

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner

v.

ISCAN2D TECHNOLOGIES, LLC,
Patent Owner

Case IPR2026-00317
U.S. Patent No. 12,230,394

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 12,230,394**

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PETITIONER'S EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 12,230,394 to McKirdy
1002	File History of U.S. Patent No. 12,230,394
1003	Declaration of Dr. Prashant Shenoy in Support of Petition for <i>Inter Partes</i> Review of U.S. Patent No. 12,230,394
1004	U.S. Patent Application Publication No. 2011/0072263 to Bishop et al. ("Bishop")
1005	U.S. Patent Application Publication No. 2008/0146892 to LeBoeuf et al. ("LeBoeuf")
1006	U.S. Patent Application Publication No. 2011/0081860 to Brown et al. ("Brown")
1007	International Patent Application Publication No. WO 2010/144626 to Weiss ("Weiss")
1008	U.S. Patent Application Publication No. 2012/0198531 to Ort et al. ("Ort")
1009	U.S. Patent Application Publication No. 2010/0012715 to Williams et al. ("Williams")
1010	U.S. Patent Application Publication No. 2008/0052243 to Narayanaswami et al. ("Narayanaswami")
1011	U.S. Patent No. 4,403,869 to Crutcher ("Crutcher")
1012	U.S. Patent No. 2,612,994 to Woodland et al. ("Woodland")
1013	Pavlidis et al., "Fundamentals of Bar Code Information Theory," IEEE (1990)

Exhibit No.	Description
1014	Gao et al., “Understanding 2D-BarCode Technology and Applications in M-Commerce – Design and Implementation of a 2D Barcode Processing Solution,” (31st Annual International Computer Software and Applications Conference (2007))
1015	Pavlidis, “A New Paper/Computer Interface: Two-Dimensional Symbolologies,” IEEE (2000)
1016	U.S. Patent Application Publication No. 2012/0024956 to Chen (“Chen”)
1017	Parikh et al., “Localization and Segmentation of a 2D High Capacity Color Barcode,” 2008 IEEE Workshop on Applications of Computer Vision
1018	Bagherinia et al., “A Theory of Color Barcodes,” UC Santa Cruz (2011)
1019	Grillo et al., “High Capacity Colored Two Dimensional Codes,” Proceedings of the International Multiconference on Computer Science and Information Technology (2010)
1020	Claycomb et al., Using a Two Dimensional Colorized Barcode Solution for Authentication in Pervasive Computing,” ACS/IEEE International Conference on Pervasive Services (2006)
1021	U.S. Patent No. 8,823,494 to Kovitz et al. (“Kovitz”)
1022	U.S. Patent Application Publication No. 2011/0295502 to Faenger (“Faenger”)
1023	U.S. Patent Application Publication No. 2005/0139680 to Anttila et al. (“Anttila”)
1024	U.S. Patent Application Publication No. 2008/0132798 to Hong et al. (“Hong”)
1025	U.S. Patent Application Publication No. 2011/0066009 to Moon et al. (“Moon”)

Exhibit No.	Description
1026	U.S. Patent Application Publication No. 2010/0121227 to Stirling et al. (“Stirling”)
1027	U.S. Patent Application Publication No. 2012/0067944 to Ross (“Ross”)
1028	U.S. Patent Application Publication No. 2008/0210754 to Lovett (“Lovett”)
1029	U.S. Patent Application Publication No. 2005/0032515 to Mastio (“Mastio”)
1030	U.S. Patent Application Publication No. 2010/0321609 to Qui et al. (“Qui”)
1031	U.S. Patent Application Publication No. 2010/0156676 to Mooring et al. (“Mooring”)
1032	U.S. Patent Application Publication No. 2008/0168361 to Forstall et al. (“Forstall”)
1033	<i>Curriculum Vitae</i> of Dr. Prashant Shenoy

CLAIM LISTING

1.P	A mobile device, wherein the mobile device is comprised of:
1.1	at least one camera sensor, included within the mobile device;
1.2	at least one processor in signal communication with the at least one camera sensor;
1.3	A display in signal communication with the at least one processor;
1.4	Communication circuitry configured for wireless communication with an external wearable activity tracking device;
1.5	Memory, included within the mobile device, associated with one or more processors and configured to store software instructions, which, when executed by the one or more processors, cause the one or more processors to perform operations comprising;
1.6	Generate, via the mobile device processor, an optical scanning user interface on the mobile device display;
1.7	Detect, via the at least one mobile device camera sensor and the optical scanning user interface, a color coded digital scannable media from a display included within the external wearable activity tracking device,
1.8	wherein the color coded digital scannable media contains wireless pairing information associated with the external wearable activity tracking device;
1.9	Optically obtain, via the at least one mobile device camera sensor, the wireless pairing information from the color coded digital scannable media;

1.10	Process, via the at least one mobile device processor, the wireless pairing information;
1.11	Establish, via the at least one mobile device processor, a wireless communications link with the external wearable activity tracking device responsive to the processing of the wireless pairing information;
1.12	Receive, via the wireless communications link, at least one of activity related information and bio-metric information generated by the external wearable activity monitoring device;
1.13	Display, via the mobile device display, at least one of the activity related information and the bio-metric information.
2	The mobile device of claim 1, where in the mobile device is at least one of a smartphone device and a tablet device.
3	The mobile device of claim 1, wherein the wireless communications link is a two-way wireless communications link.
4	The mobile device of claim 1, wherein the wireless pairing information includes at least one of a MAC address identifier associated with the external wearable activity tracking device and a unique identification number associated with the external wearable activity tracking device.
5	The mobile device of claim 1, wherein the color coded digital scannable media includes at least one of a QR code, a 2D Matrix code, a 3D barcode, a representation of nonhuman readable information using colored pixels, a augmented reality marker, a augmented reality image, and a augmented reality code.
6	The mobile device of claim 1, wherein the activity related information is generated by the external wearable activity tracking device from an accelerometer included within the external wearable activity tracking device.

7	The mobile device of claim 1, wherein the bio-metric information is generated by the external wearable activity tracking device from at least one of a blood pressure sensor, a heart rate sensor, a blood glucose sensor, a body fat sensor, and a temperature within the external wearable activity tracking device.
8	The mobile device of claim 1, wherein the communication circuitry is further configured to establish at least one of a near field communications link, a wide area network communications link, and a personal area network communications link with the external wearable activity tracking device.
9	The mobile device of claim 1, wherein the wireless pairing information is at least partially encrypted by the external wearable activity tracking device.
10	The mobile device of claim 1, wherein the processing further includes decrypting the wireless pairing information after the mobile device optically detects the color coded digital scannable media displayed by the external wearable activity tracking device.
11.P	A system for establishing a wireless communications link between a wearable activity tracking device and a mobile device, the system comprised of:
11.A.1	The wearable activity tracking device, wherein the wearable activity tracking device is comprised of;
11.A.2	A display device;
11.A.3	At least one of an activity tracking capability and an embedded bio-metric monitoring sensor associated with the wearable activity tracking device;

11.A.4	Wireless communication circuitry, wherein the wireless communication circuitry is configured to establish a wireless communications link with the mobile device;
11.A.5	at least one processor with software, wherein the at least one processor is associated with a memory device, and wherein the at least one processor is in signal communication with the display device and the wireless communication circuitry;
11.A.6	the memory device, wherein the memory device is configured to store wireless pairing information associated with the wireless communication circuitry;
11.A.7	wherein the at least one processor software is configured to; obtain, from the memory device, the wireless pairing information associated with the wireless communication circuitry;
11.A.8	generate a color coded digital scannable media image responsive to the wireless pairing information;
11.A.9	control the display device, wherein the display device is configured to display the color coded digital scannable media image;
11.A.10	Establish, via the wireless communication circuitry, the wireless communications link with the mobile device responsive to the mobile device scanning and decoding the color coded displayed digital scannable media;
11.A.11	Generate at least one of activity tracking information and bio-metric information;
11.A.12	Communicate, via the wireless communications link, at least one of the activity tracking information and the bio-metric information to the mobile device; and

11.B.1	The mobile device, wherein the mobile device is comprised of; at least one camera sensor, included within the mobile device;
11.B.2	at least one processor in signal communication with the at least one camera sensor;
11.B.3	a display in signal communication with the at least one processor;
11.B.4	communication circuitry configured for wireless communication with the wearable activity tracking device;
11.B.5	memory, included within the mobile device, associated with one or more processors and configured to store software instructions, which, when executed by the one or more processors, cause the one or more processors to perform operations comprising;
11.B.6	Generate, via the mobile device processor, an optical scanning user interface on the mobile device display;
11.B.7	Detect, via the at least one mobile device camera sensor and the optical scanning user interface, a color coded digital scannable media from the display included within the wearable activity tracking device, wherein the color coded digital scannable media contains wireless pairing information associated with the wearable activity tracking device;
11.B.8	Optically obtain, via the at least one mobile device camera sensor, the wireless pairing information from the color coded digital scannable media;
11.B.9	Process, via the at least one mobile device processor, the wireless pairing information;
11.B.10	Establish, via the at least one mobile device processor, a wireless communications link with the wearable activity

	tracking device responsive to the processing of the wireless pairing information;
11.B.11	Receive, via the wireless communications link, at least one of activity related information, and bio-metric information generated by the wearable activity tracking device;
11.B.12	Display, via the mobile device display, at least one of the activity related information and the bio-metric information.
12	The system of claim 11, wherein the wearable activity tracking device wireless communication circuitry is further configured to establish at least one of a near field communications link, a wide area network communications link, and a personal area network communications link with the mobile device.
13	The system of claim 11, wherein the mobile device is at least one of a smartphone and a tablet device.
14	The system of claim 11, wherein the wearable activity tracking device is at least one of a smartwatch device and a wearable health monitoring device.
15	The system of claim 11, wherein the wireless pairing information includes at least one of a MAC address identifier associated with the wearable activity tracking device and a unique identification number associated with the wearable activity tracking device.
16	The system of claim 11, wherein the bio-metric information is generated by the wearable activity tracking device from at least one of a blood pressure sensor, a heart rate sensor, a blood glucose sensor, a body fat sensor, and a temperature included within the wearable activity tracking device.
17	The system of claim 11, wherein the color coded digital scannable media displayed by the wearble activity tracking device includes at least one of a QR code, a 2D Matrix code, a 3D barcode, a representation of non-human

	readable information using colored pixels, a augmented reality marker, a augmented reality image, and a augmented reality code.
18	The system of claim 11, wherein the activity related information is generated by the wearable activity tracking device from an accelerometer included within the wearable activity tracking device.
19	The system of claim 11, wherein the wireless pairing information is at least partially encrypted by the wearable activity tracking device.
20	The system of claim 11, wherein the processing by the at least one mobile device processor further includes decrypting the wireless pairing information after the mobile device optically detects the color coded digital scannable media displayed by the wearable activity tracking device.

Apple Inc. petitions for *inter partes* review of claims 1-20 of U.S. Patent No. 12,230,394 (“the ’394 patent”; EX1001).

