

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE, INC.

Petitioner

v.

MULLEN INDUSTRIES LLC

Patent Owner

Inter Partes Review No.

IPR2022-__

Patent No. 11,190,633

Filing Date: February 4, 2014

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DECLARATION OF DR. HARRY V. BIMS

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I, Harry Bims, declare as follows:

I. Introduction

1. I am an independent consultant. I am over eighteen years of age, and I would otherwise be competent to testify as to the matters set forth herein if I am called upon to do so.

2. I have prepared this Declaration for consideration by the Patent Trial and Appeal Board in the *Inter Partes* Review of U.S. Patent No. 11,190,633 (“the ‘633 Patent”).

3. I provide this Declaration at the request of Apple, Inc. in connection with the above-captioned *Inter Partes* Review. I have been informed and understand that Apple, Inc. contends that claims 1–39 of the ‘633 Patent are invalid.

4. I have been asked to provide my opinions regarding: (1) the field of art pertinent to the ‘633 Patent; (2) the level of ordinary skill in that field of art as of approximately the filing date of the application that yielded the ‘633 Patent; (3) how a person having such ordinary skill in the art (“POSITA”) of the ‘633 Patent would have understood certain terms used in the claims of the pertinent ‘633 Patent; (4) how a POSITA of the ‘633 Patent would have understood the contents of various patents and other art that was publicly available before the priority date of the ‘633 Patent; (5) whether any of those documents or prior art devices—alone or in combination with each other and/or the general knowledge of a person of ordinary skill in the art—disclose each and

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every element of any of the Asserted Claims; and (6) whether the Asserted Claims would have been obvious to one of ordinary skill in the art in light of the references that I considered alone or in combination with each other and/or the general knowledge of a person of ordinary skill in the art.

5. I am being compensated at my standard hourly rate of \$700 per hour. My compensation is not dependent on the outcome of, or any issue in relation to, the above captioned *Inter Partes* Review. I have no interest in either party.

6. In forming my opinions, I relied on my own personal knowledge, recollection, and experience in the field and on documents and information referenced in this Declaration.

7. My complete qualifications and professional experience as well as the list of litigation matters in which I have been engaged as an expert over the previous four years are described in my *Curriculum Vitae*, a copy of which can be found in Exhibit 1004. The following is a brief summary of my relevant qualifications and professional experience.

8. I am not an attorney. As shown in my *curriculum vitae*, I have extensive industry experience with telecommunications. Specifically, I have over thirty years of industry experience in the field of telecommunications in general, including network architecture and chip design for wireless communications.

9. I have worked extensively in the field of digital communications. I

have studied telecommunications and systems engineering since approximately 1981. Further, I have over 20 years of industry experience in computer network design, including the design of hardware and software for computer communications in a wireless context. During this period, I have designed and implemented various products that involve technologies related to the subject matter of the Asserted Patent.

10. I received a B.S. in Computer and Systems Engineering from Rensselaer Polytechnic Institute in 1985. In 1988, I received a M.S. in Electrical Engineering from Stanford University. In 1993, I received a Ph.D. in Electrical Engineering, also from Stanford University. As a graduate student at Stanford University, I studied the principles of digital communications theory, including data modulation and demodulation, error checking and correction algorithms, and the architecture and design of semiconductor circuits used for digital communications. My Ph.D. thesis at Stanford addressed the application of trellis coding and precoding to a digital modulation system, and was titled “Trellis Coding for Multi-Level, Partial Response Continuous Phase Modulation with Precoding.”

11. After receiving my Ph.D. in 1993, I worked for Glenayre Technologies – Wireless Access Group, where I focused on hardware and software architecture and design, including inventing, designing, and building a

patented computer system for real-time testing of two-way pagers and co-developing a wireless application protocol that included a CRC error checking algorithm. From 1999 to 2001, I was responsible for the software architecture for core SGSN and GGSN products for the GPRS market. I also held management responsibility for the Firmware, Hardware, Performance, and Systems Engineering Groups. In 2001, I developed a business plan for building network infrastructure for 802.11 enterprise networks, and then later that year founded AirFlow Networks, Inc. where I invented and received over eleven patents on its core technology, which was based on the 802.11 wireless local area network specification.

12. For example, I am the inventor of U.S. Pat. No. 7,236,470 (“the ’470 Patent”) issued on June 26, 2007, which currently names Broadcom Corporation as its assignee. The application for the ’470 Patent was filed with the United States Patent and Trademark Office (“USPTO”) on September 15, 2003, with priority to an earlier application filing date of January 11, 2002. Entitled “Tracking Multiple Interface Connections by Mobile Stations,” this patent discloses a method allowing a mobile station to have a first connection to a network over a first interface and determining that the mobile station is attempting to have a second connection to the network over a second interface other than the first interface.

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13. In another example, I am the inventor of U.S. Pat. No. 8,189,538 (“the ’538 Patent”), U.S. Pat. No. 8,144,640 (“the ’640 Patent”), U.S. Pat. No. 8,064,380 (“the ’380 Patent”), U.S. Pat. No. 7,957,741 (“the ’741 Patent”), U.S. Pat. No. 7,876,704 (“the ’704 Patent”), U.S. Pat. No. 7,689,210 (“the ’210 Patent”), U.S. Pat. No. 7,672,274 (“the ’274 Patent”), U.S. Pat. No. 7,668,542 (“the ’542 Patent”), U.S. Pat. No. 7,515,557 (“the ’557 Patent”), U.S. Pat. No. 7,149,196 (“the ’196 Patent”), U.S. Pat. No. 6,965,769 (“the ’769 Patent”), U.S. Pat. No. 6,862,448 (“the ’448 Patent”), U.S. Pat. No. 6,788,658 (“the ’658 Patent”), and U.S. Pat. No. 6,760,318 (“the ’318 Patent”). These patents (along with the ’470 Patent) disclose a digital Distributed Antenna System (“DAS”) for 802.11 network infrastructure, that distributes MAC-layer 802.11 packets from a central server to remote radio units (called “repeaters”) in the downlink direction, and concentrate MAC-layer 802.11 packets received from repeaters using a form of MAC-layer receiver diversity. The design for these systems created an overlay network that utilized existing Ethernet network infrastructure for the downlink and uplink pathways between the central server and the repeaters. As such, a central server could perform the upper MAC-layer functions of a single 802.11 access point that is coupled to distributed antennas located throughout a building infrastructure. These distributed antennas extend the geographic coverage of this high-level 802.11 access point in the central server throughout a facility or

campus. An implementation of this system that was developed under my direction was commercially deployed with repeaters that were time-synchronized using both over-the-air signaling in accordance with the 802.11 protocol, and wireline networking protocols.

14. I am currently the President of Protocomm Systems, LLC and Bims Laboratories, LLC, both of which I founded. As the President of Bims Laboratories, Inc., I perform technical research in wireless technology standards, such as LTE, 5G, IEEE 802.11 (“Wi-Fi”), Bluetooth, and other network communication protocols.

15. I am also named as an inventor on twenty-three telecommunications-related United States patents:

16. U.S. Pat. No. 6,259,911, entitled “Network Operations Center Hardware and Software Design”;

17. U.S. Pat. No. 6,557,134, entitled “ARQ Method for Wireless Communication”;

18. U.S. Pat. No. 6,760,318, entitled “Receiver Diversity in a Communication System”;

19. U.S. Pat. No. 6,788,658, entitled “Wireless Communication System Architecture Having Split MAC Layer”;

20. U.S. Pat. No. 6,862,448, entitled “Token-Based Receiver Diversity”;

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21. U.S. Pat. No. 6,965,769, entitled “Testing Center”;
22. U.S. Pat. No. 7,149,196, entitled “Location Tracking in a Wireless Communication System Using Power Levels of Packets Received by Repeaters”;
23. U.S. Pat. No. 7,236,470, entitled “Tracking Multiple Interface Connections by Mobile Stations”;
24. U.S. Pat. No. 7,515,557, entitled “Reconfiguration of a Communication System”;
25. U.S. Pat. No. 7,668,542, entitled “Token-Based Receiver Diversity”;
26. U.S. Pat. No. 7,672,274, entitled “Mobility Support Via Routing”;
27. U.S. Pat. No. 7,689,210, entitled Plug-in-Playable Wireless Communication System”;
28. U.S. Pat. No. 7,876,704, entitled “Tunneling Protocols for Wireless Communications”;
29. U.S. Pat. No. 7,957,741, entitled “Token-Based Receiver Diversity”;
30. U.S. Pat. No. 8,027,637, entitled “Single Frequency Wireless Communication System”;
31. U.S. Pat. No. 8,064,380, entitled “Reconfiguration of a Communication System”;
32. U.S. Pat. No. 8,144,640, entitled “Location Tracking in a Wireless Communication System Using Power Levels of Packets Received by Repeaters”;

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33. U.S. Pat. No. 8,189,538, entitled “Reconfiguration of a Communication System”;
34. U.S. Pat. No. 8,468,426, entitled “Multimedia-Aware Quality-of-Service and Error Correction Provisioning”;
35. U.S. Pat. No. 8,935,580, entitled “Multimedia-Aware Quality-of-Service and Error Correction Provisioning”;
36. U.S. Pat. No. 8,995,996, entitled “Methods and Apparatus for Performance Optimization of Heterogenous Wireless System Communities”;
37. U.S. Pat. No. 9,978,037, entitled “Personal Inventory and Product Support System”; and
38. U.S. Pat. No. 10,332,121, entitled “Light-Based Data Entry for Personal Inventory and Product Support System”.
39. In addition, I am a Technical Expert and former Vice-Chair and Secretary of the Institute of Electrical and Electronics Engineers (hereinafter “IEEE”) 802.16 Working Group, which develops standards for long range, metropolitan-area wireless networks that incorporate many wireless protocol functions, procedures, and messages, such as random access procedures, adaptive modulation and coding, and base station handover procedures.

II. Information Considered

40. I have considered the following documents:

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- a. The '633 Patent (Ex. 1001);
- b. The prosecution history of the '633 Patent (Ex. 1002);
- c. U.S. Patent No. 6,417,117 to Narayanaswami, et al (Ex. 1005);
- d. U.S. Patent Publication No. U.S. 2002/0115478 to Fujisawa, et al.
(Ex. 1006);
- e. U.S. Patent No. U.S. 6,539,336 to Vock, et al. (Ex. 1007);
- f. The Nokia 8890 User's Guide (Ex. 1008); and
- g. The other materials cited in my declaration.

III. Obviousness

41. I have been informed and understand that a claim is obvious in light of the prior art if the difference or differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious, at the time the invention was made, to a person having ordinary skill in the art. I have been informed and understand that the Supreme Court provided an outline for analyzing obviousness in which it rejected an earlier test in favor of an “expansive and flexible approach” using “common sense.” I have also been informed and understand that the Supreme Court explained that under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. I have also been informed and understand that

the Supreme Court explained that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” I further have been informed and understand that the Court pointed to other factors that may show obviousness. These factors include the following principles:

- a. combination that unites that unites old elements with no change in their respective functions is unpatentable. As a result, the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results,
- b. a predictable variation of a work in the same or a different field of endeavor is likely obvious if a person of ordinary skill would be able to implement the variation,
- c. an invention is obvious if it is the use of a known technique to improve a similar device in the same way, unless the actual application of the technique would have been beyond the skill of the person of ordinary skill in the art. In this case, a key inquiry is whether the improvement is more than the predictable use of prior art elements according to their established functions,
- d. an invention is obvious if there existed at the time of invention a

known problem for which there was an obvious solution
encompassed by the patent's claims,

- e. inventions that were “obvious to try” — chosen from a finite number of identified, predictable solutions, with a reasonable expectation of success — are likely obvious,
- f. 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 would have been predictable to one of ordinary skill in the art, and
- g. an explicit teaching, suggestion, or motivation in the art to combine references, while not a requirement for a finding of obviousness, remains “a helpful insight” upon which a finding of obviousness may be based.

42. My complete qualifications and professional experience are described in my *Curriculum Vitae*, a copy of which can be found in Exhibit 1004. The following is a brief summary of my relevant qualifications and professional experience.

IV. U.S. Patent No. 11,190,633

43. I have been informed that the earliest priority date to which the Patent Owner may claim the '633 Patent is entitled to is March 14, 2003.

44. The '633 Patent states in its summary of the invention that the disclosure relates to systems and methods for allowing a user to recognize incoming calls or other cell phone events or notifications, even if the user cannot hear or sense audio signals or vibration signals physically emanating from the cellular phone. '633 Patent, 1:47-51.

45. More particularly, the summary surmises that it discloses an invention involving a “user signaling device” (in non-wireless or wireless communication with a cellular phone) that detects incoming cellular phone calls or other notifications and provides a supplemental notification to the user (such as an audible, mechanical, or light signal).

