of a known technique to a known product ready for improvement.

b. record outgoing media created by a user;

201. *Bulthuis* discloses recording outgoing media created by the user. For

example, *Bulthuis* teaches “automatically recording real-time communication in response to a user initiating or accepting the real-time communication.” Ex-1004 1:20-21.

- c. **progressively transmit the outgoing media to a remote device while the outgoing media is being created by the user wherein the message recipient of the outgoing media is identified by the recipient identity information received from the software application; and**

202. *Bulthuis* likewise discloses that the embeddable communications software module recited in Claim 1 is arranged to progressively transmit the outgoing media to a remote device while the outgoing media is being created by the user.

203. *Bulthuis* teaches that “[a] consumer electronics device, such as a cell phone, is designed to record real time communications occurring on it. Recording is started when a communication is initiated, either by the user making or accepting a call, or when a user presses a button...” Ex-1004 Abstract. *See also id.* 1:20-21. Because the communication is in real time, it is being progressively transmitted while it is being created.

204. As discussed above in Paragraphs 194-200, the recipient of the outgoing media is identified by the recipient identity information received from the software application; to the extent *Bulthuis* does not render this limitation obvious, it does so in combination with *Pelttari*.

- d. **progressively store the outgoing media while the outgoing media is being created and transmitted.**

205. *Bulthuis* teaches that the embeddable communications software module recited in Claim 1 is arranged to progressively store the outgoing media while it is being created and transmitted. *Bulthuis* discloses that “[a] consumer electronics device, such as a cell phone, is designed to record real time communications occurring on it. Recording is started when a communication is initiated, either by the user making or accepting a call, or when a user presses a button. Recordings are stored and organized for ease of retrieval. Recordings can be forwarded to a remote user.” Ex-1004 Abstract.

3. Claim 12

206. As noted already, independent claim 12 recites limitations that are very similar to those of independent claim 1 and dependent claim 5 and therefore, are disclosed by *Bulthuis* in combination with *Pelttari* for many of the same reasons.

- a. **An embeddable communications software module that allows a software application to access a communications system providing both time delayed and near real time communication, the embeddable communications software module stored in a non-transitory tangible computer readable storage medium wherein the embeddable communications software module is arranged to:**

207. For the reasons explained with respect to claim 1 above, *Bulthuis* discloses an embeddable communications software module that allows a software

application to access a communications system providing both time delayed and near real time communication, which is stored in a non-transitory tangible computer readable storage medium. *See* Section VIII B1a.

- b. provide an application programming interface (API) that allows the embeddable communications software module to receive API inputs from the software application, the embeddable communication module and the software application communicate through the API;**

208. For the reasons explained with respect to claim 1 above, *Bulthuis* by itself or in combination with *Pelttari*, discloses or renders obvious an API that allows the embeddable communications software module to receive API inputs from the software application, and thus, the embeddable communications software module and the software application communicate through the API. *See* Section VIII B1b.

- c. receive recipient identity information from the software application, the recipient identity information indicating an identity of a message recipient;**

209. For the reasons explained with respect to claim 5 above, *Bulthuis* by itself or in combination with *Pelttari*, discloses or renders obvious that the embeddable communications software module is arranged to receive recipient identity information from the software application, the recipient identity information indicating an identity of a message recipient. *See* Section VIII B2a.

d. record outgoing media created by a user,

210. For the reasons explained with respect to claim 1 above, *Bulthuis* discloses that the embeddable communications software module records outgoing media created by the user. *See* Section VIII B2b.

e. progressively transmit the outgoing media to a remote communications device associated with the message recipient while the outgoing media is being created by the user, wherein the message recipient of the outgoing media is identified by the recipient identity information received from the software application; and

211. *Bulthuis* discloses that the embeddable communications software module progressively transmits outgoing media to a remote communications device associated with the message recipient while the outgoing media is being created by the user wherein the message recipient of the outgoing media is identified by the recipient identity information received from the software application.

212. This claim limitation is the same as the limitation discussed in Section VIII B2c in Claim 5, except that it requires that the **remote communications device be associated with the message recipient**. *See* discussion in Sections VIII B2a, VIII B2c.

213. This modified limitation is also taught by *Bulthuis* in that *Bulthuis* teaches that the user of the claimed device can initiate a call to another user's

recipient phone, and can cause that audio call to be recorded as soon as “dial tones or ‘ringing’ tones are detected.” Ex-1004 8:11-18; *see also id.* Abstract, 6:14-15.

f. progressively store the outgoing media while the outgoing media is being created and transmitted,

For the reasons explained with respect to claim 5, *Bulthuis* discloses that the embeddable communications software module progressively stores outgoing media while the outgoing media is being created and transmitted. *See* Section VIII B2d.

g. wherein the software application is separate from the communication system that is accessed through the embeddable communications software module.

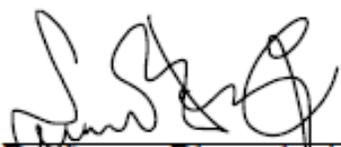
For the reasons explained with respect to claim 1, *Bulthuis* discloses that the software application is separate from the communication system that is accessed through the embeddable communications software module. *See* Section VIII B1j.

IX. CONCLUSION

214. For all of the foregoing reasons, claims 1, 5, and 12 of the '028 patent are unpatentable as obvious.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Dated: January 6, 2021

By: 
Dr. Samrat Bhattacharjee
Declarant