I. INTRODUCTION

The ’394 patent claims nothing new. It is directed to techniques for establishing wireless connections using barcodes, and sending biometric data over those connections. During prosecution, the Examiner acknowledged that establishing wireless connections using barcodes was known before the priority date of the ’394 patent. The patent’s alleged novelty thus stems from the *type* of data communicated once the wireless connection is established. But communicating biometric data over wireless communication links was also well-known before the priority date of the ’394 patent.

The prior art asserted herein teaches each and every claim element and renders claims 1-20 obvious. Bishop, Brown, Ort, and Williams all teach systems for establishing wireless communications links using barcodes that encode wireless pairing information. LeBoeuf and Weiss teach wearable devices that generate biometric and activity related data and communicate it to mobile devices over wireless communications links.

This Petition is supported by the testimony of Dr. Shenoy, an expert in the field of electrical and computer engineering with over 30 years of experience. Dr. Shenoy shows that each claim of the ’394 patent is disclosed by the prior art, and

that a person of ordinary skill in the art (POSA) would have been motivated to adapt the prior art to arrive at the challenged claims.

The Board should thus institute review of the '394 patent and cancel all claims.

II. THE '394 PATENT

A. Summary

The '394 patent teaches a “general system 100 for obtaining, communicating and processing information via a barcode.” EX1001, 3:60-66. The system 100 includes a data generation device that communicates with a user’s mobile device. *Id.* The data generation device “generat[es] user data,” “processes the user data [to] generate[] barcode data,” and displays the barcode data “in graphical form.” *Id.*, 4:9-24. The mobile device then “scan[s] the barcode... processes the barcode data and if necessary, operates in response to the barcode data.” *Id.*, 4:24-29.

In the claims, the data generation device is a *wearable activity tracking device* and the barcode data comprises *wireless pairing information* encoded in a *color coded digital scannable media* (barcode). The *mobile device* scans this color coded barcode to establish a *wireless communications link* with the activity tracking device. The mobile device then receives and displays *activity related information* or *the bio-metric information* generated by the activity tracking device.

B. Prosecution History

The '394 patent was allowed without rejection. In the Notice of Allowance,

the Examiner acknowledged that Brown, asserted herein, “teaches performing Bluetooth pairing between two devices where a first device generates a barcode that encodes the Bluetooth pairing data that is scanned using a camera as a barcode scanner.” EX1002, 177-89. The Examiner also acknowledged that “[t]he prior art teaches encoding pairing information as color information.” *Id.* Despite this, the Examiner allowed the claims because the prior art allegedly did not teach using such established wireless communication links to communicate biometric or activity related data. *See id.*

C. Person of Ordinary Skill in Art (POSA)

A POSA at the time of the '394 patent was filed would have had a bachelor's degree in Computer or Electrical Engineering or an equivalent discipline, and approximately two years' experience in telecommunications or computer networking. EX1003, ¶¶66-67. Additional education could substitute for professional experience, and significant work experience could substitute for formal education. *Id.*

III. CLAIM CONSTRUCTION

Absent lexicography or disavowal, claim terms in an IPR are given their plain and ordinary meaning in light of the specification and prosecution history. *Sisvel Int'l S.A. v. Sierra Wireless, Inc.*, 81 F.4th 1231, 1236 (Fed. Cir. 2023). Petitioner submits that all claim terms should receive their plain and ordinary

meaning in the context of the '394 patent specification. In particular, Petitioner submits that the plain and ordinary meaning of the term “color coded” is: “having color other than ‘black-white’ that encodes data.” *See* EX1001, 28:38-65.

Petitioner submits that no other term needs express construction.

IV. GROUNDS

Apple requests IPR on the following Grounds under 35 U.S.C. § 103:

Ground	Claims	Combination of References
1	1-3, 5-8, 11-14, 16-18	Bishop-LeBoeuf
2	4, 9-10, 15, 19-20	Bishop-LeBoeuf-Williams
3A	1-8, 11-18	Brown-Weiss
3B	1-8, 11-18	Brown-Weiss-Ort
4A	9, 10, 19, 20	Brown-Weiss-Williams
4B	9, 10, 19, 20	Brown-Weiss-Ort-Williams

Each reference is prior art to the '394 patent, which claims an earliest possible priority date of August 5, 2011¹:

- U.S. 2011/0072263 (“Bishop”) was filed September 23, 2009, and published March 24, 2011. Bishop is prior art under at least §102(a)

¹ Apple does not concede that the '394 patent is entitled to this priority date.

and (e).

- U.S. 2008/0146892 (“LeBoeuf”) published June 19, 2008. LeBoeuf is prior art under at least §102(b).
- U.S. 2010/0012715 (“Williams”) published January 21, 2010. Williams is prior art under at least §102(b).
- U.S. 2011/0081860 (“Brown”) was filed on October 2, 2009, and published April 7, 2011. Brown is prior art under at least §102(a).
- WO 2010/144626 (“Weiss”) published on December 16, 2020. Weiss is prior art under at least §102(a).
- U.S. 2012/0198531 (“Ort”) was filed January 31, 2011, and published August 2, 2012. Ort is prior art under at least §102(a) and (e).

Each of these references is analogous to the claims of the ’394 patent. The ’394 patent claims are in the field of endeavor of establishing wireless communications links between devices to facilitate the communication of information between the devices. EX1001, 39:34-40:7; EX1003, ¶39. Bishop, Brown, Williams, and Ort are in this field of endeavor because they disclose techniques for establishing wireless communications links between devices. *See, e.g.,* EX1004, ¶6; EX1006, ¶49; EX1009, ¶¶41-43; EX1008, ¶¶4-6; EX1003, ¶¶69-71, 189, 203-04, 297. LeBoeuf and Weiss are in this field of endeavor because they disclose devices that communicate data over wireless communications links.

EX1005, ¶¶101-02; EX1007, 2:8-11, 8:11-14; EX1003, ¶¶72-76, 205.

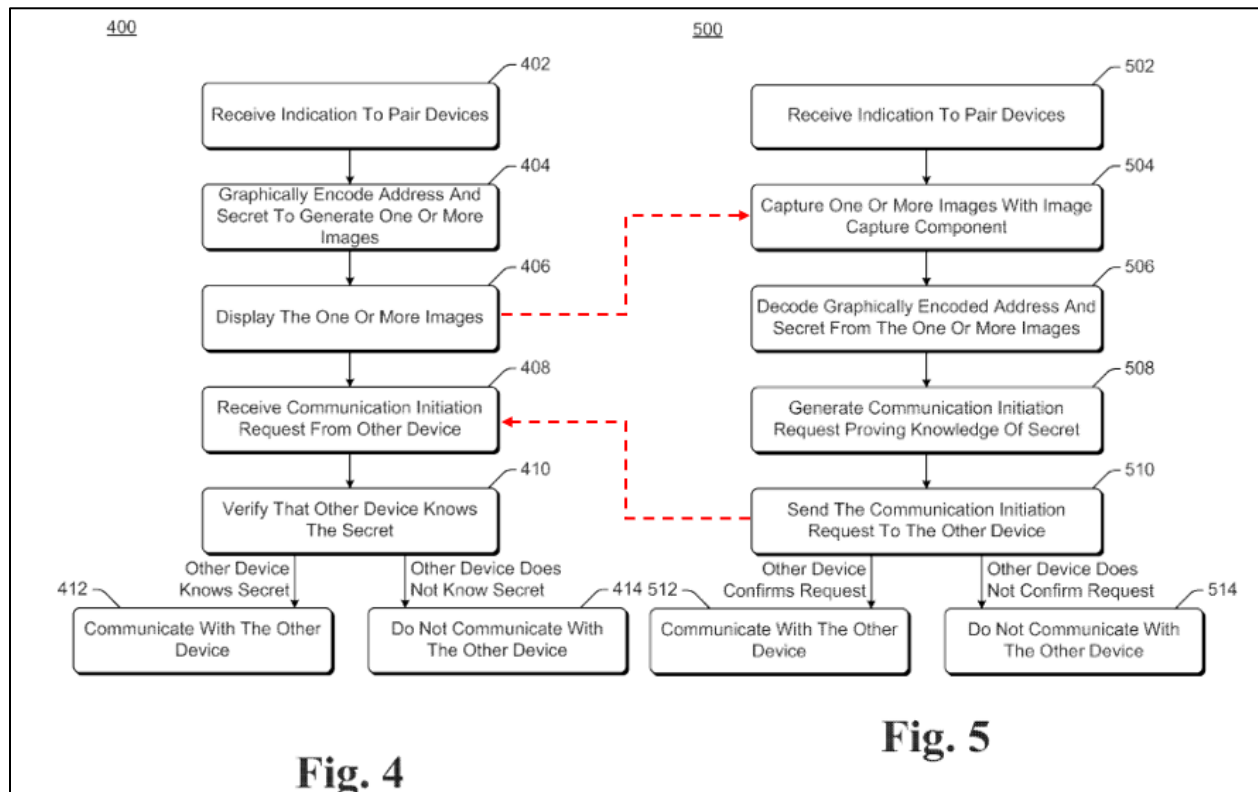
Moreover, the '394 patent claims are directed to the problem of how to efficiently and intuitively establish wireless communications between devices for communicating data using those links. Bishop, Brown, Williams, and Ort are reasonably pertinent to this problem because they disclose techniques for establishing wireless communications links between devices using digital scannable media (e.g., barcodes). *See, e.g.*, EX1004, ¶6; EX1006, ¶49; EX1009, ¶¶41-43; EX1008, ¶¶4-6; EX1003, ¶¶69-71, 189, 203-04, 297. LeBoeuf and Weiss are reasonably pertinent to this problem because they disclose devices that communicate data over wireless communications links. EX1005, ¶¶101-02; EX1007, 2:8-11, 8:11-14; EX1003, ¶¶72-76, 205.

V. GROUND 1: BISHOP IN VIEW OF LEBOEUF RENDERS OBVIOUS CLAIMS 1-3, 5-8, 11-14, AND 16-18.

A. Bishop

Bishop teaches a technique in which “two devices can be easily paired by a user.” EX1004, ¶57; EX1003, ¶¶69-71. Specifically, a first device graphically encodes “an address of a first device” (e.g., IP address) and a secret in an image, and “displays the image of the graphically encoded address and secret.” EX1004, ¶¶12, 57. The second device “captures” the image, “decodes the address and secret,” and “sends a communication initiation request to the first device using the decoded address.” EX1004, ¶12. “If the second device is verified as having

knowledge of the secret, then the first and second devices proceed to communicate with one another; otherwise, the first and second devices do not proceed to communicate with one another.” EX1004, ¶12. This process is shown in Figure 4 (from the perspective of the first device) and Figure 5 (from the perspective of the second device). EX1004, ¶¶59, 67.