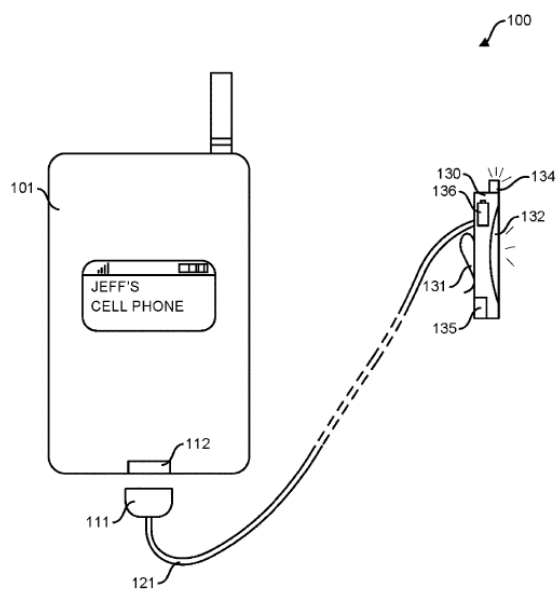


FIG. 1

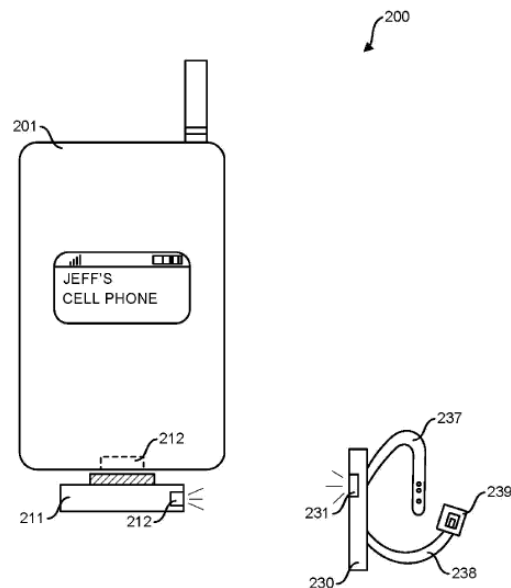


FIG. 2

See id., Figs. 1-2.

46. The '633 Patent purports to describe and to claim a novel remote notification device 130,230 (non-wireless and wireless respectively) that responds to signals from the communications device 112,211 on a cell phone 101,201 and alerts the user of an activity or event related to that phone. *Id.*, 3:11-18.

47. In both the non-wireless and wireless embodiments, the '633 Patent discusses a communication device 111,231, coupled with the remote notification device, that communicates with the communication device on the phone 112, 211. *Id.*, 3:31-41, 3:62-4:2. 33. In the non-wireless embodiment depicted in Figure 1, the communication device 111, coupled with the remote notification device 130, may communicate with the communication device on the phone 112 via the headset output, speaker, vibrational output and/or microphone jack. 3:21-25, 3:42-46. In the wireless embodiment depicted in Figure 2, the communication device 231, coupled with the remote notification device 230 may communicate with the communication device 211 on the phone 201. The phone communication device 211 may be used to “transmit/receive signals wirelessly to from remote notification device 230.” *Id.*, 3:67-4:1.

48. The '633 Patent also discusses means of attaching (i.e. clip, belt band, chain) the remote notification device 230 somewhere that a user may detect notifications (i.e. purse strap, clothing). *Id.*, 1:57-61, 3:53-56. That is, the remote

notification device 230 “may be embedded into a device that is commonly used by users (e.g., a watch, glasses, clothing) and may attach to a user by a variety of devices (e.g., bands 237 and buckle 239).” *Id.*, 4:13-16.

49. The ’633 Patent further discusses that “the functionality of remote notification device 230 may be embedded into a device that is commonly utilized by users. For example, if a user's watch has a wireless communications device, software may be included in the watch to provide a functionality similar to remote notification device 230.” *Id.*, 4:16-21

50. The ’633 Patent also proposes that when a user is remotely located from a phone, a system may still alert the user of the phones’ notifications via an autonomous notification sensing device 350 attached to the phone. 4:36-48; Fig.

3. The notification device 330, coupled to the autonomous device 350, produces a notification signal (e.g., sound, light, vibration) when the autonomous device senses an alert via a vibration sensor 352, a light sensor 353, or a sound sensor 354. *Id.*, 2:35-41; 4:49-5:3; 5:30-39; 5:52-59.

51. The ’633 Patent vaguely teaches there must be a method that “allows for remote notification device 130 to not only receive communication signals from cell phone 101 but also allows remote notification device 130 to send communication signals to cell phone 101”. *Id.*, 3:36-40. One embodiment of this method vaguely teaches “remote notification device 230 includes wireless

communications device 231 that can communicate with a wireless communications device located on cell phone 201. Communications device 211 may also be connected to cell phone 201 and may be utilized to transmit/receive signals wirelessly to/from remote notification device 230 through communications port 212”. However, unlike the prior art, there is no disclosure in the specification or file history of the ’633 Patent that describes the function(s) and/or technique(s) that a POSITA would use to implement such a method, beyond a vague reference to “communication between autonomous device 350 and notification device 330 may occur wirelessly (e.g., infrared, WiFi, Bluetooth, etc.)”, which can be used “to turn autonomous device 350 OFF”. *Id.*, 4:65-5:3.

52. At the time of the ’633 Patent filing date, communication protocols such as IrDA, WiFi, and Bluetooth each facilitate communication using different wireless RF signal formats, such as frequency hopping signaling, direct sequence spread spectrum signaling, IRDA-based infrared signaling, and OFDM signaling, however there is no teaching of how these wireless RF signal formats may be used by a POSITA to facilitate communication of the claimed “wireless communication signals”.

53. The ’633 Patent describes how each category of disclosed sensors (light sensor, sound sensor, or vibration sensor) can distinguish between different events when it describes “autonomous device 350 may include vibration sensor 352

to determine when cellular phone 300 vibrates”, and also describes “light sensor 353 may be included in autonomous device 350 . . . autonomous device 350 may be attached over either display 398 or light-emitting device 397 in order to determine when an alert occurs. Control circuitry may similarly be included to determine when such an event occurs and may be utilized to distinguish different events (e.g., when a cellular phone vibrates in different manners or emits light in different manners depending on the type of alert). Other types of autonomous sensors may also be utilized. For example, sound sensor 354 may be included to determine when an alert occurs”. *Id.*, 5:11-39.

54. Thus, according to the ’633 Patent, not only can different sensors determine different events, but an individual sensor can itself determine different events. However, there is no disclosure in the specification or file history of the ’633 Patent that describes the function(s) and/or technique(s) that a POSITA would use to generate a wireless communication signal that is associated with one or more of any of the events described therein, and for a remote notification device to receive the wireless communication signal and associate what was received with one or more of any of the events described therein.

55. Additionally, the ’633 Patent purportedly discloses and claims a process of alert sensing, routing, and notifications systems depicted in Figure 5.

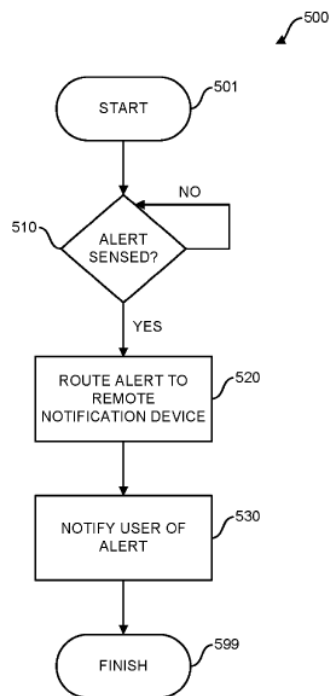


FIG. 5

56. The '633 patent includes 39 claims, one of which is an independent claim and 38 of which are dependent claims. Claim 1 recites:

[pre] A watch for use with a mobile telephonic device that provides notification of an incoming call, said watch comprising:

[a] a watch band; a second watch band; a buckle, wherein said buckle is coupled to said second watch band; and

[b] a device operable to receive first wireless communication signals associated with a first event and second wireless communication signals associated with a second event from said mobile telephonic device, wherein said first event and second event are different,

[c] said device includes a battery,

[d] said device includes motion sensing operable to distinguish between a plurality of different types of motion,
[e] said device is operable to provide first user-perceivable notification signals that are dependent upon said received first communication signals, and
[f] said device is operable to provide second user perceivable notification signals that are dependent upon said second communication signals.

57. I address each element of each claim below, however, I note that some dependent claims recite physical aspects of the watch, e.g., claim 2 recites an amplifier; claim 4 a display; and claim 5 a vibrator. Other dependent claims recite the relationship between a particular notification and an event, e.g., claim 10 recites a user-perceivable signal indicative of an incoming call; claim 11 a calendar notification; and claim 12 a reminder. And many of the dependent claims merely recite different combinations of these event notification elements as shown in the following table:

Element	10	11	12	13	14	15	16	17	19	20	29	30	31	32	33	34
Incoming Call	X				X	X	X	X			X	X	X	X	X	X
Calendar		X			X											
Reminder			X			X		X			X	X	X			
Missed Call				X			X				X			X	X	
Voice Message									X			X		X		X
Text Message										X			X		X	X
Third Event								X								

V. Claim Construction

58. I have been informed and understand that in an *inter partes* review claim terms are construed according to their ordinary and customary meaning as understood by one of ordinary skill in the art in view of the specification and the prosecution history of the patent.

59. In my opinion the claims of the '633 Patent use terms that have ordinary and customary meanings in the art and do not use these terms inconsistently with those ordinary and customary meanings. Therefore, it is my opinion that no terms need explicit construction.

VI. Level of Skill in the Art

60. I am informed and understand that a person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the alleged invention. I am informed and understand that factors that may be considered in determining the level of ordinary skill in the art may include: (A) the type of problems encountered in the art; (B) prior art solutions to those problems; (C) the rapidity with which innovations are made; (D) the sophistication of the technology; and (E) the educational level of active workers in the field.

61. Upon consideration, in my opinion, a person of ordinary skill in the art is someone with at least a Bachelor of Science degree in computer science,

computer engineering, electrical engineering or a similar degree with one or two years of experience with operating system and application software in mobile devices, such as cell phones, personal digital assistants, and smart watches.

62. Lack of work experience could have been remedied by additional education, and vice versa. Such academic and industry experience would be necessary to appreciate what was obvious and/or anticipated in the industry and what a POSITA would have thought and understood at the time.

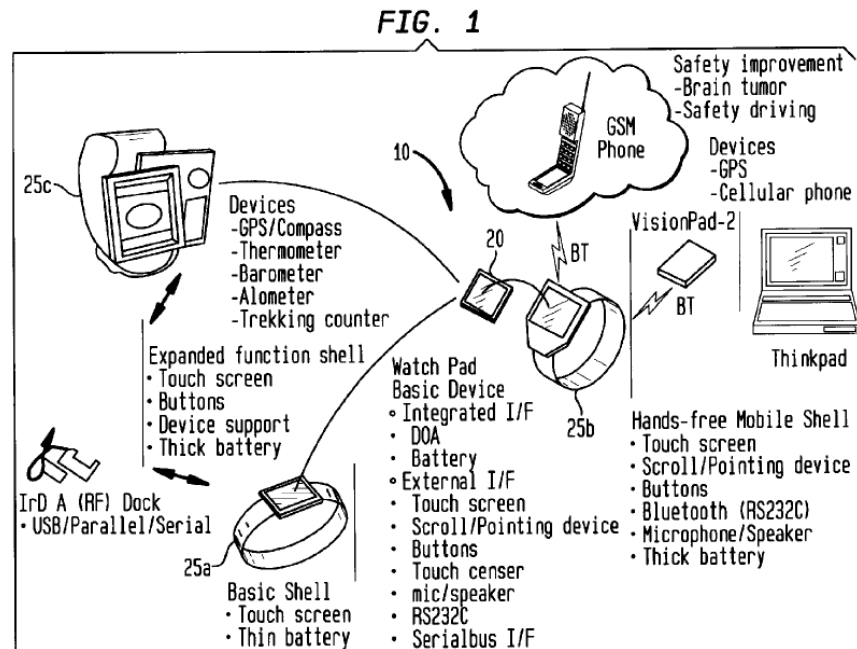
63. As of the relevant time frame for the '633 Patent, I possessed at least such experience and knowledge of a POSITA; hence, I am qualified to opine on the '633 Patent.

VII. Prior Art

A. The '117 Patent to Narayanaswami, et al. (Ex. 1005)

64. U.S. Patent No. US 6,477,117 ('117 Patent), entitled "Alarm Interface for a Smart Watch," was filed on June 30, 2000 and issued November 5, 2002. Ex. 1005. I understand that the '117 Patent is prior art to the '633 Patent and was not considered by the Examiner during prosecution of the '633 Patent.

65. The '117 Patent discloses a remote notification device, for example, a smart watch) that is able to wirelessly communicate with a cell phone or other electronic device.



Ex. 1005, Fig. 1.

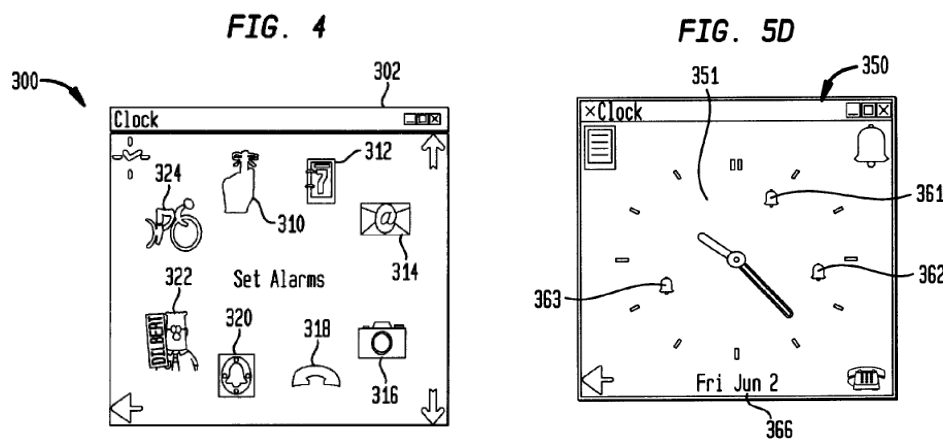
66. The '117 Patent further discloses that “the system looks like a regular watch but is capable of receiving information from adjunct devices such as a PC, a mobile computer, other pervasive devices being carried by the user and directly from a network via a wireless communications mechanism.” Ex. 1005, 3:29-33. The communication between the watch and the mobile device can be bi-directional: “application software enables communication between the other device and the Wrist Watch by receiving/displaying the data and transmitting back information sent from the Wrist Watch.” Ex. 1005, 7:67-8:3. For example, “caller Id information may be displayed on the Wrist Watch display 5 when the cell phone that belongs to that person rings.” Ex. 1005, 8:3-5.