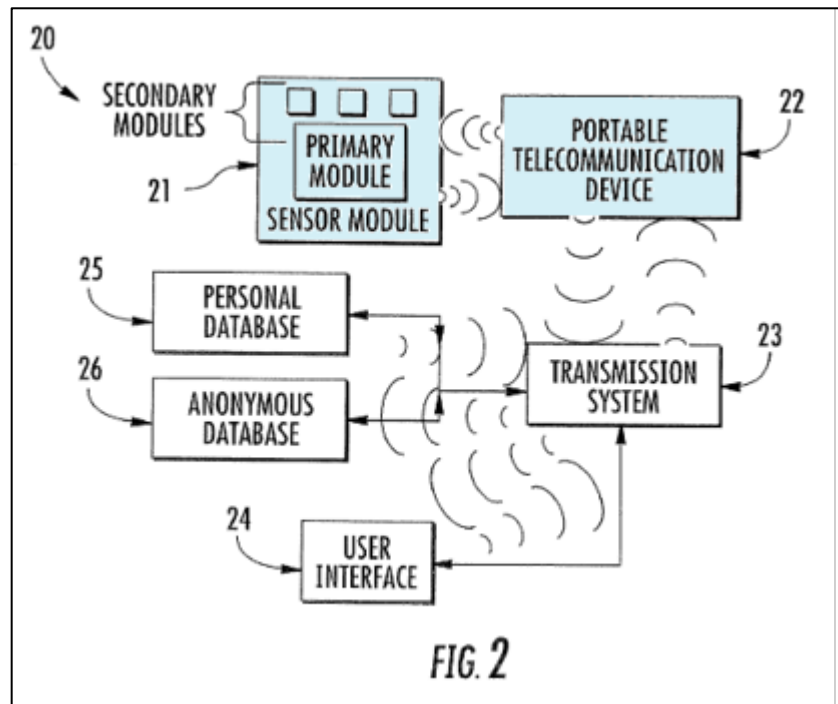


EX1004, Figs. 4-5 (annotated).

B. LeBoeuf

LeBoeuf teaches techniques for “monitoring various physiological and environmental factors.” EX1005, Abstract; EX1003, ¶¶72-76. It discloses a

“wearable monitoring device”² that implements “at least one physiological sensor 11.” EX1005, ¶79. Using these sensors, the wearable monitoring device “monitor[s] the physiological functioning of the body, such as, but not limited to... heart rate, pulse rate, breathing rate, blood flow, heartbeat signatures,” etc. EX1005, ¶80.



EX1005, Fig. 2 (annotated).

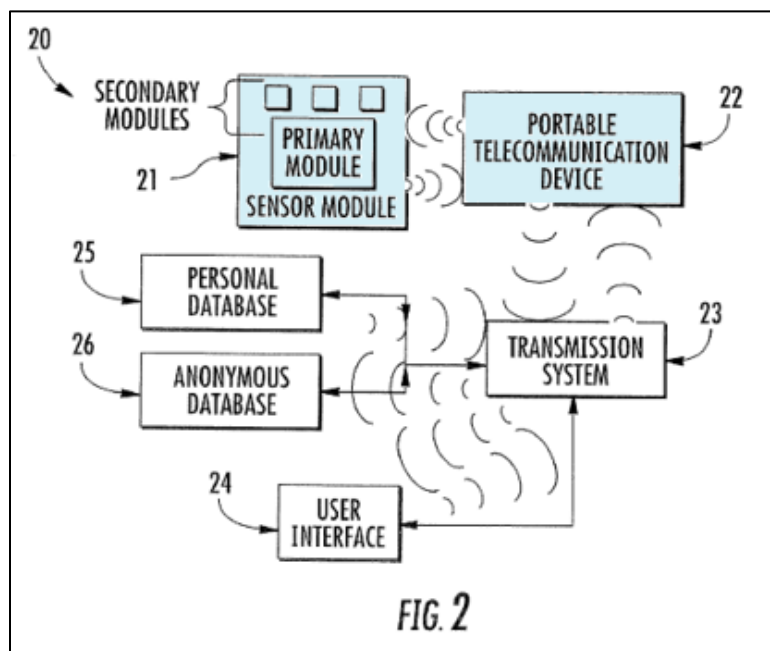
The monitoring device is configured to “communicate[] wirelessly with the portable telecommunication device 22, preferably in an open architecture configuration, such as Bluetooth® or ZigBee.” EX1005, ¶101. For instance, the

² LeBoeuf uses the terms “wearable monitoring device” and “sensor module” interchangeably. EX1005, ¶99.

wearable monitoring device wirelessly transmits information obtained using the physiological sensors to the portable telecommunications device so that this information can be displayed in “an end-user graphical interface” of the device. EX1005, ¶102.

C. Motivation to Combine

A POSA would have found it obvious to combine the teachings of Bishop and LeBoeuf to arrive at the claims of the '394 patent. EX1003, ¶77. LeBoeuf's wearable monitoring device is configured to “communicate[] wirelessly with the portable telecommunication device 22, preferably in an open architecture configuration, such as Bluetooth®.” EX1005, ¶101, *see also* ¶¶5, 58, 148. However, LeBoeuf does not teach how to establish such wireless connection (e.g., Bluetooth link) between these devices.



EX1005, Fig. 2 (annotated).

A POSA would have sought to provide an intuitive, user-friendly process for wirelessly connecting LeBoeuf's devices. EX1003, ¶78. This would have led a POSA to Bishop, which teaches a technique in which "two devices can be easily paired by a user." EX1004, ¶57; EX1003, ¶79. Bishop sought to improve upon conventional pairing processes, which were "cumbersome." EX1004, ¶¶1, 57. As explained above, Bishop thus describes a technique in which "two devices can be easily paired" using a barcode that stores information needed to establish communications between the two devices. EX1004, ¶57.

A POSA would have found it obvious to adapt LeBoeuf's devices to establish a wireless communication link using Bishop's pairing process. EX1003, ¶80. Bishop provides express motivation, explaining that its technique avoids the "cumbersome processes for configuring the devices to be able to communicate" found in conventional pairing processes. EX1004, ¶57. Indeed, such conventional processes could be "time consuming and cumbersome," and could lack "user friendliness." EX1004, ¶1. Bishop's process, on the other hand, is performed "without the need for any additional input by the user," and thus does not require users to make "numerous settings or other configuration changes" to the devices. EX1004, ¶¶1, 57. A POSA would have thus been motivated to implement Bishop's technique in LeBoeuf to provide an efficient, user-friendly process for "easily pair[ing]" devices. EX1004, ¶57; EX1003, ¶¶80-81.

Bishop’s process also provides strong security through use of its “shared secret.” EX1004, ¶40. In particular, Bishop includes a “secret” in the graphically encoded data and requires the second device to “prove it has knowledge of the secret” before the communication link is established. EX1004, ¶¶40, 56. This ensures that “the device from which the communication initiation request is received is indeed a device to which the graphically encoded secret was displayed.” EX1004, ¶¶40, 45, 56. Bishop’s process thus enables users to ensure that the devices being paired are the correct devices, and not malicious actors. EX1003, ¶82.

A POSA would have been further motivated to combine Bishop and LeBoeuf to implement such a *secure* pairing process. This is particularly so because LeBoeuf’s wearable monitoring device collects “personal and private [] information” regarding user health. EX1005, ¶17. A POSA would have recognized the importance of a secure pairing process in LeBoeuf to prevent malicious actors from obtaining such information. EX1003, ¶83.

A POSA would have had a reasonable expectation of success in combining the references to arrive at the claims. EX1003, ¶87. For instance, Bishop’s techniques are “platform-independent,” and “can be implemented on a variety of commercial computing platforms,” even on “low-resource device[s] with limited memory and/or processing resources.” EX1004, ¶¶15, 81. Bishop’s pairing process

also applies to “various usage scenarios,” and can be implemented “[a]nywhere communication between two devices is desired.” EX1004, ¶58. In other words, Bishop’s techniques were designed and advertised to improve devices like LeBoeuf’s.

Indeed, LeBoeuf’s wearable monitoring device can take a “variety of form factors,” including a “wrist-watch,” and the portable telecommunication device, can be “any portable device, such as a cell phone (which includes a ‘smartphone’), PDA, laptop computer, Blackberry,” etc. EX1005, ¶¶101, 141. Moreover, LeBoeuf’s data is transferrable over a wireless communication link. EX1005, ¶102. It was within a POSA’s skill to implement Bishop’s techniques in LeBoeuf’s devices. EX1003, ¶¶84-96.

It was within a POSA’s skill to adapt LeBoeuf’s devices to implement Bishop’s hardware and software components in LeBoeuf’s devices to the extent necessary to implement Bishop’s device pairing process. *Id.* For instance, a POSA would have readily been able to implement Bishop’s image capture component, device pairing modules, display components, communication circuitry, processing devices, memory devices, or other suitable components in LeBoeuf’s devices. *Id.*; *see also* EX1004, ¶¶15, 20, 31-33, 73-76, Fig. 6. This would amount to, at most, a simple substitution of known electronic components in conventional manners to achieve predictable results. *Id.*

For instance, LeBoeuf’s wearable monitoring device includes a “visual monitor” display. EX1005, ¶105. It was within a POSA’s skill to implement Bishop’s graphical-pairing approach using LeBoeuf’s visual monitor—doing so would have required routine software development. EX1003, ¶¶86, 95. To the extent any hardware modifications were required, these would be achieved using simple substitutions of known electronic components (Bishop’s screen, or any other like it) in an existing application (LeBoeuf’s device). *Id.*; EX1004, ¶¶23, 30.

These adaptations would have been straight forward and readily implementable by a POSA. EX1003, ¶¶84-86, 88-90, 96. Indeed, as explained, Bishop’s technique “supports various usage scenarios,” and can be implemented even by “low-resource device[s].” EX1004, ¶¶15, 58. In view of this, a POSA would have recognized that the combination of Bishop and LeBoeuf would merely amount to the use of Bishop’s known technique (encoding wireless pairing information in barcodes) to improve LeBoeuf’s similar devices in the same way (to efficiently and securely establish wireless communications). EX1003, ¶96.

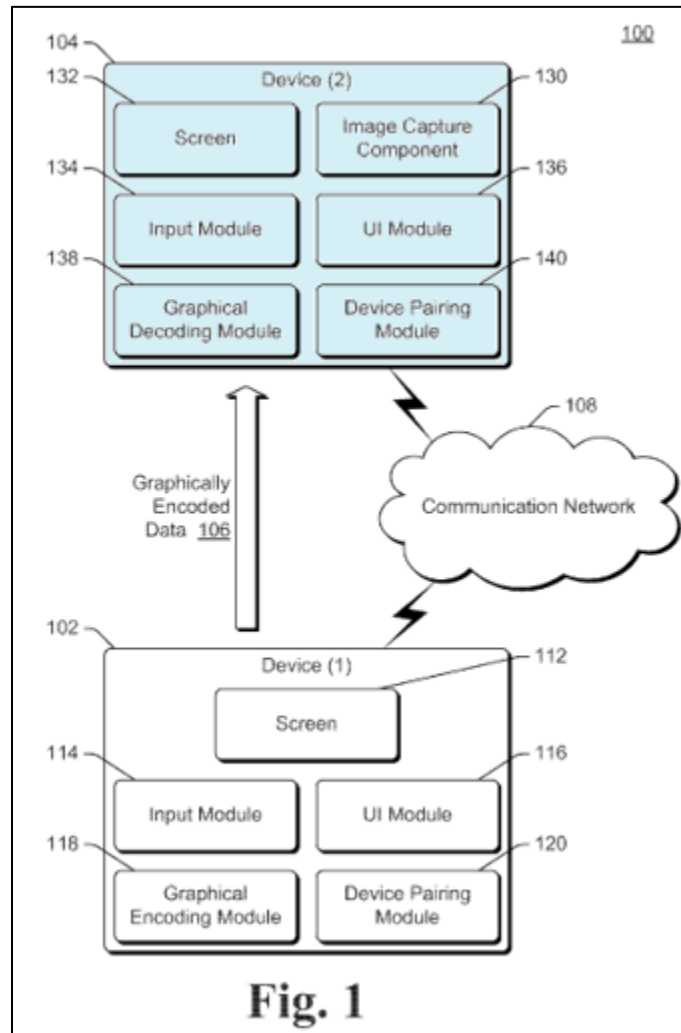
D. Independent Claims

1. Claim 1

- a. [1.P] A mobile device, wherein the mobile device is comprised of:**

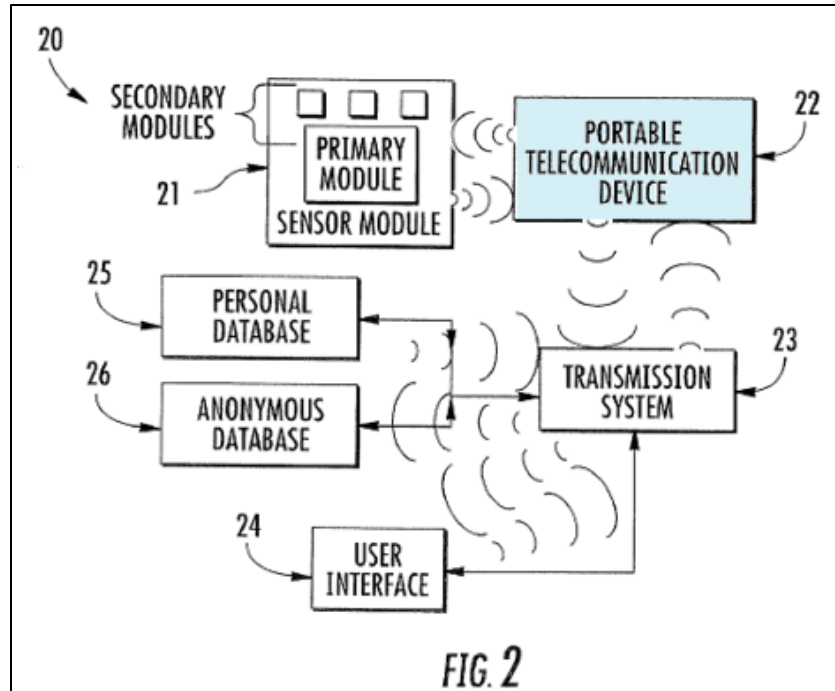
Bishop discloses a “device 104” (*mobile device*), which can be, for instance, a “handheld computer,” a “personal digital assistant (PDA),” a “mobile station,” or

a “cellular or other wireless phone.” EX1004, ¶15; EX1003, ¶97.



EX1004, Fig. 1 (annotated).

LeBoeuf teaches a “portable telecommunication device 22” (*mobile device*), which can be “a cell phone (which includes a ‘smartphone’), PDA, laptop computer, Blackberry,” etc.



EX1005, Fig. 2 (annotated).

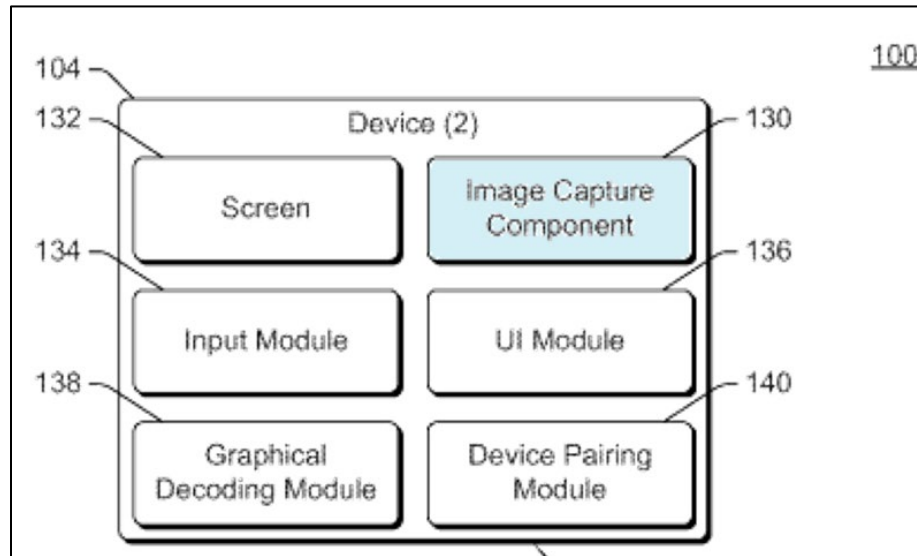
As explained in Section V.C, the combined Bishop-LeBoeuf system includes a mobile device taught by the combination of Bishop (e.g., mobile device 104) and LeBoeuf (e.g., telecommunication device 22) that communicates wirelessly with LeBoeuf’s wearable sensor module 21³. EX1003, ¶¶97-99. As explained below, the combined mobile device teaches the componentry and functionality of the claimed *mobile device*, as explained in detail below.

b. [1.1] at least one camera sensor, included within the mobile device;

Bishop’s mobile device 104 includes an internal “image capture component”

³ LeBoeuf uses the terms “sensor module and “wearable monitoring device” interchangeably. EX1005, ¶99.

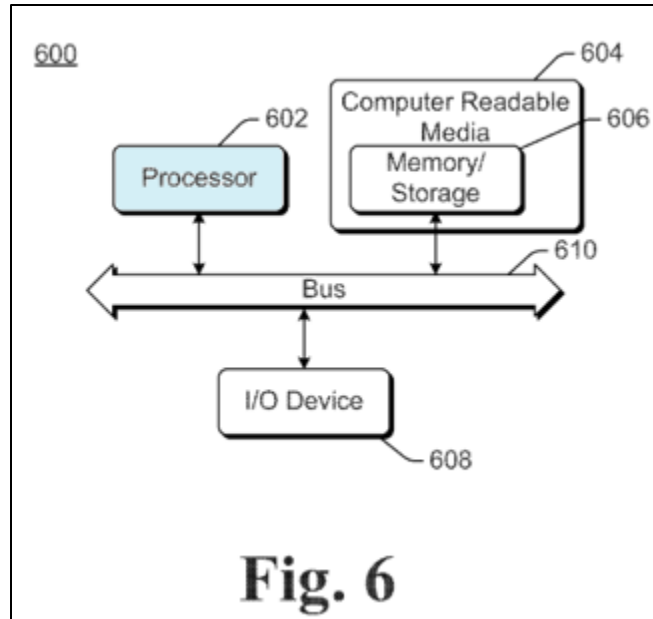
(*camera sensor*) that “captures images.” EX1004, ¶33; EX1003, ¶100. The image capture component is “a camera or digital camera” implemented using, for instance, “CCD (charge coupled device) technology, CMOS (complementary metal oxide semiconductor) technology, and so forth.” EX1004, ¶33.



EX1004, Fig. 1 (reproduced in part, annotated).

c. [1.2] at least one processor in signal communication with the at least one camera sensor;

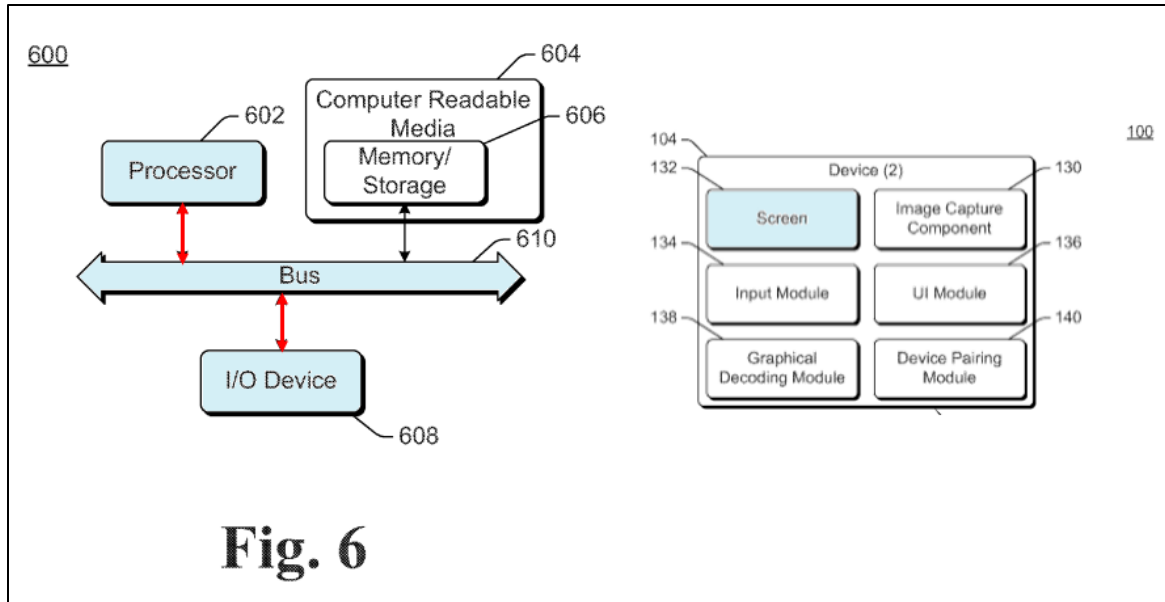
Bishop’s mobile device 104 includes “one or more processing units 602” that execute “instructions” for implementing the mobile device’s functionality. EX1004, ¶¶74, 76. These processors are *in signal communication with* the image capture component (*camera sensor*) because they cause it to “capture[] images for use by” device 104’s processor in implementing the pairing process, as described below. EX1004, ¶¶33, 69, 74, 76; EX1003, ¶102.



EX1004, Fig. 6 (annotated).

- d. [1.3] a display in signal communication with the at least one processor;

Bishop's mobile device 104 includes a "screen 132," which is a "display component." EX1004, ¶¶20, 31-32. The screen 132 is *in signal communication* with the one or more processing units 602 (*at least one processor*) because the one or more processing units cause the screen to, for instance, display a "user interface." EX1004, ¶¶32, 74, 77; EX1003, ¶104.