67. In particular, the '117 Patent teaches the implementation of IrDA and Bluetooth wireless communication protocols for sending and receiving wireless communication signals. “IrDA system driver 214, RF-Modem subsystem driver 216, Bluetooth system driver 218”. *Id.*, 6:53-55. A POSITA would understand that these drivers could implement and/or support the implementation of the 3 wireless communication protocols briefly mentioned in the '633 Patent specification in connection with one of its embodiments. Further, Narayanaswami describes hardware circuitry such as “communications subsystems [that] include circuitry for supporting BlueTooth 81 or like small-factor, low-cost radio solution circuitry, e.g., an RF-modem 76, and may include other low power radio . . . the auxiliary communication card 80 implements the Bluetooth industry standard for Radio Frequency (RF) communication, however, it is understood that other standards such as IEEE 802.11 or other RF protocols may be implemented as well”. *Id.*, 4:60-5:1. As an example, Narayanaswami describes a wireless communication signal generated using a Bluetooth communication protocol that is associated with a silencing event as “a wireless Bluetooth beacon that periodically broadcasts information asking devices to be silent”, where “presumably, the beacon may transmit every minute asking the devices to be quiet for the next five minutes”. *Id.*, 12:45-47, 12:56-58.

68. The '117 Patent also discusses that “additional sensors may be

attached to the Wrist Watch device over an interface. Examples may include additional tilt and motion (velocity, direction, speed) sensors.” Ex. 1005, 6:15-19.

69. The watch face displays time but can also display icons that a user can select by touching in order to launch one of the many applications available on the watch.



Ex. 1005, Figs. 4,5.

70. “FIG. 4 illustrates an example system display 300 providing a main menu 302 comprising selectable icons for launching the following PIM applications: an icon 310 for launching an application directed to displaying/maintaining “to do” lists, ...calendars and appointments, ...e-mail messages, ...phone lists, [and]...setting of time and alarms....” Ex. 1005, 7:51-61.

FIG. 5(d) illustrates the resulting Wrist Watch display 350 showing an elliptical watch face 351 indicating the current time with the provision of an alarm indicating icon 361 provided at the scheduled alarm time....” Ex. 1005, 8:62-65.

B. The '478 Publication to Fujisawa, et al. (Ex. 1006)

71. U.S. Patent Publication No. US 2002/0115478 ('478 Publication), entitled, "Mobile Telephone and Radio Communication Device Cooperatively Processing Incoming Call," was filed as a PCT application on June 21, 2001 and published on August 22, 2002. I understand that the '478 Publication is prior art to the '633 Patent and while it appears on the face of the '633 patent was not substantively considered by the Examiner during prosecution of the '633 Patent, e.g., no rejections were based on the '478 Publication.

72. The '478 Publication discloses a remote watch (watch-shaped device) able to wirelessly communicate with a cell phone and notify a user of incoming calls. Ex. 1006, Abstract. For example, "[w]hen there is an incoming call to a mobile telephone, it sends an incoming call notification signal to a watch-shaped information processing device. When the watch-shaped information processing device receives the incoming call notification signal, it notifies the user of the incoming call." *Id.* Abstract.

73. Additionally, "[t]he watch-shaped information processing device 12 performs bidirectional radio communication with the mobile telephone 11." Ex. 1006, ¶ [0128]. In particular, the '478 Publication teaches the implementation of a wireless communication protocol for sending and receiving wireless communication signals. "The local and bidirectional communication may be a

Bluetooth communication” and “the bidirectional radio communication may be radio communication may be based on the Bluetooth technique and signal received periodically from the radio communication device may be an inquiry signal that slave unit receives from the master unit or an inquiry response signal that the master unit receives from the slave unit”. *Id.*, [0007], [0079]. “As shown in FIG. 7, a Bluetooth module 42 performs bidirectional communication with the watch-shaped information processing device 12A via an antenna 41 for Bluetooth”. *Id.*, [0164]. “An RF unit 54 of the Bluetooth module 42 perform high frequency signal processing such as amplifying high frequency signal and performs bidirectional communication with the watch-shaped information processing device 12A. A baseband processing unit 55 modulates/demodulates baseband signals based on Bluetooth technique”. *Id.*, [0172-0173].

74. These wireless communication signals are transmitted and received based on software instructions. “The Bluetooth module 42 with the above configuration transmits, based on instructions from the microprocessor 43, to the watch-shaped information processing device 12A control data such as incoming call notification signal that indicates there is an incoming signal”. *Id.*, [0177]. “Also, the Bluetooth module 42 receives various control data and voice data that are sent from the watch-shaped information processing device 12A, and outputs the received data to the microprocessor 43 and the W-CDMA base band

processing unit 48 via a bus 53”. *Id.*, [0177].

75. The watch can perform a variety of functions cooperatively with the wireless phone, including call answering, recording, playback of voicemail messages, and email, by communicating such data across ACL or SCO links as appropriate:

FIG. 18

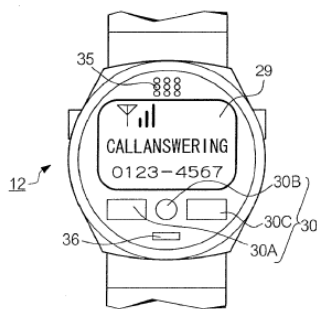


FIG. 19

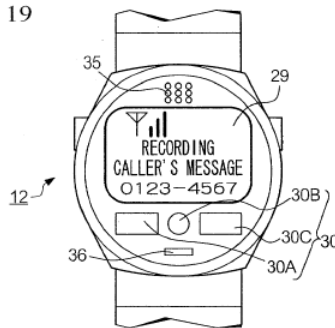


FIG. 28

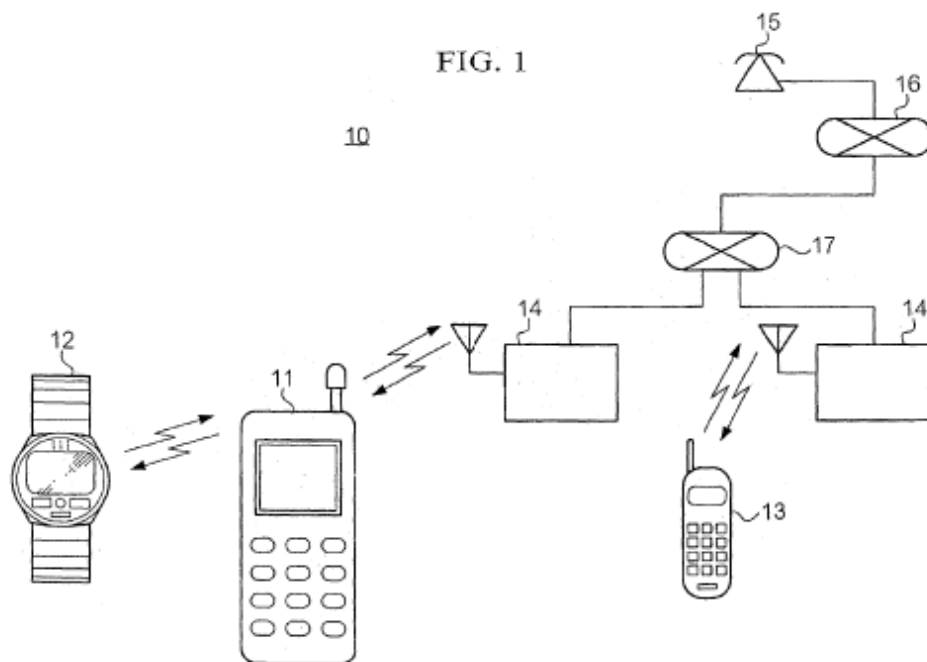


Ex. 1006, Figs. 18, 19, 20. “The watch-shaped information processing device 12A of the second embodiment uses the ACL link to exchange asynchronous data that does not require real time processing with the mobile telephone 11A.” *Id.*, [0189]. “The asynchronous data here can be control data used for various instructions and controls among the watch-shaped information processing device 12A and the mobile telephone 11A.” *Id.* “[T]he SCO link is usually used for real-time communication.” *Id.*, [0193]. “The SCO link is a synchronous communication link defined in the Bluetooth technical specification” and “usually used for real-time communication.” *Id.*, [0192].

76. The '478 Publication further discloses various notification signals to

notify a user of an incoming call, including “the electronic sound unit 26 to produce a buzzer sound or an electronic sound, the vibrator 27 to produce a vibration, or the light emitting unit 28 to blink light emitting device such as an LED.” Ex. 1006, ¶ [0156].

77. Finally, the '478 Publication discloses a remote notification device, the watch, that has the ability to communicate with other users in a mobile telephone system:



Ex. 1006, Fig. 1.

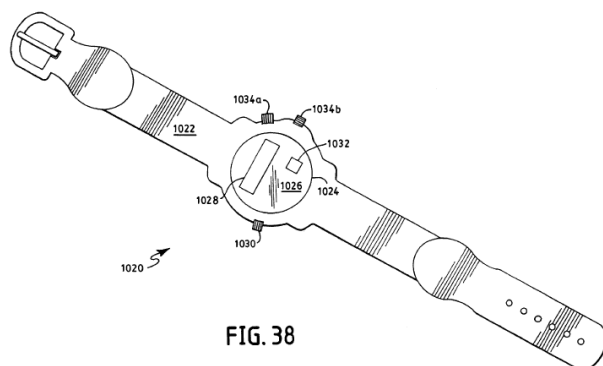
C. U.S. Patent No. U.S. 6,539,336 to Vock, et al. (Ex. 1007)

78. U.S. Patent No. US 6,539,336 ('336 Patent or “Vock”), entitled

“Sport Monitoring System for Determining Airtime, Speek, Power Absorbed and Other Factors Such as Drop Distance,” was filed on June 1, 1998 and issued on March 25, 2003. I understand that the ’336 Patent is prior art to the ’633 Patent and was not considered by the Examiner during prosecution of the ’633 Patent.

79. The ’336 Patent discloses a watch that is able to sense, convert, and display various measures of motion or forces while a user is participating in athletic activity or gaming. Ex. 1007, Abstract. For example, the user might wear the watch while snow skiing and be able to monitor various forces during a run down the mountain.

80. FIG. 38 shows a “shock” or “G” or power digital watch 1020 constructed according to the invention.” Ex. 1007, 44:26-27.



Ex. 1007, Fig. 38.

81. The watch includes various sensors and a display and, “[a]s in normal watches, a band 1022 secures the watch 1020 on a user’s wrist so that the

watch face 1024 can be viewed.” Ex. 1007, 44:27-29. “The watch 1020 also holds a power sensing unit 1032....” *Id.*, 44:33-34. “The power sensing unit [] provides a measure of the intensity or how ‘hard’ the user played during a particular activity.” *Id.*, 6:15-17. The power sensing unit may include, for example, one or more microphones or accelerometers. *Id.*, 44:55-56. The watch may also include an altimeter to provide a “dual drop distance and-power watch embodiment.” *Id.*, 44:66-45:5.

82. Vock discloses a number of sensors that can measure different performance data, such as “airtime”, “speed”, “power”, or “drop distance”, as different events that may be transmitted to another device. “In one aspect of the invention, performance data is sensed through one or more sensors connected with the sensing unit”. *Id.*, 6:4-6. “The measurement of air, speed, power, and drop distance, in accord with the invention, are preferably made through one or more sensors located with the vehicle, e.g., on the snowboard or ski, upon which the person rides”. *Id.*, 18:6-9. “For example, one speed sensing unit provides both ‘air’ time and speed to the user of the device.” *Id.*, 8:55-57. “One sensing unit of the invention measures ‘air’ time, i.e. the time a person such as a snowboarder or skier is off the ground during a jump.” *Id.*, 6:20-22. “In other aspects, the airtime data of above paragraphs (1)-(6) can be shown on a display connected with the sensing unit, or they can be transmitted to an associated data

unit, or to a base station”. *Id.*, 8:11-14. “One sensing unit of the invention measures ‘speed.’ . . . The speed sensing unit either connects to a data unit; or can include a low-powered liquid crystal display (LCD) to communicate the ‘speed’ to the user”. *Id.*, 8:16-21. “One sensing unit of the invention measures ‘power’, a measure of the amount of energy absorbed or experienced by a user during a period such as a day”. *Id.*, 10:13-15. “A digital memory stores power data; or alternatively, the power sensing unit transmits power performance data to a data unit”. *Id.*, 10:32-34. “One sensing unit of the invention measures ‘drop distance’ . . . This drop distance sensing unit either connects to a data unit; or can include a low-powered liquid crystal display (LCD) to communicate the ‘drop distance’ to the user”. *Id.*, 11:52-57.