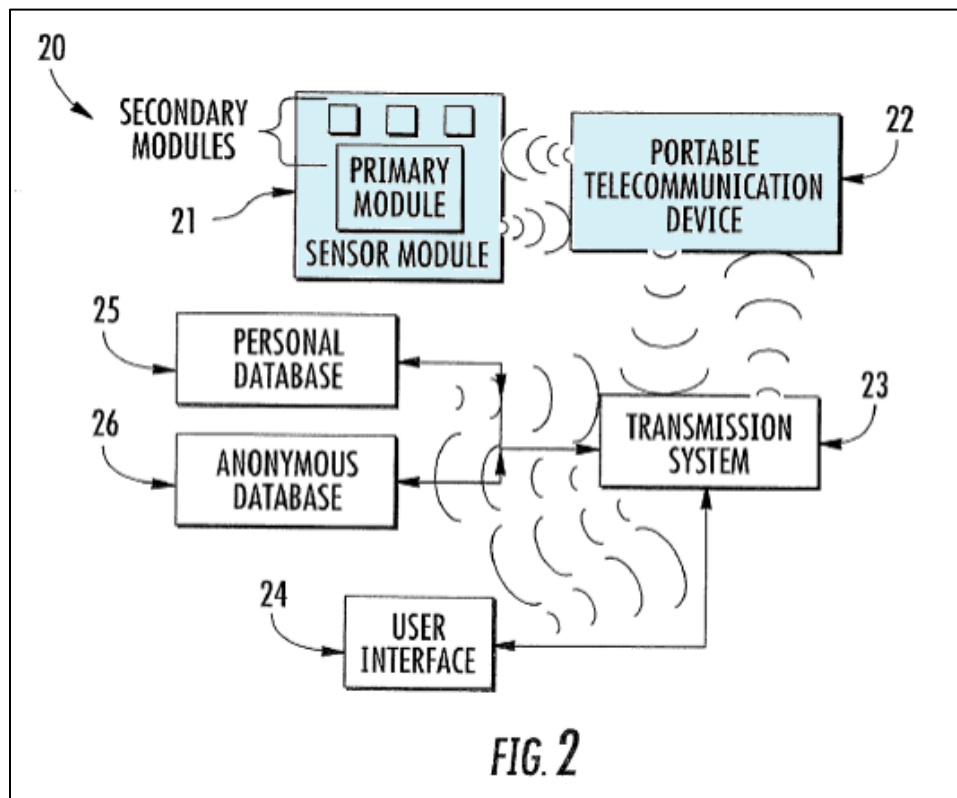


EX1004, Figs. 6, 1 (excerpt) (annotated).

- e. **[1.4] communication circuitry configured for wireless communication with an external wearable activity tracking device;**

Bishop’s mobile device 104 includes a “device pairing module 140” that “manages... the pairing or initiation of communication between devices.” EX1004, ¶39. The device pairing module is implemented as combination of software and “hardware (e.g., fixed logic circuitry).” EX1004, ¶¶31, 39, 67, 81. The device 104 also includes a “network card.” EX1004, ¶77. The device 104 also includes “communications... modules for wirelessly sending data to and/or receiving data from other devices.” EX1004, ¶17, *see also* ¶18. Moreover, LeBoeuf’s portable telecommunications device includes *communication circuitry* for communicating with the wearable monitoring device using an “open architecture configuration, such as Bluetooth®.” EX1005, ¶¶101-02; EX1003, ¶106.

As explained in Section V.C, in the Bishop-LeBoeuf system, the combined mobile device communicates with a wearable monitoring device/sensor module, as taught by LeBoeuf. *See* EX1005, ¶101. The wearable monitoring device is an *external wearable activity tracking device* as claimed because it is “worn by” the user, includes “at least one physiological sensor” and “at least one environmental sensor,” and is configured to measure “basic vital signs” of the user, such as “breathing rate, pulse rate, and the like.” EX1005, ¶¶14, 79, 97; EX1003, ¶107. It is also configured “to track the caloric intake, health, and physical activity of dieters,” and “to monitor the diet, physical activity, health, and environment of athletes.” EX1005, ¶110, *see also* ¶112.

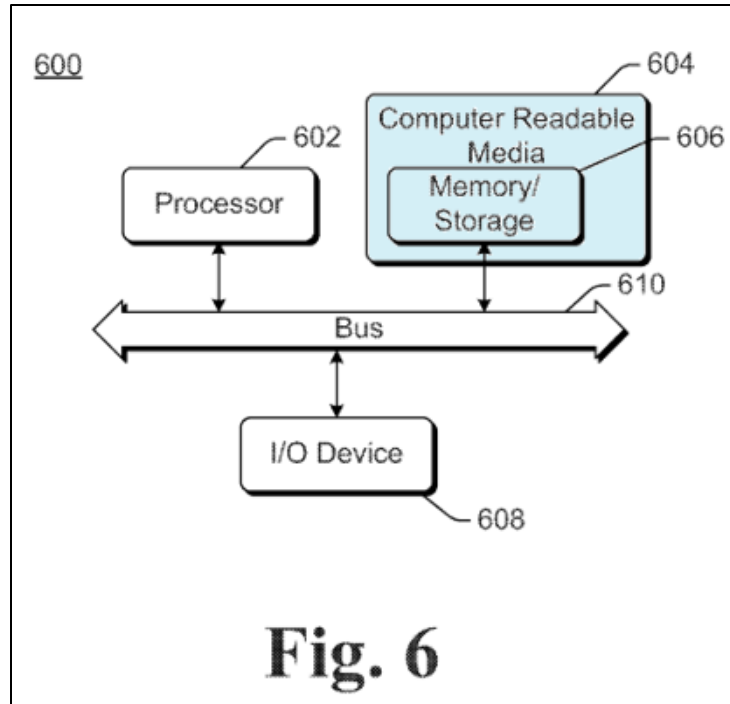


EX1005, Fig. 2 (annotated).

In the combined system, the Bishop-LeBoeuf mobile device would wirelessly communicate with the wearable monitoring device via the device pairing module and/or communications modules (*communication circuitry*). Thus, the combination of Bishop and Leboeuf teaches this element. EX1003, ¶108.

- f. [1.5] memory, included within the mobile device, associated with one or more processors and configured to store software instructions, which, when executed by the one or more processors, cause the one or more processors to perform operations comprising;**

Bishop's device 104 includes "one or more memory and/or storage components 606" that store "instructions that are executed by one or more processors or controllers." EX1004, ¶¶31, 67, 74, 76, 81. When *executed by the one or more processors* 602 of the device, these *software instructions* cause the processors to implement the claimed wireless pairing process, as described in more detail below. EX1003, ¶109.



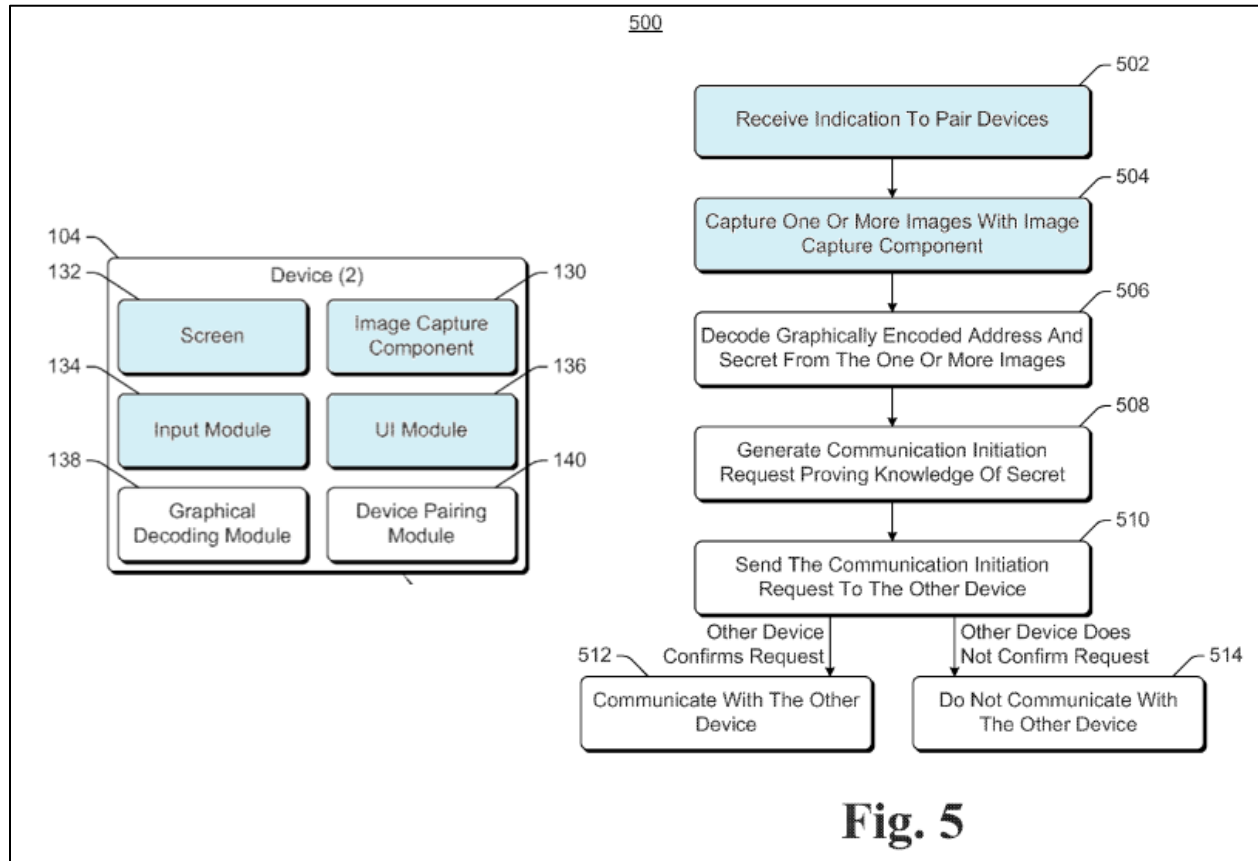
EX1004, Fig. 6 (annotated).

- g. [1.6] Generate, via the mobile device processor, an optical scanning user interface on the mobile device display;**

Bishop's device 104 is configured to capture an image of "graphically encoded data" that is displayed on the screen 112 of corresponding device 102. EX1004, ¶¶16, 23, 39; *see also* ¶¶31, 67. Device 104 captures this graphically encoded data by generating an *optical scanning user interface on the mobile device display*. EX1003, ¶¶111-12.

In particular, device 104's *processor* generates a user interface corresponding to a "camera mode" (*optical scanning user interface*) in response to a "capture request input by a user via input module 134" of the device. EX1004, ¶34, *see also* ¶32. The camera mode interface presents on device 104's display "a

view being seen by image capture component 130,” which enables the user to
“position device 104 appropriately” to capture the image. EX1004, ¶34.



EX1004, Figs. 1 (excerpt), 5 (annotated).

- h. [1.7] Detect, via the at least one mobile device camera sensor and the optical scanning user interface, a color coded digital scannable media from a display included within the external wearable activity tracking device,**

As explained for element [1.6], Bishop’s device 104 captures an image of “graphically encoded data” that is displayed on the screen of corresponding device 102. EX1004, ¶¶16, 34, 39, *see also* ¶¶31, 67. The graphically encoded data is a “high capacity color barcode (HCCB),” which as Dr. Shenoy explains, is a *color coded digital scannable media* as claimed because it encodes data via different

colors, such that the colors themselves encode data. EX1004, ¶¶23, 30; EX1003, ¶114. As Dr. Shenoy further explains, HCCBs were well-known and commercialized prior to 2011. EX1003, ¶¶45-55, 114.