83. In addition, each individual sensor can itself measure different facets of the performance data it measures, that may also be considered by a POSITA as different events that may be transmitted to another device. Facets of “airtime” include “total and peak air time for the day”, “Total dead time for the day”, “air time for any particular jump”, etc. *Id.*, 6:37-8:10. Facets of “speed” include “average and peak speed for the day”, “speed for any particular period or run”, “successive records of speed”, etc. *Id.*, 8:63-10:6. Facets of “power” include “peak and average power for the day”, “successive power records”, “rankings of records”, etc. *Id.*, 10:41-11:50. Facets of “drop distance” include “total and peak

drop distance for the day”, “drop distance for any particular jump”, “successive jump records of drop distance”, etc. *Id.*, 11:65-13:19.

84. Vock describes using an RF or infrared-based wireless communication protocol to communicate wireless communications signals to/from a sensing unit and a data unit as a method for transmitting performance data. “In one preferred aspect, the performance data is transmitted via radiofrequencies (or other data transfer technique, including infrared light or inductively-coupled electronics) from the sensing unit to a data unit which is ergonomically compatible with the user”. *Id.*, 4:54-56. “Data can also be transmitted from the sensing unit to a base station, as discussed above. Those skilled in the art should appreciate that other data transfer techniques can be used instead of the RF, including IR data transfer between the units.” *Id.*, 18:21-25. “A controller subsystem 1110 connects to the strip 1108 to process transducer data; and that processed data is transferred, for example, to the watch 1112 worn by the user by way of infrared energy signals from a diode/detector pair 11114a/b or other similar optical data transfer devices. The units 1100a and 1100b preferably permit communication between units, either direction”. *Id.*, 46:23-30.

D. Nokia 8890 User Guide (Ex. 1008)

85. The Nokia 8890 User Guide (“Nokia User Guide”) is a user guide for a Nokia mobile phone that was available in 2000. Ex. 1008, 3. I understand that

the Nokia User Guide is prior art to the '633 Patent and was not considered during the prosecution of the '633 Patent.

86. The phone described in the Nokia User Guide describes features that were common to mobile phones in that time frame. For example, the Nokia User Guide describes placing and receiving calls. *Id.*, 16. The Nokia User Guide also describes that the mobile phone supported sending and receiving text messages. *Id.*, 74. All these features and more were very common in phones of this era.

87. The mobile phone could also perform functions that were previously been common in a personal digital assistant, including allowing a user to maintain a calendar and provide alerts based on the calendar. *See, id.*, 87 (“The calendar keeps track of reminders, calls you need to make, meetings, and birthdays. It can even sound an alarm when it’s time for you to make a call or go to a meeting.”) By the times of the alleged invention, however, such features were routinely included in mobile phones.

88. The phone described in the Nokia User Guide may also be configured to receive wireless communication signals over an IrDA wireless communication protocol. “You can set up your phone to receive data through its infrared (IR) port. To use an IR connection, the device with which you want to establish a connection must be IrDA compliant”. Nokia User Guide, p. 96.

VIII. Motivation to Combine the Prior Art

A. Motivation to Combine Narayanaswami and Vock and Nokia User Guide

89. First, it is my opinion that a POSITA would have been motivated to combine the teachings of the Narayanaswami and Vock patents. First, the references are similar since they each describe smart watches with microprocessors, memories, and displays as well as application software. *See, e.g.,* Ex. 1006, ¶ [0005]; Ex. 1007, 40:38-45. They are each a mobile computing device that can be customized with application software.

90. By 2002, it was well known to look to various mobile devices to identify a variety of features that users desired, and to incorporate them into a similar mobile device, such as a smart watch. Both Narayanaswami and Vock describe a smart watch. Narayanaswami describes that a variety of applications can be provided on the watch and that the watch can interface with other devices, such as mobile phones and computers. A POSITA would have understood that the watch of Narayanaswami could be modified by adding sensors and modifying the software. A POSITA would have looked to other devices to identify features that would increase the desirability of the smart watch. One such device is the Vock watch, and in particular, the sensors and associated software that made possible the ability of the Vock smart watch to store and display the performance data

described in Vock. Doing so would have increased the capabilities of the Narayanaswami watch. For example, the Narayanaswami watch would be capable of sensing additional events and types of events and providing additional types of notifications based on those events and types of events to the user of the watch. Doing so would increase the utility and thus the value of the smart watch to the user. Further, Narayanaswami and Vock each describes a smart watch, that is, a watch with a processor, sensors, an operating system, and application software. Such architectures were well known at the time of the alleged invention, and a POSITA would have expected to be able to successfully incorporate the sensors and two-piece watch band of Vock into the smart watch of Narayanaswami and modify the application software of Narayanaswami in order to communicate with the sensors and provide notifications based on the sensors. No additional processor or memory would be necessary as the sensors described in Vock were already designed to be installed in the housing of a smart watch. Thus, a POSITA would be capable of incorporating the sensors into the Narayanaswami watch and adapting the software to process information from the sensors.

91. Narayanaswami provides a figure showing parts of the watch band but does not disclose the precise construction of the watch band. However, it had been well known to a POSITA that a watch band can be a two-piece watch band joined together at a buckle. Such a configuration allows the watch band to fit a variety of

users of different sizes, i.e., some wrists are larger than others, and it is beneficial to have an adjustable watch band that fits multiple sizes of potential users. Thus, a POSITA would have been motivated to incorporate the watch band and buckle of Vock with the smart watch of Narayanaswami. Further, since both smart watches include a lug or pin on each side of the face, a POSITA would have expected to be able to successfully incorporate the Vock watch band onto the watch face of Narayanaswami.

92. It is also my opinion that a POSITA would have been motivated to incorporate the common features of a Nokia mobile phone available in 2002, such as described in the Nokia 8890 User Guide, with the smart watches described in Narayanaswami and Vock. In 2002, Nokia was the world's largest mobile phone maker. See, e.g., Ex. 1010. The features described in the Nokia User Guide were features commonly available on mobile phones of the time. Since the features were common and Nokia was well known as a brand that makes mobile phones, a POSITA would have been aware of these features.

93. Further, Narayanaswami, Vock, and the Nokia User Guide each describe mobile devices that each include microprocessors, displays, and software. The smart watches of Narayanaswami and Vock include microprocessors and displays that allow the user to access information from the watch that is either stored on the watch or that originates at another device in communication with the

watch. The Nokia User Guide discloses a mobile phone with a processor, display and applications, such as a calendar, text messaging, a clock, and voice messaging. Ex. 1006, ¶ [0005]; Ex. 1007, 40:38-45; Ex. 1009, 64. Narayanaswami and Vock each describes features in a smart watch that were commonly available in a mobile phone, such as the Nokia mobile phone described in the Nokia User Guide. A POSITA would have found it obvious to incorporate additional features of the Nokia mobile phone into the watches since such features were commonly available in mobile phones and such features would provide additional functionality to the watches. In other words, users had grown accustomed to having the breadth of features described in the Nokia user's guide available to them in mobile devices. Thus, users would have preferred a similarly broad set of features be incorporated into a smart watch. Further, smart watches and mobile phones such as those described in these references included programming environments for implementing such features. Thus, a POSITA would have expected to be able to successfully incorporate the various features of the Nokia User Guide into Narayanaswami and/or Vock by modifying the software of the Narayanaswami or the Vock smart watch.

B. Motivation to Combine Fujisawa and Vock and Nokia User Guide

94. In my opinion, one of skill in the art would also have been motivated to combine the smart watches described in Fujisawa and Vock for many of the

same reasons I describe above in relation to Narayanaswami and Vock. First, the references are analogous because both describe smart watches with microprocessors, memory, and displays and are capable of executing software. They also allow the user to access information directly from the watch rather than from a separate mobile device. Ex. 1006, ¶ [0005]; Ex. 1007, 40:38-45.

95. A POSITA at the time of the alleged invention would have understood that the Fujisawa smart watch provides a convenient mechanism to access a variety of data without having to access a separate device. Also, a POSITA would recognize that adding additional features, such as the ability to capture and display the performance data described in Vock would be an advantageous improvement. Further, in 2002, it was well known to combine multiple features, including different types of functionalities, into mobile devices. Thus, one of skill in the art would be motivated to incorporate the motion sensors described in Vock, e.g., microphones, accelerometers, or altimeters, and the corresponding software from the Vock smart watch into the Fujisawa smart watch in order to appeal to, for instance, athletes desiring to monitor performance in a convenient manner. And since both watches include similar hardware configurations, a POSITA would have expected to be successful in making the combination the Fujisawa smart watch could be programmed to accept and process data from the Vock sensors.

96. It is also my opinion that a POSITA would have been motivated to

incorporate the features of a Nokia mobile phone, as described in the Nokia 8890 User Guide, with the smart watches described in Fujisawa and Vock for the same reasons I set out above in relation to the combination of Narayanaswami, Vock, and the Nokia User Guide.

97. Further, the smart watches and mobile phones included programming environments for including such features; one of skill in the art would have had the expectation of successfully incorporating any of the various features of the Nokia User Guide into Fujisawa and/or Vock by simply modifying the software in the Fujisawa or Vock smart watches to incorporate the additional features of the Nokia mobile phone.

IX. Analysis and Identification of how the Claims are Unpatentable

A. Ground 1: Claims 1-18, 22, 27, 29, and 35 are unpatentable as obvious over Narayanaswami in view of Vock

98. The Narayanaswami patent discloses a smart watch as recited in claim 1, including providing notifications and having motion sensing. It also discloses most of the elements recited in the various dependent claims. Narayanaswami does not include the two-piece band and buckle, but Vock does. It is my opinion that the combination of Narayanaswami and Vock renders claims 1-18, 22, 27, 29, and 35 obvious.

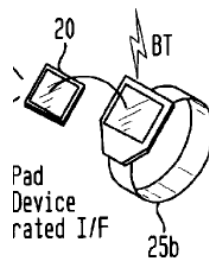
1. Independent claim 1

- a. *Claim 1 Preamble – A watch for use with a mobile telephonic device that provides notification of an incoming call, said watch comprising:***

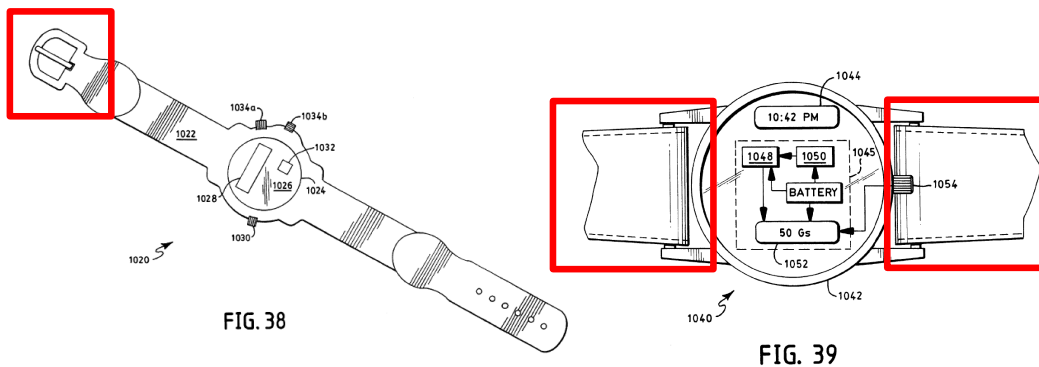
99. I understand that the preamble is not necessarily limiting. In this case, whether or not it is limiting does not affect my opinion as Narayanaswami discloses the preamble. Narayanaswami discloses “[a] wearable mobile computing device/appliance (a wrist watch) with a high resolution display that is capable of wirelessly accessing information from a network and a variety of other devices. The mobile computing device/appliance includes a user interface that is used to efficiently interact with alarms and notifications on the watch.” Ex. 1005, Abstract; For example, “caller Id information may be displayed on the Wrist Watch display 5 when the cell phone that belongs to that person rings.” Ex. 1005, 8:3-5. Thus, Narayanaswami discloses a watch for use with a mobile device that provides notification of an incoming call by providing, for example Caller ID information.

- b. *Claim 1a – a watch band; a second watch band; a buckle, wherein said buckle is coupled to said second watch band; and***

100. Narayanaswami in combination with Vock discloses element 1a, including a watch with a watch band. Narayanaswami discloses a watch band but does not disclose the specific elements of the band that are recited in the claims:



Ex. 1005, Fig. 2. However, Vock discloses these elements:



Ex. 1007, Figs. 38, 39. Figure 38 (annotated, left) discloses a Vock buckle that affixes two bands to one another. Figure 39 (annotated, right) demonstrates that the smart watch of Vock includes two bands—one connected to the lug (or pin) on the left, and one to the right. And as discussed in Section VIII.A, it would have been obvious to incorporate the two-band strap with a buckle disclosed in Vock with the smart watch of Narayanaswami, at least because the Vock buckle allows the Narayanaswami watch to be adjusted in the way that watches have utilized for decades.

- c. ***Claim 1b – a device operable to receive first wireless communication signals associated with a first event and second wireless communication signals associated with***

***a second event from said mobile telephonic device,
wherein said first event and second event are different,***

101. Narayanaswami describes several wireless communication protocol drivers that a POSITA may use, such as “IrDA system driver 214, RF-Modem subsystem driver 216, Bluetooth system driver 218”. *Id.*, 6:53-55. A POSITA would understand that these drivers implement and/or support the implementation of the 3 wireless communication protocols briefly mentioned in the ’633 Patent specification in connection with one of its embodiments. Further, Narayanaswami describes hardware circuitry such as “communications subsystems [that] include circuitry for supporting BlueTooth 81 or like small-factor, low-cost radio solution circuitry, e.g., an RF-modem 76, and may include other low power radio . . . the auxiliary communication card 80 implements the Bluetooth industry standard for Radio Frequency (RF) communication, however, it is understood that other standards such as IEEE 802.11 or other RF protocols may be implemented as well”. 4:60-5:1. As an example, Narayanaswami describes a wireless communication signal when using a Bluetooth communication protocol as “a wireless Bluetooth beacon that periodically broadcasts information asking devices to be silent”, where “presumably, the beacon may transmit every minute asking the devices to be quiet for the next five minutes”. *Id.*, 12:45-47, 12:56-58.

102. Narayanaswami discloses element 1b. Narayanaswami describes a

first event, an incoming telephone call that causes a cell phone to ring: “As a further example, caller Id information may be displayed on the Wrist Watch display when the cell phone that belongs to that person rings.” Ex. 1005, 8:3-5.

Narayanaswami also discloses a second event, which is a second incoming call that causes a Wrist Watch to vibrate during “quiet time”. “Another feature supported by the Wrist Watch timekeeping/alarm functionality is the concept of quiet time which is a user configurable time interval during which no audible alarms will ring”. *Id.*, 11:23-26. “In another embodiment, the Wrist Watch device may [be] automatically have a quiet mode set, e.g., by provision of a wireless Bluetooth beacon that periodically broadcasts information asking devices to be silent. For instance, . . . a wireless transmitter may produce a beacon for turning off all sounds and/or switch the Wrist Watch device to a silent alert (vibrate) mode”. *Id.*, 12:44-51. Another example of a “second event” is “those enabling the receipt of excerpts of personalized data, such as traffic information, weather reports, school closings, stock reports, sports scores, etc. from the world wide web. These excerpts may be received as notifications or alarms on the Wrist Watch system 10”. Inter-device interactions software applications are included to permit the watch display to become the display for another device”. *Id.*, 7:58-66. This is described in further detail below in relation to a “third event.” While the claim requires that the two events must be different, in my opinion a POSITA would not interpret the claim as

requiring two different events that are each of a different type. Thus, Narayanaswami discloses receiving first and second calls which constitute first and second events, i.e., receiving a first call (first event) and then a second call (second event).

103. Even if the claim is interpreted as requiring two different events where each event is a different type, Narayanaswami still discloses this element. “For instance, an alarm actually may come from some other source, for example, the user’s PC which maintains a list of appointments for the user with one of the appointments having an associated alarm indicating what the appointment was. Then, that information may be input to the Wrist Watch, such that the watch may subsequently activate the alarm at the programmed time, and accordingly indicate the associated text.” *Id.*, 9:23-31. The “alarm” is the notification of an event, the “appointment.”

104. While Narayanaswami describes the transfer of information as being “input to the Wrist Watch,” it is my opinion that a POSITA would recognize that Narayanaswami is describing the wireless transmission of information from the PC to the watch. Alternatively, transmitting the calendar information to the smart watch would have been obvious. The smart watch is in communication with the mobile device. And the calendar information is merely data. A POSITA could have used the described transmission mechanism to transfer calendar information

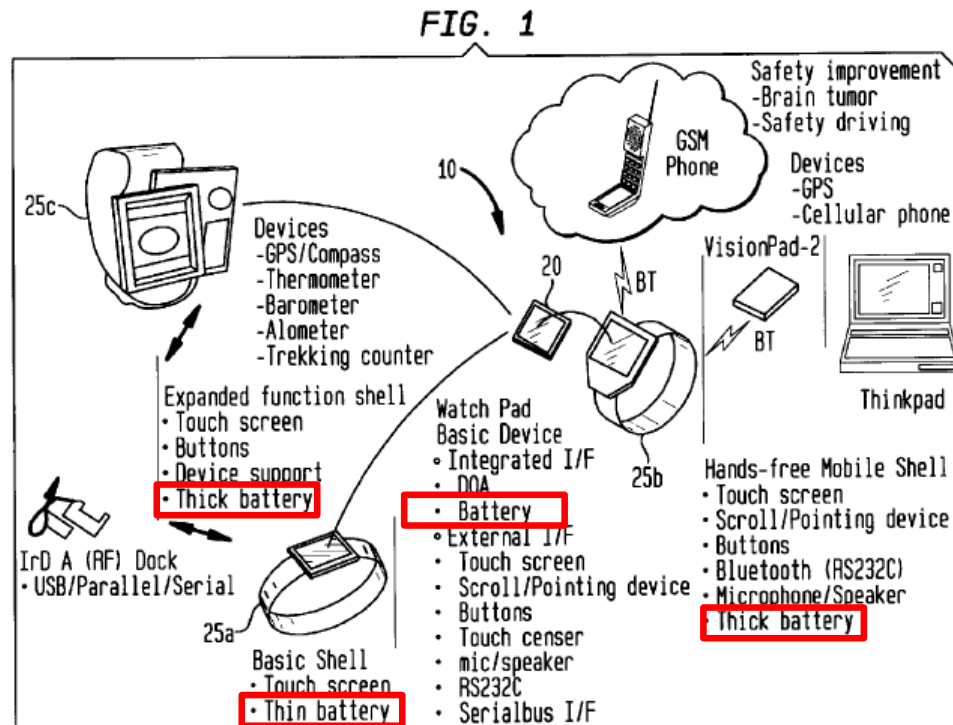
between the mobile device and the smart watch; it is merely a design choice to do so. The “wireless communication signals [are] associated with” an event and thus receiving either the notification of the appointment or the appointment itself would satisfy this claim limitation.

105. Further, while Narayanaswami describes the appointment as originating at a user’s PC, Narayanaswami also describes that a mobile device, the watch itself, can execute a calendar application. Similarly, a mobile phone would be capable of executing a calendar application. Thus, it would have been obvious to receive the calendar information from the wireless phone as described above. For example, in describing the communications interface, the Ex. 1005 notes, “The synchronization manager 250 is provided to synchronize data between the Wrist Watch and the other devices. Particularly, it receives the data from the communication channel and operates in conjunction with the right application to decode the sent data and update the data for the application receiving the data. An example of this would be an update to a calendar event.” Ex. 1005, 7:3-9. Thus, Narayanaswami discloses two different events, either of the same or different type, received by the watch in wireless communications signals, and providing a notification of each of the two events.

d. Claim 1c – said device includes a battery,

106. Narayanaswami discloses element 1c. Narayanaswami discloses that

the smart watch includes a battery, either “thick” or “thin”:



Ex. 1005, Fig. 1 (annotated).

- e. *Claim 1d – said device includes motion sensing operable to distinguish between a plurality of different types of motion,*

107. Narayanaswami discloses element 1d, “motion sensing operable to distinguish between a plurality of different types of motion.” “For example, the base card 20 may be implemented in ... an expanded function shell 25c, providing touch screen, buttons and support for various devices such as **GPS/compass, thermometer, barometer, altimeter, etc.**” Ex. 1005, 3:40-50. The GPS and altimeter sensors are both capable of sensing motion. “In a preferred embodiment, additional sensors may be attached to the Wrist Watch device over an interface.

Examples may include additional tilt and motion (velocity, direction, speed) sensors.” Ex. 1005, 6:15-19. Tilt is a type of motion sensed with sensors such as the ball-in-a-tube sensor disclosed in the ’633 patent (Ex. 1001, 5:13-15); sensing velocity is also motion sensing.

108. It would have been obvious to a POSITA to use motion sensors to distinguish between different types of motion, such as the vibration motion during “quiet time” and the velocity and direction motions using the GPS and altimeter sensors. Thus, Narayanaswami discloses motion sensing operable to distinguish between different types of motion.

f. *Claim 1e – said device is operable to provide first user-perceivable notification signals that are dependent upon said received first communication signals, and*

109. Narayanaswami discloses element 1e, noting that “caller Id information may be displayed on the Wrist Watch display when the cell phone that belongs to that person rings.” Ex. 1005, 8:3-5. The display of the caller Id information is a “user-perceivable notification signal” dependent on receiving the first communication signals, those associated with a call.

g. *Claim 1f – said device is operable to provide second user perceivable notification signals that are dependent upon said second communication signals.*

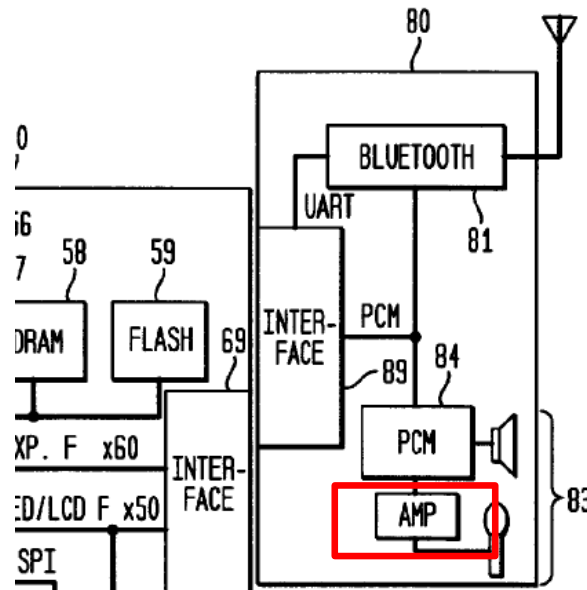
110. Narayanaswami discloses element 1f. First, receiving a second call and providing the corresponding notification of the call would satisfy this

limitation as described in relation to claim element 1b; the two calls are two events that are of the same type. Further, Narayanaswami also discloses providing a notification (user perceivable notification signals) of a second event dependent on second communication signals, “[f]or instance, an alarm actually may come from some other source, for example, the user’s PC which maintains a list of appointments for the user with one of the appointments having an associated alarm indicating what the appointment was. Then, that information may be input to the Wrist Watch, such that the watch may subsequently activate the alarm at the programmed time, and accordingly indicate the associated text.” Ex. 1005, 9:23-31. The alarm activated at the watch at the programmed time is a user-perceivable notification signal. And the notification is dependent on the second event, the appointment.

2. Dependent claim 2 – *The watch of claim 1, further comprising an amplifier.*

111. Narayanaswami discloses an amplifier in Figure 2, labeled as “amp.”

FIG. 2



Ex. 1005, Fig. 2 (annotated). The amp is part of “an accessory card, i.e., either card 75 or 80, in the expanded-shell Wrist Watch designs that support PCM audio” that “includes a speaker and a micro phone combination 77, 83 respectively.” Ex. 1005, 4:37-48;

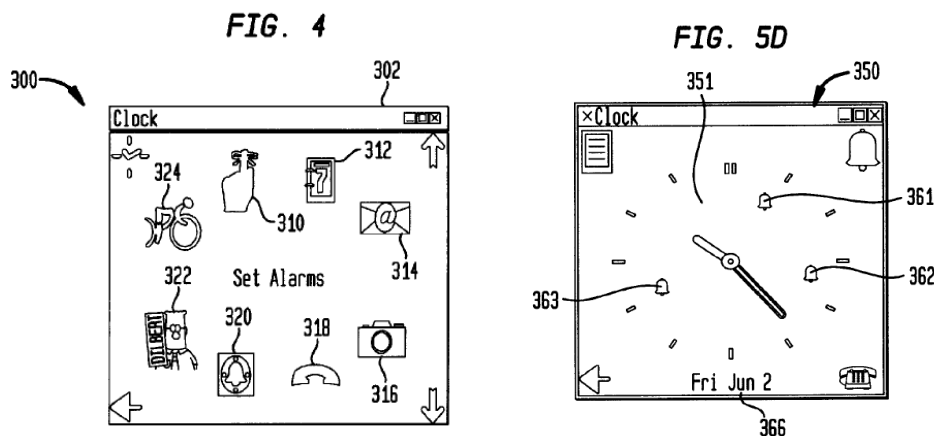
3. **Dependent claim 3 – *The watch of claim 1, wherein said user-perceivable notifications signals comprise audible notification signals.***

112. Narayanaswami discloses audible notification signals as recited in claim 3: “In the preferred embodiment, when an alarm is activated, an audible sound is generated.” Ex. 1005, 9:66-57;

4. **Dependent claim 4 – *The watch of claim 1, wherein said device further comprises a display.***

113. Narayanaswami discloses the display recited in claim 4, stating a

“device/appliance (a wrist watch) capable of wirelessly accessing information and equipped with an interactive user interface and *high resolution display* for providing a variety of desktop PC-like functions.” Ex. 1005, 2:13-16 (emphasis added);



Ex. 1005, Figs. 4, 50.

5. Dependent claim 5 – *The watch of claim 1, wherein said device further comprises a vibrator.*

114. Narayanaswami discloses the vibrator recited in claim 5, stating “the Wrist Watch time-keeping/alarm function may be provisioned with the ability to produce a silent alert such as a vibration...” Ex. 1005, 12:26-28. The vibration would be created by the claimed “vibrator.”