The device 104's *processor detects* the displayed HCCB. For instance, the device 104 can “distinguish images that graphically encode data from images that do not graphically encode data,” for instance, “based on a known signature or other value encoded into each graphically encoded image.” EX1004, ¶35, *see also* ¶36. This detection occurs via the image capture component (*camera sensor*), which captures the image, and the camera mode user interface (*optical scanning user interface*), which displays the interface for capturing the image. EX1004, ¶34; EX1003, ¶115.

As explained in Section V.C, in the combined system, Bishop-LeBoeuf's mobile device establishes communication with the wearable monitoring device (*external wearable activity tracking device*) using Bishop's barcode scanning process. The monitoring device generates and displays the HCCB that is captured by the mobile device in order to establish communications between the devices. EX1003, ¶116.

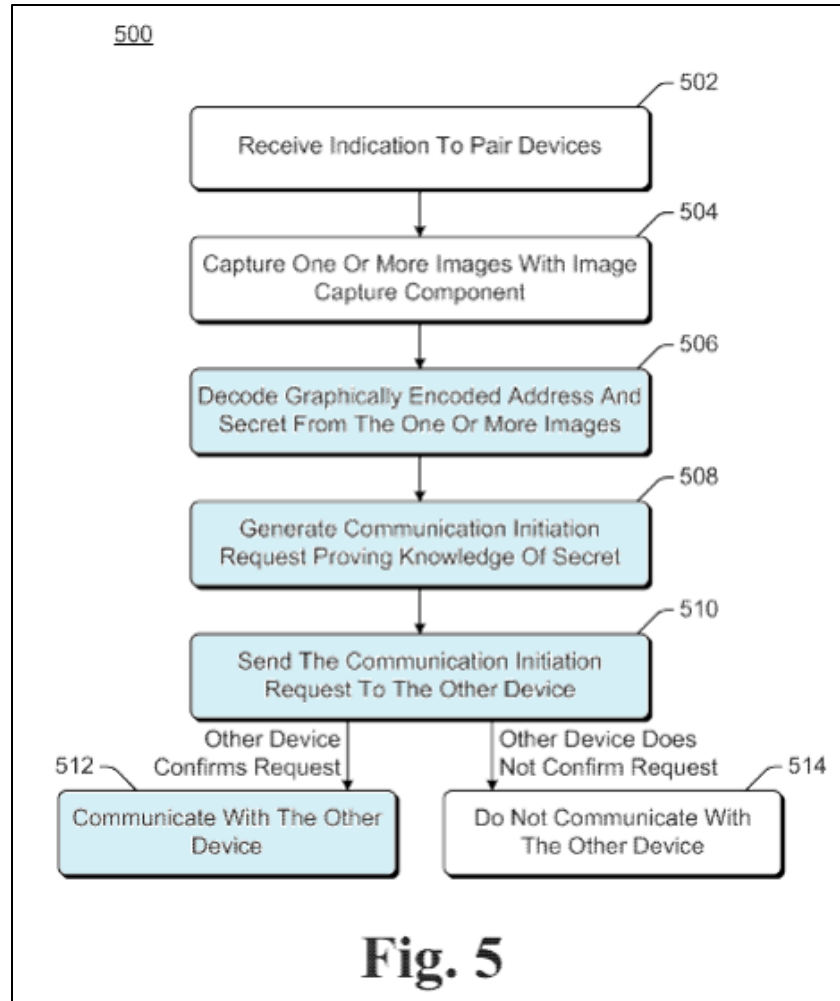
- i. **[1.8] wherein the color coded digital scannable media contains wireless pairing information associated with the external wearable activity tracking device;**

Bishop's HCCB encodes and contains *wireless pairing information* in the

form of “an address of device 102.” EX1004, ¶¶24, 56. The address is “an IP (Internet Protocol) address” or other address depending “on the protocol used by communication network 108.” EX1004, ¶24. It comprises *wireless pairing information* because it “identifies device 102 on communication network 108,” and enables “other devices on network 108 [to] send messages to device 102.” EX1004, ¶18; EX1003, ¶¶118-19. The address is thus “used to initiate communication between devices 102 and 104.” EX1004, ¶23.

The HCCB encodes the address and (optionally) a “secret.”⁴ EX1004, ¶¶24, 56. When the device 104 obtains and decodes the address and secret, it “generates a communication initiation request that targets (e.g., is addressed to) device 102.” EX1004, ¶¶40-41. Upon receiving the communication initiation request, the device 102 “verifies that the communication initiation request proves that device 104 has knowledge of the secret,” and then “proceed[s] with communicating with device 104.” EX1004, ¶¶43-44. At this point, the devices are paired. EX1004, ¶57, *see also* ¶18 (“devices 102 and 104 are paired together and able to communicate with one another after the initiation process”).

⁴ Petitioner does not rely on the secret as the claimed *wireless pairing information*.

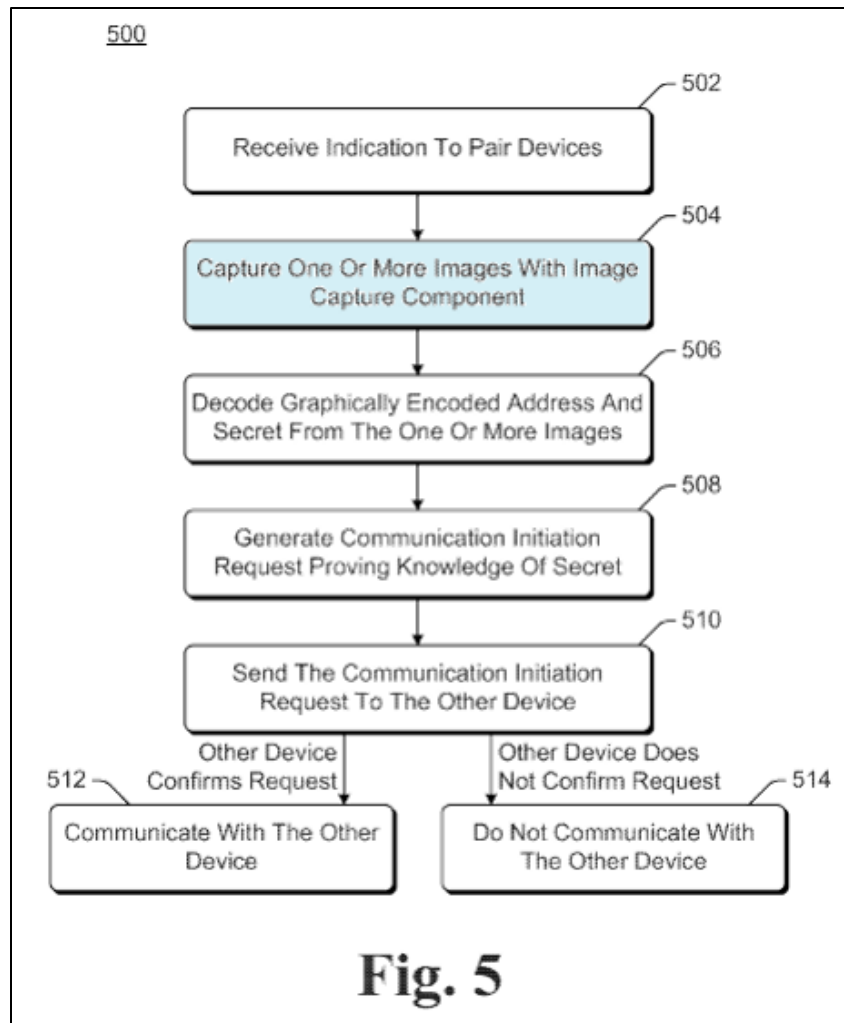


EX1004, Fig. 5 (annotated).

Thus, the address encoded in the HCCB comprises *wireless pairing information* associated with the device 102. EX1003, ¶¶119-20. As explained in Section V.C, in the combined Bishop-LeBoeuf system, the address and secret are encoded and displayed by the wearable monitoring device (*external wearable activity tracking device*) in order to wirelessly pair the mobile device with the wearable monitoring device. In this system, the address is an address of the wearable monitoring device to initiate communications between the wearable monitoring device and the mobile device. EX1004, ¶23.

- j. **[1.9] Optically obtain, via the at least one mobile device camera sensor, the wireless pairing information from the color coded digital scannable media;**

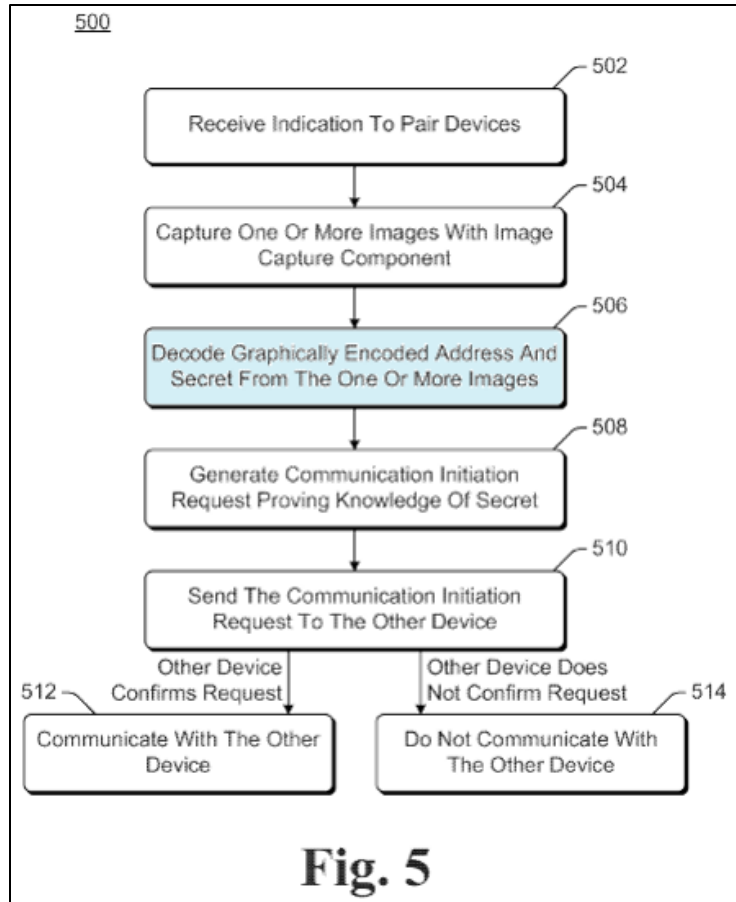
As explained for element [1.8], Bishop's device 104 captures an image depicting the HCCB displayed by device 112 and determines that the image "graphically encode[s] data." EX1004, ¶¶35, 69, *see also* ¶¶31, 67. This process comprises *optically obtaining the wireless pairing information from the color coded digital scannable media* because the device 104's *processor* uses the image capture component (*camera sensor*) to capture (*optically obtain*) the encoded address (*wireless pairing information*) and secret stored in the HCCB (*color coded digital scannable media*). EX1003, ¶122.