6. Dependent claim 6 – *The watch of claim 1, wherein said device further comprises a speaker.*

115. Narayanaswami discloses the speaker recited in claim 6.

Narayanaswami states the watch “includes a speaker and a micro phone

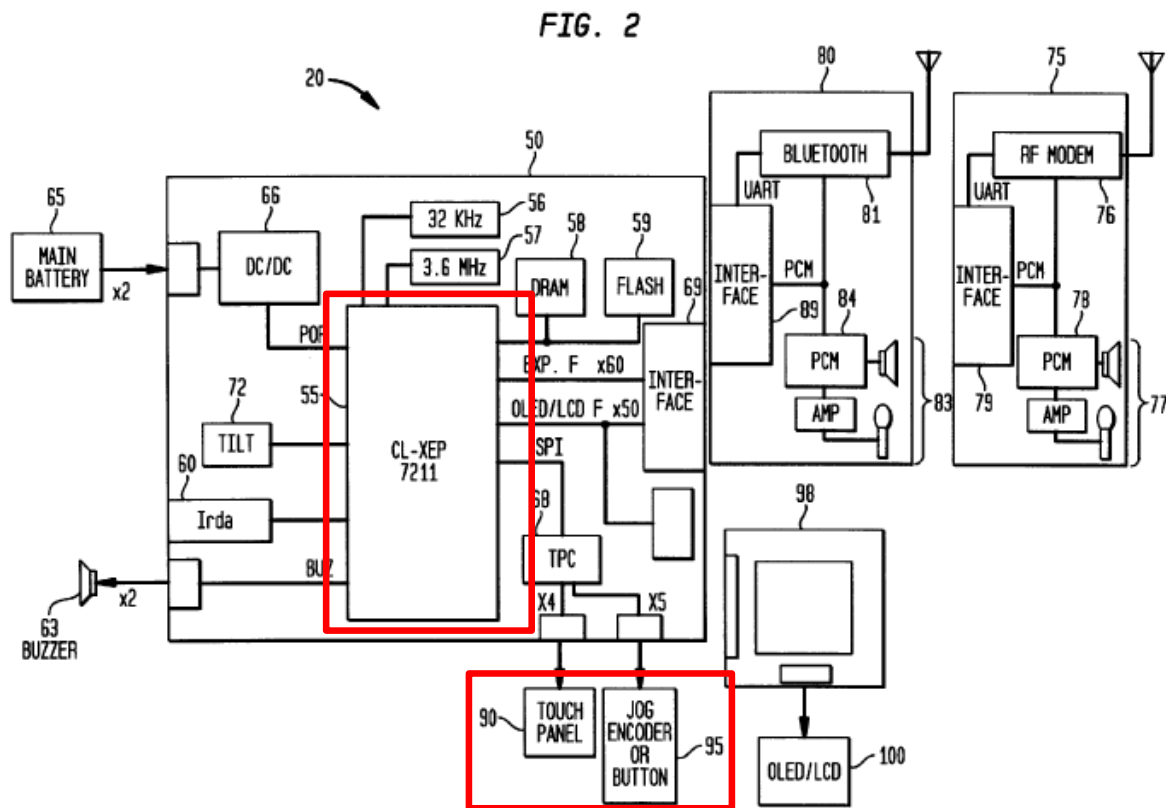
combination 77, 83 respectively.” Ex. 1005, 4:37-48.

7. Dependent claim 7 – *The watch of claim 1, wherein said device further comprises an LED.*

116. Narayanaswami discloses the LED of claim 7. “[A]n interface 69 is provided for a unit 98 housing a high resolution (VGA equivalent) emissive Organic Light Emitting Diode (OLED) high contrast display 100.” Ex. 1005, 6:5-8.

8. Dependent claim 8 – *The watch of claim 1, wherein said device further comprises control circuitry, an input device, and memory.*

117. Narayanaswami discloses the control circuitry, input device, and memory of claim 8. “FIG. 2 is a detailed block diagram illustrating the hardware architecture of the Wrist Watch system 10. As shown in FIG. 2, the base card 20 includes a first or main card 50 housing the core processing unit, I/O, and memory.” Ex. 1005, 3:51-54; Fig. 2 (below). “A user interface manager 255 is provided to process events received from user input devices such as the roller wheel (jog encoder) and touch panel for the appropriate applications.” Ex. 1005, 6:64-67. The control circuitry and memory are disclosed by the core processing unit and memory; the input device is disclosed by the roller wheel and touch panel.



9. **Dependent claim 9 – *The watch of claim 1, wherein said device further comprises a display, a speaker, a vibrator, control circuitry, an input device, and memory.***

118. See claims 4-8. Also, see above where we discuss the following:

Further, Narayanaswami describes hardware circuitry such as “communications subsystems [that] include circuitry for supporting Bluetooth 81 or like small-factor, low-cost radio solution circuitry, e.g., an RF-modem 76, and may include other low power radio . . . the auxiliary communication card 80 implements the Bluetooth industry standard for Radio Frequency (RF) communication, however, it is understood that other standards such as IEEE 802.11 or other RF protocols may

be implemented as well”. *Id.*, 4:60-5:1

10. Dependent claim 10 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of an incoming call.*

119. See claim 1b.

11. Dependent claim 11 – *The watch of claim 1, wherein said second user-perceivable signals are indicative of a calendar notification.*

120. See claim 1f, where I describe the calendar notification as an example of the second event. Also, “The synchronization manager 250 is provided to synchronize data between the Wrist Watch and the other devices. Particularly, it receives the data from the communication channel and operates in conjunction with the right application to decode the sent data and update the data for the application receiving the data. An example of this would be an update to a calendar event”. *Id.*, 7:3-9.

12. Dependent claim 12 – *The watch of claim 1, wherein said second user-perceivable signals are indicative of a reminder.*

121. See claim 1f. Narayanaswami also discloses a snooze function, which is an example of a reminder. For example, Narayanaswami discloses activating reminders after stopping an alarm (therefore user-perceivable signal is a second user-perceivable signal triggered after a first user-perceivable signal): “One feature in particular enabled by the present invention is the facility by which a user may

stop the alarm, select a snooze option where the user will receive subsequent *reminders* (i.e., the alarm to activate) after a predefined time interval” 8:28-32 (emphasis added). Further, a POSITA would understand that a reminder can be stored as a calendar entry, the notification of the occurrence of the calendar entry would be the reminder, and thus Narayanaswami discloses that the second event is indicative of a reminder. At the very least, these various disclosures would render obvious providing user-perceivable signals indicative of a reminder.

13. Dependent claim 13 – *The watch of claim 1, wherein said second user-perceivable signals are indicative of a missed call.*

122. Narayanaswami discloses providing a notification of a missed call as recited in claim 13. Narayanaswami discloses, “[i]f the user does not interact with the watch at all when the alarm is activated, this may mean either: 1) the user did not hear the alarm although the watch is on the wrist, or 2) the watch is not on the user’s wrist at all. The watch distinguishes these two cases by periodically monitoring the tilt sensor 72 (FIG. 2) on the watch. If the watch is on the user’s wrist, then the alarm will automatically revert to the snooze setting after a preset time interval.” Ex. 1005, 11:13-20. A POSITA would understand that Narayanaswami treats calls as an event that triggers a type of alert or alarm and that if the user does not respond to the call, then the watch will provide an alarm at a preset time after the call is missed. This alarm after the missed call satisfies the

recited claim element or at least renders it obvious. Narayanaswami discloses a notification of an incoming call and determining that a user did not hear an alarm, such as the alert associated with the incoming call. A POSITA would have combined these features, providing an alert that the call was missed.

14. Dependent claim 14 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of an incoming call and said second user-perceivable signals are indicative of a calendar notification.*

123. See claim 1 and 11. I described both an incoming call and a calendar notification.

15. Dependent claim 15 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of an incoming call and said second user-perceivable signals are indicative of a reminder.*

124. See claims 1 and 12.

16. Dependent claim 16 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of an incoming call and said second user-perceivable signals are indicative of a missed call.*

125. See claims 1 and 13.

17. Dependent claim 17 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a reminder, and said device is configured to receive third wireless communication signals associated with a third event.*

126. See claims 1 and claim 12. Further Narayanaswami discloses the “third event” associated with third wireless communication signals recited in claim

17. For instance, receiving a third call and providing a notification of the third call would satisfy claim 17 in the same way as I described the first and second events of claim 1. Further, Narayanaswami discloses additional types of events that trigger notifications: “Other applications may include those enabling the receipt of excerpts of personalized data, such as traffic information, weather reports, school closings, stock reports, sports scores, etc., from the world wide web. These excerpts may be received as notifications or alarms on the Wrist Watch system 10.” Ex. 1005, 7:58-63. Each of these excerpts are events associated with wireless communication signals. See, also, ¶¶103-105 above.

18. Dependent claim 18 – *The watch of claim 1, wherein at least one of said plurality of different types of motion is a human motion.*

127. See claims 1d and 13. In particular, the “the tilt sensor 72” that I address in relation to reminders monitors the motion of the user’s wrist to determine whether the user is wearing the watch. If the user tilts her wrist, which is a human motion, the tilt sensor senses the motion.

19. Dependent claim 22 – *The watch of claim 1, wherein said device is operable to send wireless communication signals to said mobile telephonic device.*

128. Narayanaswami discloses that the watch can also send wireless communication signals to the mobile phone as recited in claim 22. For example, Narayanaswami states, “[r]eferred to herein as the ‘Wrist Watch’ 10, the system

looks like a regular watch but is capable of receiving information from adjunct devices such as a PC, a mobile computer, other pervasive devices being carried by the user and directly from a network via a wireless communications mechanism.”

Ex. 1005, 3:28-33. “Thus, this application software enables communication between the other device and the Wrist Watch by receiving/displaying the data and ***transmitting back information sent from the Wrist Watch.***” Ex. 1005, 7:67-8:3 (emphasis added). Thus, Narayanaswami discloses wherein the device is operable to send wireless communication signals to the mobile phone. See also, ¶¶67, 84, 88, and 101.

- 20. Dependent claim 27 – *The watch of claim 1, wherein said device is operable to receive third wireless communication signals associated with a third event, wherein each of said first event, second event, and third event is different, and said device is operable to provide third user-perceivable notification signals that are dependent upon said third wireless communication signals.***

129. See claims 1 and 17. As noted above in relation to claims 1 and 17, Narayanaswami discloses providing notifications of events that are different, e.g., a series of three missed calls. Narayanaswami also discloses a variety of events that are of different types, e.g., a missed call and a reminder. And Narayanaswami discloses providing user-perceivable notification signals of each of the events as I have described throughout.

21. **Dependent claim 29 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a reminder, and said third user-perceivable signals are indicative of a missed call.***

130. See claims 12, 16 and 27.

22. **Dependent claim 35 – *The watch of claim 27, wherein said device is operable to send wireless communication signals to said mobile telephonic device.***

131. See claims 22 and 27.

B. Ground 2: Claims 19-21, 23-26, 28, 30-34, and 36-39 are unpatentable as obvious over Narayanaswami and Vock and further in view of Nokia 8890 User Guide

132. The combination of Narayanaswami and Vock discloses most of the elements of these dependent claims. However, some features that were commonly available in mobile phones of the time as evidenced by the Nokia 8890 User Guide are not disclosed in Narayanaswami or Vock. However, it is my opinion that the combination of Narayanaswami, Vock, and the Nokia 8890 User Guide renders claims 19-21, 23-26, 28, 30-34, and 36-39 obvious.


1. **Dependent claim 19 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of a voice message.***

133. Nokia User Guide discloses providing user-perceivable signals indicative of a voice message as recited in claim 19. “When you receive a voice message, your phone lets you know by beeping, displaying an icon on the screen,

or showing a text message.” Ex. 1008, 44. As described above in Section VIII.A, it would have been obvious to incorporate the voice message feature of the Nokia wireless phone into the smart watch of Narayanaswami. This is a common feature of mobile devices of the time, and it would have been obvious to incorporate this feature into the smart watch of Narayanaswami. Further, Narayanaswami already included similar features, including, for example, providing notifications of an incoming call. Thus, one of skill in the art would have expected to have been successful in incorporating this additional feature into the smart watch of Narayanaswami by, for example, modifying the software already present in the watch.

2. Dependent claim 20 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of a text message.*

134. Nokia User Guide discloses the text message recited in claim 20.

“When you receive a text message, the phone displays Message received and the  indicator, and makes a sound.” Ex. 1008, 81. As described above in Section VIII.A, it would have been obvious to incorporate the text message feature of the Nokia wireless phone, which is also a common feature of mobile devices at the time, into the smart watch of Narayanaswami. Further, Narayanaswami already included similar features, including, for example, providing notifications of an incoming call. Thus, one of skill in the art would have expected to have been

successful in incorporating this additional feature into the smart watch of Narayanaswami by, for example, modifying the software already present in the watch.

3. Dependent claim 21 – *The watch of claim 1, wherein said device is operable to allow a user to select a type of user-perceivable signal for said first user-perceivable signals that is different than a type of user-perceivable signal for said second user-perceivable signals.*

135. See claims 19 and 20. Also the Nokia User Guide discloses providing different types of user-perceivable signals, such as different types of tones to different types of events. For example, Nokia User Guide discloses that a user can “[a]ssign a ringing tone to a caller group.” Ex. 1008, 63. Further, Nokia User Guide discloses:

Message alert tone

This option sets the tone your phone makes when you get a text message.

- 1 Press Menu 3.
- 2 Scroll to the profile whose message alert tone you want to set, then press Options.
- 3 Scroll to Customize, then press OK.
- 4 Scroll to Message alert tone, then press Select.
- 5 Scroll through the tones until you hear one you like, then press OK.

136. Ex. 1008, 62. Thus, a user could select different tones, which are user-perceivable signals, and different types of tones for different types of events, such as, for example, selecting a different type of tone for a voice call and for a text message. It would have been obvious to incorporate this feature, another common

feature of devices of the time, into the smart watch of Narayanaswami. And, as I explain in relation to several claims above, Narayanaswami already included similar features, including, for example, providing notifications of an incoming call. Thus, one of skill in the art would have expected to have been successful in incorporating this additional feature into the smart watch of Narayanaswami by, for example, modifying the software already present in the watch.