EX1004, Fig. 5 (annotated).

k. [1.10] Process, via the at least one mobile device processor, the wireless pairing information;

Once Bishop’s mobile device 104 captures the image depicting the HCCB, it *processes*, via its processor, the information encoded in the HCCB (*wireless pairing information*). See EX1004, ¶¶31, 67. For instance, the device *processes* the *wireless pairing information* by analyzing and “decod[ing] the data encoded in the images[]” (i.e., in the HCCB) using a determined “graphical decoding technique[.]” EX1004, ¶¶37, 39, *see also* ¶70; EX1003, ¶¶124-125.



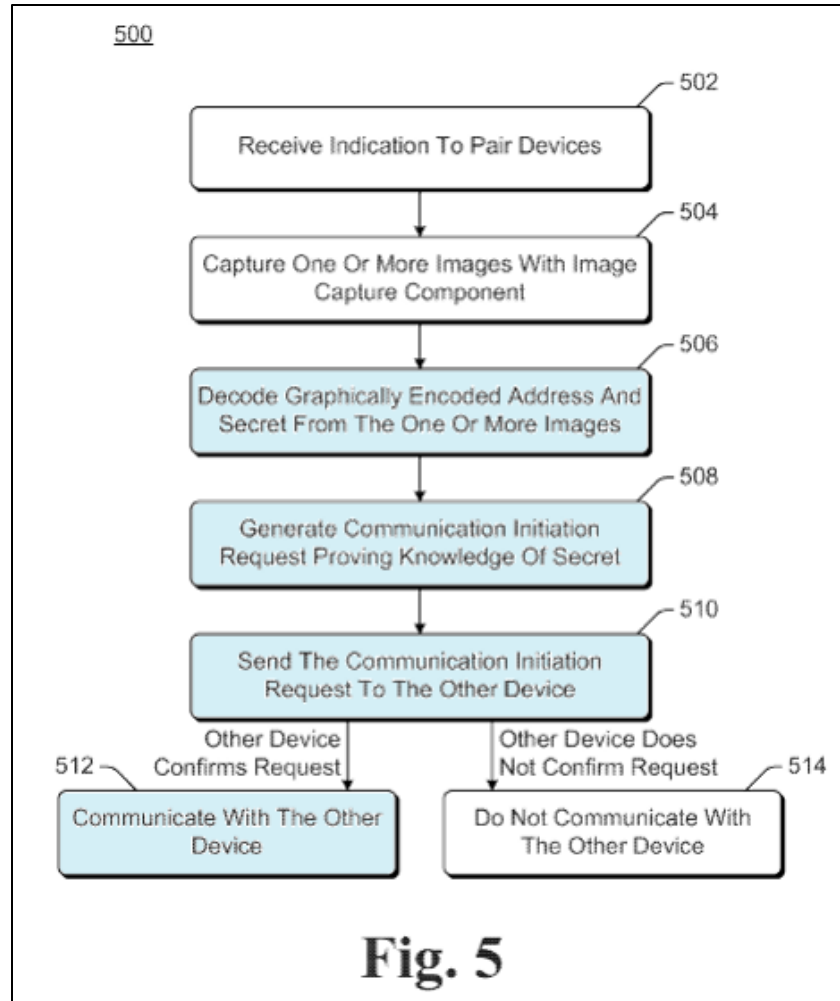
EX1004, Fig. 5 (annotated).

- I. [1.11] Establish, via the at least one mobile device processor, a wireless communications link with the external wearable activity tracking device responsive to the processing of the wireless pairing information;

As explained above, when Bishop’s device 104 obtains and decodes (*processes*) the address and secret, it “generates [via its processor] a communication initiation request that targets (e.g., is addressed to) device 102.” EX1004, ¶40, *see also* ¶¶31, 67. The communication initiation request includes device 104’s address (e.g., IP address). EX1004, ¶41. Upon receipt, the device 102 “verifies that the communication initiation request proves that device 104 has

knowledge of the secret,” and then “proceed[s] with communicating with device 104.” EX1004, ¶¶43-44. At this point, the devices are “paired.” EX1004, ¶57.

The address is thus “used to initiate communication between devices 102 and 104” (*establish a wireless communications link*). EX1004, ¶23. Once established, the devices “wirelessly send[] data to and/or receiv[e] data from” one another. EX1004, ¶17, *see also* ¶¶44, 58, 80. The communication between devices is established via the device 104’s processor and using the graphically encoded data decoded from the HCCB (*responsive to the processing of the wireless pairing information*). EX1003, ¶¶127-28. Indeed, the device 104 uses the address to generate a “communication initiation request” in order to “pair” devices 102 and 104. EX1004, ¶¶18, 76. Once the devices are “paired together,” they are “able to communicate with one another” via communications network 108. EX1004, ¶18. Thus, Bishop teaches *establishing a wireless communications link* because its process initiates communications between devices 102 and 104 and pairs the devices. EX1004, ¶¶18, 23, 76; EX1003, ¶¶128-30.



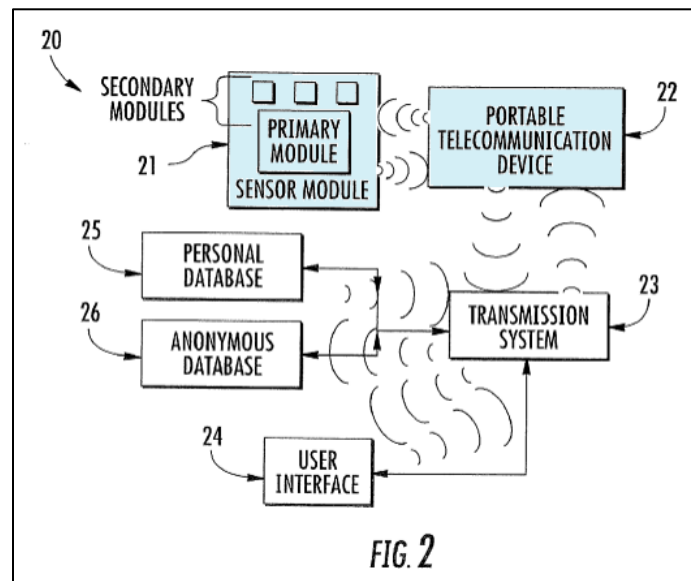
EX1004, Fig. 5 (annotated).

As explained in Section V.C, in the combined Bishop-LeBoeuf system, the mobile device would be paired with the wearable monitoring device (*external wearable activity tracking device*). As described, the mobile device would capture an image of the graphically encoded data (HCCB) displayed by the wearable monitoring device and would generate and send the communication initiation request to the wearable monitoring device to establish the wireless connection between the devices. The wireless communication link would be, for instance, a Bluetooth link, as taught by LeBoeuf. EX1005, ¶¶101-02; EX1003, ¶¶88-90.

- m. **[1.12] Receive, via the wireless communications link, at least one of activity related information and bio-metric information generated by the external wearable activity monitoring device;**

Bishop-LeBoeuf teaches this element. EX1003, ¶131.

LeBoeuf's monitoring device/sensor module (*external wearable activity monitoring device*) "communicates wirelessly with the portable telecommunication device 22" (*mobile device*), "preferably in an open architecture configuration, such as Bluetooth®" (*via a wireless communications link*). EX1005, ¶101. The portable telecommunication device receives, from the wearable monitoring device, sensor data "relating [to] health and environment, as well as real-time biofeedback and the like." EX1005, ¶102, *see also* ¶¶5 ("Health and environmental information, sensed by the sensors is transmitted wirelessly, in real-time, to a recording device, capable of processing and organizing the data into meaningful displays"), 87, 129, 137.



EX1005, Fig. 2 (annotated).

This transmitted sensor data includes *activity related information and biometric information*⁵ generated by the wearable monitoring device. For instance, the wearable monitoring device includes “physiological sensor[s] 11... for monitoring the physiological functioning of the body, such as... heart rate, pulse rate, breathing rate, blood flow, heartbeat signatures,” etc. EX1005, ¶¶79-80. The physiological sensors thus collect, process, and transmit such data related to “basic vital signs.” EX1005, ¶97; EX1003, ¶¶132-33.

The physiological sensors are also configured to generate additional *activity related information* such as, “physical activity, caloric intake... physical and/or psychological stress levels and/or stress level indicators... physical exertion... sleep patterns, hunger and/or thirst,” etc. EX1005, ¶6, *see also* ¶163; EX1003, ¶134. For instance, the monitoring device includes “accelerometers” that “measur[e] body motion in real-time,” and “gage the distance a person has traveled.” EX1005, ¶¶120, 170. The monitoring device also includes “a variety of other body motion sensors” to “monitor footsteps.” EX1005, ¶170, *see also* ¶159.

As explained, in the Bishop-LeBoeuf system, the wearable monitoring

⁵ The '394 patent provides examples of “biometric” characteristics, such as “body weight, body fat %, etc” and “fingerprint, heart rate, DNA, etc”. EX1001, 6:65-7:9, 21:60-66.

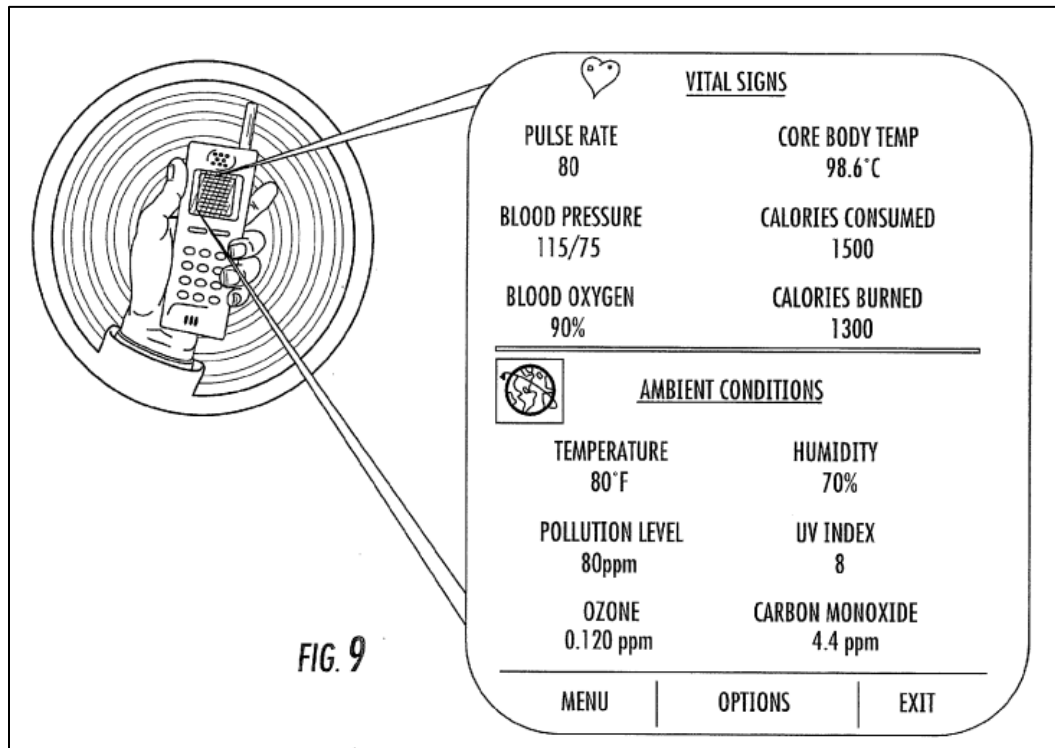
device would generate such information and wirelessly transmit it to the mobile device. In the combined system, this information would be transmitted over the *wireless communications link* established using Bishop's pairing process. This is consistent with Bishop's teaching that, once communication is established between devices 102 and 104, they can "transfer data (e.g., a report, song, or other data [])," "control information, and so forth to one another." EX1004, ¶¶44, 58. The device 104's *processor* receives this information *via the wireless communication link* established using Bishop's process. See EX1004, ¶¶31, 67. Thus, the combination of Bishop and LeBoeuf teaches this element. EX1003, ¶135.

n. [1.13] Display, via the mobile device display, at least one of the activity related information and the biometric information.