4. Dependent claim 23 – *The watch of claim 22, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise wireless communication signals to answer an incoming call.*

137. See claim 22, noting that Narayanaswami discloses “transmitting back information sent from the Wrist Watch.” Ex. 1005, 7:67-8:3. Thus, Narayanaswami discloses sending wireless communication signals from the watch to the mobile device. Further, Nokia User Guide discloses “[w]hen someone calls you, the phone alerts you (see ‘Ringing options’ on page 60) and Call flashes on the display. To answer, press any key....” Ex. 1008, 19. It would have been obvious to provide input to the Narayanaswami smart watch to answer a call, and in response to send signals from the smart watch to the mobile device instructing the mobile device to answer the incoming call.

5. Dependent claim 24 – *The watch of claim 22, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise voice signals.*

138. See claim 22. Further, Nokia User Guide discloses, “[w]hen someone calls you, the phone alerts you (see ‘Ringing options’ on page 60) and Call flashes on the display. To answer, press any key....” Ex. 1008, 19; Thus, the Nokia mobile phone is able to answer a call that includes electronic voice signals.

Narayanaswami, discloses a microphone to “record voice input,” which could be further used to capture voice input for a call See Ex. 1005, 4:41-48. It would have been obvious to send these voice signals from a smart watch, such as the watch disclosed in Narayanaswami, to the mobile device, thus allowing the user to conduct a voice call via the smart watch.

- 6. Dependent claim 25 – *The watch of claim 22, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise wireless communication signals to answer an incoming call and wireless communication signals comprising voice signals.***

139. See claims 23 and 24.

- 7. Dependent claim 26 – *The watch of claim 25, wherein said wireless communication signals comprising voice signals comprise voice signals operable to be utilized by said mobile telephonic device for an active call.***

140. See claim 24. The call described in relation to claim 24 would be considered an “active call.”

- 8. Dependent claim 28 – *The watch of claim 27, wherein said device is operable to allow a user to select different types of user-perceivable signals for each of said first user-perceivable***

signals, said second user-perceivable signals, and said third user-perceivable signals.

141. See claim 21. Further, it would have been obvious to a POSITA to assign different types of user-perceivable signals, such as the visual or audible signals disclosed by the Nokia User Guide, in the smart watch of Narayanaswami. For example, a user could select different tones, which are user-perceivable signals, and different types of tones for each different type of event, such as, for example, selecting a different type of tone for a voice call, a text message, or a reminder.

9. Dependent claim 30 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a reminder, and said third user-perceivable signals are indicative of a voice message.*

142. See claims 19 and 23. Further, Nokia User Guide discloses a reminder as recited in claim 30: “The calendar keeps track of reminders, calls you need to make, meetings, and birthdays. It can even sound an alarm when it’s time for you to make a call or go to a meeting.” Ex. 1008, 96. It would have been obvious to incorporate the reminder disclosed in the Nokia User Guide with the smart watch of Narayanaswami.

10. Dependent claim 31 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a*

reminder, and said third user-perceivable signals are indicative of a text message.

143. See claims 20, 23, and 30.

11. Dependent claim 32 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a missed call, and said third user-perceivable signals are indicative of a voice message.*

144. See claims 19 and 23, and Ground 1, claim 13. Also, Nokia User Guide discloses, “[y]our phone saves the numbers and names (if available) of the last 10 callers that have tried unsuccessfully to reach you.” Ex. 1008, 42. Thus, the phone provides a user-perceivable signal of a missed call. It would have been obvious to incorporate this notification into the smart watch of Narayanaswami.

12. Dependent claim 33 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a missed call, and said third user-perceivable signals are indicative of a text message.*

145. See claims 20, 23, and 32.

13. Dependent claim 34 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a voice message, and said third user-perceivable signals are indicative of a text message.*

146. See claims 19, 20, and 23.

14. Dependent claim 36 – *The watch of claim 35, wherein said wireless communication signals operable to be sent to said*

mobile telephonic device comprise wireless communication signals to answer an incoming call.

147. See claim 23.

15. Dependent claim 37 – *The watch of claim 35, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise voice signals.*

148. See claim 23.

16. Dependent claim 38 – *The watch of claim 35, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise wireless communication signals to answer an incoming call and wireless communication signals comprising voice signals.*

149. See claim 23.

17. Dependent claim 39 – *The watch of claim 38, wherein said wireless communication signals comprising voice signals comprise voice signals operable to be utilized by said mobile telephonic device for an active call.*

150. See claim 23.

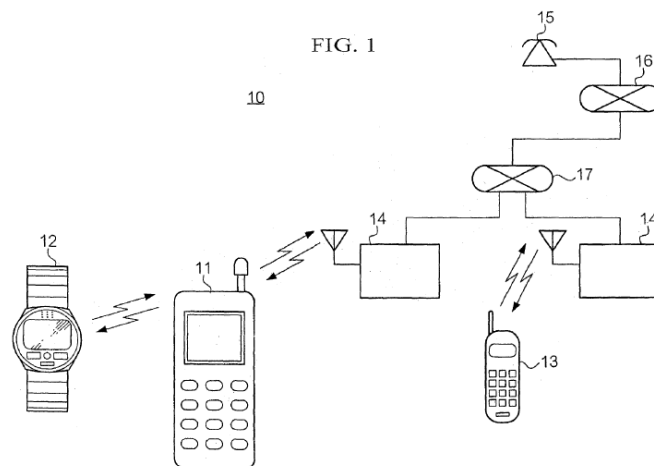
C. Ground 3: Claims 1-10, 13, 16, 18, 19, 22-27, 35-39 are unpatentable as obvious over Fujisawa in view of Vock

151. Fujisawa discloses all the elements recited in the independent claim with the exception of (1) the two-piece band with a buckle and (2) motion sensing. Fujisawa also discloses most elements of the dependent claims. Vock discloses the two-piece band and motion sensing. It is my opinion that the combination of Fujisawa and Vock renders claims 1-10, 13, 16, 18, 19, 22-27, 35-39 obvious.

1. Independent claim 1

a. *Claim 1 Preamble – A watch for use with a mobile telephonic device that provides notification of an incoming call, said watch comprising:*

152. Fujisawa discloses, “[w]hen there is an incoming call to a mobile telephone, it sends an incoming call notification signal to a watch-shaped information processing device.” Ex. 1006, Abstract;

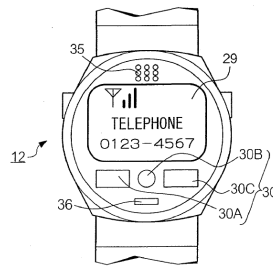


Ex. 1006, Fig. 1.

b. *Claim 1a – a watch band; a second watch band; a buckle, wherein said buckle is couple to said second watch band; and*

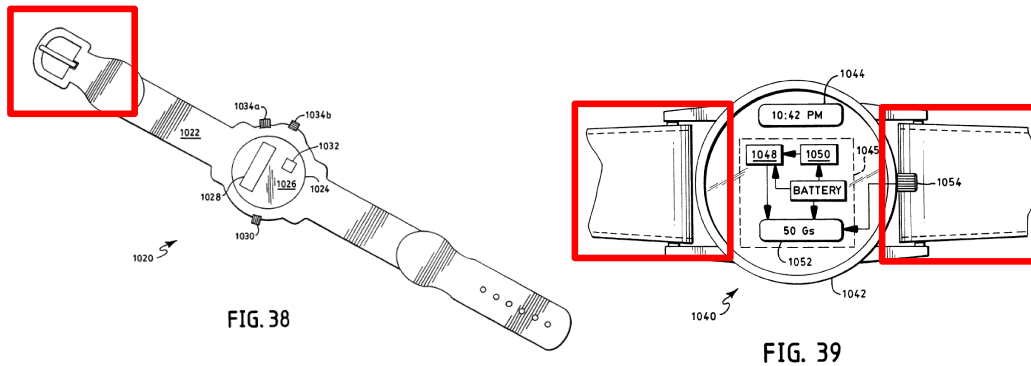
153. Fujisawa and Vock disclose claim 1 a. Fujisawa discloses a watch band but does not disclose a two-piece watch band with a buckle:

FIG. 6



Ex. 1006, Fig. 6. Vock discloses a two-piece band with a buckle to couple the two bands together.

:



Ex. 1007, Figs. 38, 39 (annotated); Figure 39 (above right) demonstrates that the smart watch of Vock includes two bands—one connected to the lug on the left, and one to the right. And Figure 38 (above left) discloses the buckle that affixes the bands to one another. It would have been obvious to incorporate the two-band strap with a buckle disclosed in Vock with the smart watch of Fujisawa.

- c. ***Claim 1b – a device operable to receive first wireless communication signals associated with a first event and second wireless communication signals associated with a second event from said mobile telephonic device, wherein said first event and second event are different,***

154. Fujisawa discloses claim 1b, including a first event—an incoming call: “In the watch-shaped information processing device 12, the incoming call notification signal is received in the antenna unit 21 and the receiver circuit 23 demodulates the incoming call notification signal to the received data DRX (step S6).” Ex. 1006, [0155] The signals are received via the ACL link, the first wireless communications signals. See above, ¶ 75. “When the ACL link is established, the mobile telephone 11A sends the incoming call notification signal in ACL packets in order to notify the incoming call (step SB6).” Ex. 1006, [0237]. “When the watch-shaped information processing device 12A receives the ACL packets (step Sb7), it finds that there is an incoming call to the mobile telephone 11A and displays information and notifies the user of incoming call.” Ex. 1006, [0238]. Further, to the extent receiving and displaying the wireless signals requires receiving and displaying them on the mobile phone, it would have been obvious to do so as that would simplify the requirements of the watch, which as disclosed is more capable than would be necessary.

155. Fujisawa also discloses a second event. First, receiving two calls, one after the other would satisfy this limitation. Second, to the extent the claim requires the second event is of a different type than the first, Fujisawa discloses a different second event—a missed call: “As shown in FIG. 19, during this process, the caller's telephone number and a message ‘recording caller's message’ are shown on

the display unit 29 of the watch-shaped information processing device 12A to inform the user that the call is currently leaving a message.” Ex. 1006, [0272]. The voice message related to the missed call is a second wireless communication signal and uses a separate link. “Then, the mobile telephone 11A instructs the watch-shaped information processing device 12A to shift from the link connection phase by the ACL link to the link connection phase by the SCO link.” Ex. 1006, [0266]. “The mobile telephone 11A receives the data for the [voice] message (step Sc21), and then sends the data to the watch-shaped information processing device 12A via the SCO link (step Sc22).” Ex. 1006, [0270].

d. Claim 1c – said device includes a battery,

156. Fujisawa discloses claim 1c, stating “[a] battery 34 supplies power to components of the watch-shaped information processing device 12.” Ex. 1006, [0137].

e. Claim 1d – said device includes motion sensing operable to distinguish between a plurality of different types of motion,

157. Fujisawa does not disclose motion sensing, but Vock discloses claim 1d. Vock discloses, “[t]he watch 1020 also holds a power sensing unit 1032....” Ex. 1007, 44:33-34. “The power sensing unit [] provides a measure of the intensity or how ‘hard’ the user played during a particular activity.” *Id.*, 6:15-17. The power sensing unit may include, for example, one or more microphones or

accelerometers. *Id.*, 44:55-56. The watch may also include an altimeter to provide a “dual drop distance and-power watch embodiment,” in addition to sensors for “airtime”, and “speed”, thereby showing that Vock discloses distinguishing between different types of motion. *Id.*, 44:66-45:5. Thus, the combination of Fujisawa and Vock discloses motion sensing operable to distinguish between different types of motion.

f. *Claim 1e – said device is operable to provide first user-perceivable notification signals that are dependent upon said received first communication signals, and*

158. Fujisawa discloses that the notification is dependent on the received communication signals as recited in claim 1e. “In more detail, in order to notify the user of incoming call, the central control circuit 25 controls the electronic sound unit 26 to produce a buzzer sound or an electronic sound, the vibrator 27 to produce a vibration, or the light emitting unit 28 to blink light emitting device such as an LED. control circuit 25 also extracts the telephone number of the caller from the received data DRX, and displays on the display unit 29 the telephone number and other related information, if any information. such as name of the caller is registered in advance.” Ex. 1006, [0156],

g. *Claim 1f – said device is operable to provide second user perceivable notification signals that are dependent upon said second communication signals.*

159. See claim 1b. Further, Fujisawa discloses that in response to the first

event, “[s]hown on the display unit 29 in FIG. 6 are the telephone number of the caller and a phrase meaning call incoming.” Ex. 1006, [0156]. In response to the second event, the watch displays “recording caller’s message.” Ex. 1006, [0272]. Both notifications are dependent on the corresponding first and second communication signals.

2. Dependent claim 2 – *The watch of claim 1, further comprising an amplifier.*

160. Fujisawa discloses claim 2, noting that the watch includes multiple amplifiers, including “power amplifier 24F.” Ex. 1006, [0145].

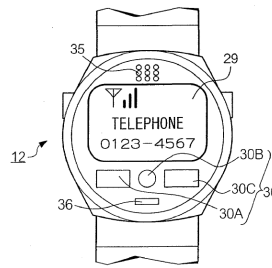
3. Dependent claim 3 – *The watch of claim 1, wherein said user-perceivable notifications signals comprise audible notification signals.*

161. Fujisawa discloses claim 3, stating, “[i]n more detail, in order to notify the user of incoming call, the central control circuit 25 controls the electronic sound unit 26 to produce a buzzer sound or an electronic sound....” Ex. 1006, [0156].

4. Dependent claim 4 – *The watch of claim 1, wherein said device further comprises a display.*

162. Fujisawa discloses claim 4, noting that the watch includes a “display unit 29.” Ex. 1006, [0133].

FIG. 6



Ex. 1006, Fig. 6.

5. Dependent claim 5 – *The watch of claim 1, wherein said device further comprises a vibrator.*

163. Fujisawa discloses that the watch includes a “vibrator 27.” Ex. 1006, [0133].

6. Dependent claim 6 – *The watch of claim 1, wherein said device further comprises a speaker.*

164. Fujisawa discloses that the watch includes a “speaker 35.” Ex. 1006, [0139].

7. Dependent claim 7 – *The watch of claim 1, wherein said device further comprises an LED.*

165. Fujisawa discloses that the watch includes a “light emitting unit 28 has an LED or other light emitting device.” Ex. 1006, [0133].

8. Dependent claim 8 – *The watch of claim 1, wherein said device further comprises control circuitry, an input device, and memory.*

166. Fujisawa discloses, “[t]he central control circuit 25 controls components of the watch-shaped information processing device 12....” Ex. 1006,

[0132]. Further, “An external input unit 30 is equipped with buttons, a touch panel, and so on.” Ex. 1006, [0134]. And “[a] nonvolatile memory 33 stores various data and programs.” Ex. 1006, [0136]. Thus, Fujisawa discloses that the watch comprises control circuitry, an input device, and memory.

9. Dependent claim 9 – *The watch of claim 1, wherein said device further comprises a display, a speaker, a vibrator, control circuitry, an input device, and memory.*

167. See claims 4-8.

10. Dependent claim 10 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of an incoming call.*

168. See claim 1b.

11. Dependent claim 13 – *The watch of claim 1, wherein said second user-perceivable signals are indicative of a missed call.*

169. See claim 1b, second event.

12. Dependent claim 16 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of an incoming call and said second user-perceivable signals are indicative of a missed call.*

170. See claims 1 and 13.

13. Dependent claim 18 – *The watch of claim 1, wherein at least one of said plurality of different types of motion is a human motion.*

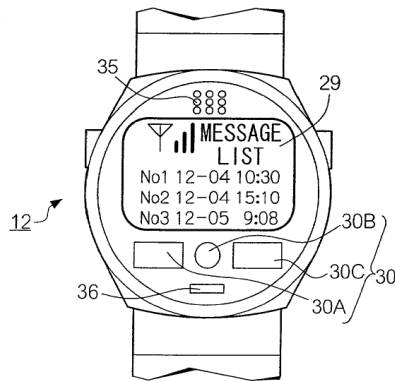
171. See claim 1d. The power and drop described in Vock are measures of the user’s motion. For example, Vock discloses “this embodiment takes advantage

of the fact that many Sports include waving and movement of the user's arm (e.g., tennis and volley-ball); and thus power is determined through the techniques herein to inform the user of this performance data, through the watch 1020.” Ex. 1007, 44:43-47.

14. Dependent claim 19 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of a voice message.*

172. “On the other hand, when the central control circuit 25A receives “message playing operation by list” (step Sd2: playing operation by list), it sees the address management table AMT and acquires all the readout addresses for the caller's messages.” Ex. 1006, [0291].

FIG. 23



Id., Fig. 23. “Using the readout addresses, the central control circuit 25A reads only the incoming call time data and the caller data in the nonvolatile memory 33, and displays them on the display unit 29 (step Sd5).” Ex. 1006, [0290]. Thus,

Fujisawa discloses that the user-perceivable signals are indicative of a voice message.

15. Dependent claim 22 – *The watch of claim 1, wherein said device is operable to send wireless communication signals to said mobile telephonic device.*

173. Fujisawa discloses that the watch can send wireless communication signals to the mobile phone. For example, “[w]hen there is an incoming call to the mobile telephone 11 or 11A, communication links between the caller's telephone and the mobile telephone 11 or 11A and between the mobile telephone 11 or 11A and the watch-shaped information processing device 12 or 12A are established. Using the links, the user makes telephone conversation with the caller.” Ex. 1006, [0359]. As another example, “[t]he ACL link is an asynchronous communication link defined in the bluetooth technical specification.” Ex. 1006, [0188]. “The asynchronous data here can be control data used for various instructions and controls among the watch-shaped information processing device 12A and the mobile telephone 11A.” *Id.*, [0189].

16. Dependent claim 23 – *The watch of claim 22, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise wireless communication signals to answer an incoming call.*

174. See claim 22 in relation to an incoming call. Fujisawa further discloses, “[i]n the above explanation for the first, second, and third embodiments,

another modification may be possible by which the user can perform a telephone communication by using the microphone 36 and the speaker 35 of the watch-shaped information processing device 12 or 12A as follows.” Ex. 1006, [0359].

17. Dependent claim 24 – *The watch of claim 22, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise voice signals.*

175. See claims 22 and 23. Further, Fujisawa discloses “[c]ommunication links between the caller's telephone and the mobile telephone 11 or 11A and between the mobile telephone 11 or 11A and the watch-shaped information processing device 12 or 12A are established. Using the links, the user makes telephone conversation with the caller.” Ex. 1006, [0359].

18. Dependent claim 25 – *The watch of claim 22, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise wireless communication signals to answer an incoming call and wireless communication signals comprising voice signals.*

176. See claims 23 and 24.

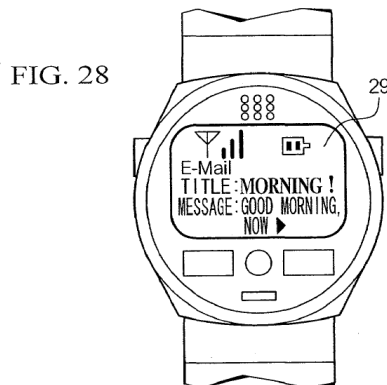
19. Dependent claim 26 – *The watch of claim 25, wherein said wireless communication signals comprising voice signals comprise voice signals operable to be utilized by said mobile telephonic device for an active call.*

177. See claims 24 and 25.

20. Dependent claim 27 – *The watch of claim 1, wherein said device is operable to receive third wireless communication signals associated with a third event, wherein each of said first event, second event, and third event is different, and said*

device is operable to provide third user-perceivable notification signals that are dependent upon said third wireless communication signals.

178. See claim 1 in relation to the first and second events. Fujisawa also discloses a third event. For example, Fujisawa discloses that a user can receive an email on the watch along with a corresponding notification:



179. “FIG. 28 shows a display screen after an e-mail message is selected. In FIG. 28, the user sees that that an e-mail message, and title and part of the message.” Ex. 1006, [0348]. Thus, Fujisawa discloses receiving three different events and corresponding communication signals.

21. Dependent claim 35 – *The watch of claim 27, wherein said device is operable to send wireless communication signals to said mobile telephonic device.*

180. See claims 22 and 27.

22. Dependent claim 36 – *The watch of claim 35, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise wireless communication signals to answer an incoming call.*

181. See claims 23 and 35.

23. Dependent claim 37 – The watch of claim 35, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise voice signals.

182. See claims 24 and 35.

24. Dependent claim 38 – The watch of claim 35, wherein said wireless communication signals operable to be sent to said mobile telephonic device comprise wireless communication signals to answer an incoming call and wireless communication signals comprising voice signals.

183. See claims 27 and 36.

25. Dependent claim 39 – *The watch of claim 38, wherein said wireless communication signals comprising voice signals comprise voice signals operable to be utilized by said mobile telephonic device for an active call.*

184. See claims 24 and 38.

D. Ground 4: Claims 11, 12, 14, 15, 17, 20, 21, and 28-34 are unpatentable as obvious over Fujisawa and Vock and further in view of Nokia 8890 User Guide

185. The combination of Fujisawa and Vock discloses most of the elements of these dependent claims. However, the features not explicitly disclosed by the combination were common in mobile phones at the time of the alleged invention. It is my opinion that the combination of Fujisawa, Vock, and the Nokia 8890 User Guide renders claims 11, 12, 14, 15, 17, 20, 21, and 28-34 obvious.

1. Dependent claim 11 – *The watch of claim 1, wherein said second user-perceivable signals are indicative of a calendar notification.*

186. Nokia User Guide discloses, “The calendar keeps track of reminders, calls you need to make, meetings, and birthdays. It can even sound an alarm when it’s time for you to make a call or go to a meeting.” Ex. 1008, 96. The “alarm” is a user-perceivable signal indicative of a calendar notification. It would have been obvious to incorporate this feature of the Nokia phone, which is also a common feature of mobile devices at the time, into the smart watch of Fujisawa. Fujisawa already included similar features, including, for example, providing notifications of an incoming call. Thus, one of skill in the art would have expected to have been successful in incorporating this additional feature into the smart watch of Fujisawa by, for example, modifying the software already present in the watch.

2. Dependent claim 12 – *The watch of claim 1, wherein said second user-perceivable signals are indicative of a reminder.*

187. See claim 11. One type of item that the calendar can keep track of is a “reminder.”

3. Dependent claim 14 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of an incoming call and said second user-perceivable signals are indicative of a calendar notification.*

188. See claim 11, and Ground 3, claim 1.

4. Dependent claim 15 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of an incoming*


call and said second user-perceivable signals are indicative of a reminder.

189. See claim 12, and Ground 3, claim 1.

5. Dependent claim 17 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a reminder, and said device is configured to receive third wireless communication signals associated with a third event.*

190. See claim 12, and Ground 3, claims 1 and 27.

6. Dependent claim 20 – *The watch of claim 1, wherein said first user-perceivable signals are indicative of a text message.*

191. Nokia User Guide discloses, [w]hen you receive a text message, the phone displays Message received and the  indicator, and makes a sound.” Ex. 1008, 81. As described above, it would have been obvious to incorporate the text message feature of the Nokia wireless phone, which is also a common feature of mobile devices at the time, into the smart watch of Fujisawa. into the smart watch of Fujisawa. Fujisawa already included similar features, including, for example, providing notifications of an incoming call. Thus, one of skill in the art would have expected to have been successful in incorporating this additional feature into the smart watch of Fujisawa by, for example, modifying the software already present in the watch.

7. Dependent claim 21 – *The watch of claim 1, wherein said device is operable to allow a user to select a type of user-perceivable signal for said first user-perceivable signals that is*

different than a type of user-perceivable signal for said second user-perceivable signals.

192. See claims 19 and 20. Nokia User Guide discloses, “[a]ssign a ringing tone to a caller group.” Ex. 1008, 54. Further, Nokia User Guide discloses:

Message alert tone

This option sets the tone your phone makes when you get a text message.

- 1 Press Menu 3.
- 2 Scroll to the profile whose message alert tone you want to set, then press Options.
- 3 Scroll to Customize, then press OK.
- 4 Scroll to Message alert tone, then press Select.
- 5 Scroll through the tones until you hear one you like, then press OK.

Ex. 1008, 62. Thus, a user could select different tones, which are user-perceivable signals, and different types of tones for different types of events, such as, for example, selecting a different type of tone for a voice call and for a text message.

8. Dependent claim 28 – *The watch of claim 27, wherein said device is operable to allow a user to select different types of user-perceivable signals for each of said first user-perceivable signals, said second user-perceivable signals, and said third user-perceivable signals.*

193. See claim 21, and Ground 3, claim 27. Further, it would have been obvious to a POSITA to assign different types of user-perceivable signals, such as the visual or audible signals disclosed by the Nokia User Guide, in the smart watch of Fujisawa. For example, a user could select different tones, which are user-perceivable signals, and different types of tones for each different type of event, such as, for example, selecting a different type of tone for a voice call, a text

message, or a reminder.

9. **Dependent claim 29 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a reminder, and said third user-perceivable signals are indicative of a missed call.***

194. See claim 12, and Ground 3, claims 13 and 23.

10. **Dependent claim 30 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a reminder, and said third user-perceivable signals are indicative of a voice message.***

195. See Ground 3, claims 19 and 23. Further, Nokia User Guide discloses “The calendar keeps track of reminders, calls you need to make, meetings, and birthdays. It can even sound an alarm when it’s time for you to make a call or go to a meeting.” Ex. 1008, 87. It would have been obvious to incorporate the reminder disclosed in the Nokia User Guide with the smart watch of Fujisawa.

11. **Dependent claim 31 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a reminder, and said third user-perceivable signals are indicative of a text message.***

196. See claims 20 and 30, and Ground 3, claim 23.

12. **Dependent claim 32 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a missed call, and said third user-perceivable signals are indicative of a voice message.***

197. See Ground 3, claims 13, 19 and 23.

13. Dependent claim 33 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a missed call, and said third user-perceivable signals are indicative of a text message.*

198. See claims 20 and 32, and Ground 3, claim 23.

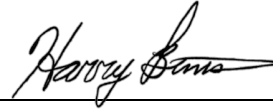
14. Dependent claim 34 – *The watch of claim 27, wherein said first user-perceivable signals are indicative of an incoming call, said second user-perceivable signals are indicative of a voice message, and said third user-perceivable signals are indicative of a text message.*

199. See claim 20, and Ground 3, claims 19 and 23.

Declaration supporting Petition for *Inter Partes* Review
U.S. Patent No. 11,190,633

I declare under penalty of perjury that the foregoing Declaration is true and correct.

Dated: 8/8/2022

A handwritten signature in black ink, appearing to read "Harry V. Bims", is written over a horizontal line.

Dr. Harry V. Bims