Bishop-LeBoeuf teaches this element. EX1003, ¶¶136-38.

LeBoeuf's portable telecommunication device 22 (*mobile device*) includes "an end-user graphical interface... such that data from the wearable sensor module 21 can be stored, analyzed, summarized, and displayed on the portable telecommunication device 22." EX1005, ¶102. "For example, charts relating [to] health and environment, as well as real-time biofeedback and the like, can be displayed on" the user interface of the portable telecommunication device. EX1005, ¶102. An example user interface displayed on the portable telecommunication device is shown in Figure 9. EX1005, ¶¶41, 97, *see also* ¶106,

Figs. 3, 10.



EX1005, Fig. 9.

As shown, the user interface displays “vital signs” including pulse rate, core body temperature, blood pressure, etc. These “vital signs” were measured by the monitoring device’s “physiological sensors,” and transmitted to the portable telecommunication device, in “raw or processed” form, for display by the portable telecommunication device. EX1005, ¶¶79, 101-02, 129, 141.

As explained, in the Bishop-LeBoeuf system, the wearable monitoring device would collect and generate basic vital signs and would transmit them to the mobile device for display by the mobile device, via its *processor*. EX1003, ¶¶136-38. This would include displaying a user interface similar to that shown in

LeBoeuf's Figure 9 depicting "vital signs collected by" the monitoring device.

EX1005, ¶97.

2. Claim 11

- a. [11.P] A system for establishing a wireless communications link between a wearable activity tracking device and a mobile device, the system comprised of:**

The combination of Bishop and LeBoeuf teaches this element. EX1003, ¶139. As explained in Section V.C, Bishop teaches a *system for establishing a wireless communications link between two mobile devices*. EX1004, ¶12. LeBoeuf teaches a system in which a wearable monitoring device (*wearable activity tracking device*) communicates wirelessly with a portable telecommunication device (*mobile device*). EX1005, ¶101. In the combined system, Bishop's wireless communication link establishment process is used to establish the wireless communications link between the wearable monitoring device and a mobile device, as taught by the combination of LeBoeuf and Bishop. EX1003, ¶139.

- b. [11.A.1] The wearable activity tracking device, wherein the wearable activity tracking device is comprised of;**

LeBoeuf teaches this element for the reasons provided for element [1.4]. EX1005, ¶¶14, 79, 97; EX1003, ¶140.

- c. [11.A.2] A display device;**

LeBoeuf's wearable monitoring device includes a "visual monitor" for

displaying a user interface. EX1005, ¶105. Moreover, as explained in Section V.C, in the combined Bishop-LeBoeuf system, the wearable monitoring device would include a *display device*, as taught by the combination of Bishop and LeBoeuf, that displays “graphically encoded data” (i.e., via an HCCB). *See* EX1004, ¶¶20, 23, 30; EX1003, ¶141; *see also* discussion for element [1.7].

d. [11.A.3] At least one of an activity tracking capability and an embedded bio-metric monitoring sensor associated with the wearable activity tracking device;

As explained for elements [1.4] and [1.12], LeBoeuf’s wearable monitoring device 10 comprises *embedded bio-metric monitoring sensors* in the form of “physiological sensor[s] 11... for monitoring the physiological functioning of the body.” EX1005, ¶¶79-80. It also comprises *an activity tracking capability* via sensors that are configured to monitor, for instance, “physical activity, caloric intake... physical and/or psychological stress levels and/or stress level indicators... physical exertion... sleep patterns, hunger and/or thirst,” etc. EX1005, ¶6, *see also* ¶¶14, 79, 97, 110, 112, 163; EX1003, ¶142-44. For instance, it includes “one or more accelerometers” that “measur[e] body motion in real-time,” and “gage the distance a person has traveled.” EX1005, ¶¶120, 170, *see also* ¶159.

e. [11.A.4] Wireless communication circuitry, wherein the wireless communication circuitry is configured to establish a wireless communications link with the mobile device;

LeBoeuf’s wearable monitoring device includes “telemetric modules”

(*wireless communication circuitry*), such as a Bluetooth module comprising a “Bluetooth chip.” EX1005, ¶148, Fig. 8. Using such telemetric modules, the wearable monitoring device “communicates wirelessly with the portable telecommunication device 22” (*mobile device*). EX1005, ¶101. To do so, the telemetric module establishes a *wireless communications link* with the portable telecommunications device, “preferably in an open architecture configuration, such as Bluetooth® or ZigBee.” EX1005, ¶101, *see also* ¶58. Moreover, as explained for element [1.4], Bishop’s device includes *wireless communication* circuitry in the form of a “device pairing module,” “network card,” and “communications... modules” for establishing wireless communications links. EX1004, ¶¶17, 19, 24, 77.

As explained in Section V.C, in the Bishop-LeBoeuf system, the wearable monitoring device establishes the *wireless communications link* with the mobile device using Bishop’s communication initiation process. It does so using its *wireless communications circuitry*. Thus, the combination of Bishop and LeBoeuf teach this element. EX1003, ¶¶146-49.

- f. **[11.A.5] at least one processor with software, wherein the at least one processor is associated with a memory device and wherein the at least one processor is in signal communication with the display device and the wireless communication circuitry;**

As explained in Section V.C, the Bishop-LeBoeuf system adapts LeBoeuf’s

wearable monitoring device to implement Bishop's device pairing process. In the combined system, the wearable monitoring device comprises *at least one processor with software*. For instance, LeBoeuf's wearable monitoring device comprises a "microprocessor[]" for implementing the functionality of the device. EX1005, ¶¶59, 87. Bishop's mobile device 102 further comprises "one or more processors or processing units 602" that executes "software" comprising instructions for implementing Bishop's communication initiation process, such as the process 400 of Figure 4. EX1004, ¶¶59, 73-74, 76.

As explained in Section V.C , in the combined Bishop-LeBoeuf system, the processor(s) of the wearable monitoring device are *associated with a memory device* in the form of "one or more computer readable media 604 that can include one or more memory and/or storage components 606." EX1004, ¶74; EX1005, ¶113. The processor(s) are further *in signal communication with the display device* because they cause the display device to "output[] a user interface for display," and to display images depicting graphically encoded data. EX1004, ¶¶22, 27; EX1003, ¶¶150-51. The processor(s) are further *in signal communication with the wireless communication circuitry* because they cause the wireless communication circuitry to communicate with the mobile device 104. EX1004, ¶44; EX1005, ¶101.

- g. [11.A.6] the memory device, wherein the memory device is configured to store wireless pairing information associated with the wireless communication circuitry;**

As explained for element [1.8], Bishop teaches the claimed *wireless pairing information associated with the wireless communication circuitry* through its “address of device 102” encoded in the HCCB. EX1004, ¶¶23-24; EX1003, ¶153. Device 102 stores this information in “a setting or configuration store of device 102.” EX1004, ¶24. A POSA would have understood that this setting or configuration store is implemented via the *memory device* that stores data. EX1003, ¶153.

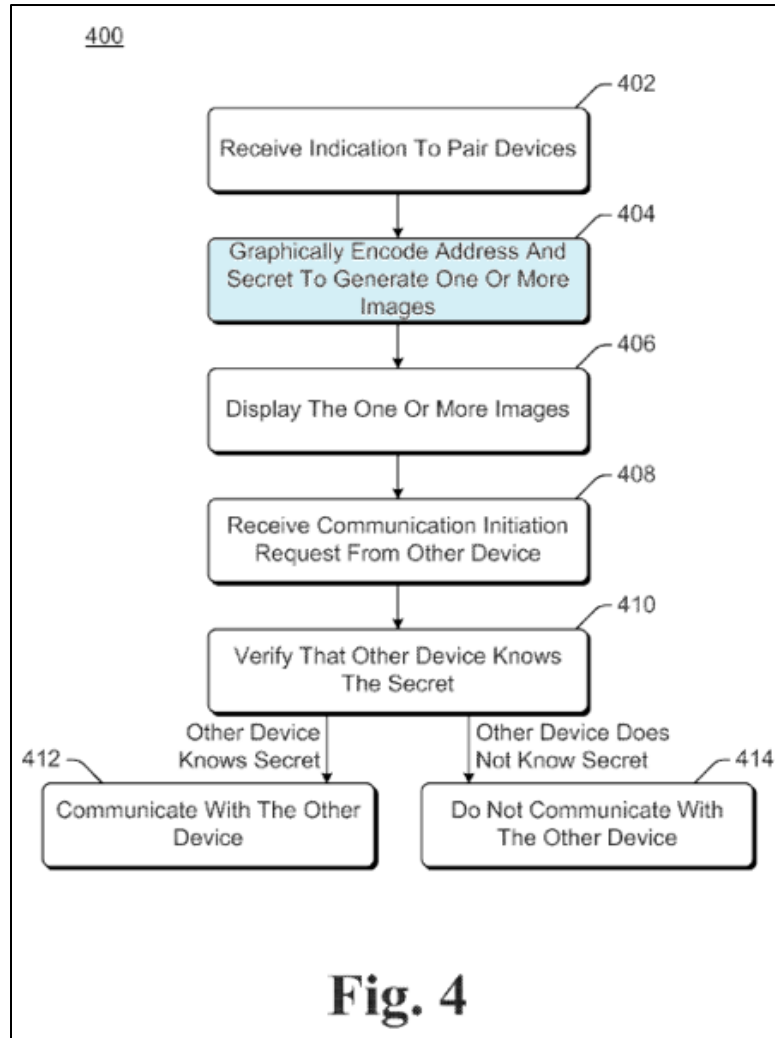
- h. [11.A.7] wherein the at least one processor software is configured to; obtain, from the memory device, the wireless pairing information associated with the wireless communication circuitry;**

Bishop’s device 102’s *processor software* is configured to obtain the address (*wireless pairing information*) “in a variety of different manners, such as from another component or module of device 102, from a setting or configuration store of device 102” (*memory device*). EX1004, ¶24, *see also* ¶¶19, 59; discussion for element [11.A.6]. As explained in Section V.C, the wearable monitoring device implements this functionality in the Bishop-LeBoeuf system. EX1003, ¶154.

- i. [11.A.8] generate a color coded digital scannable media image responsive to the wireless pairing information;**

As explained for element [1.7], Bishop’s device 102’s *processor software*

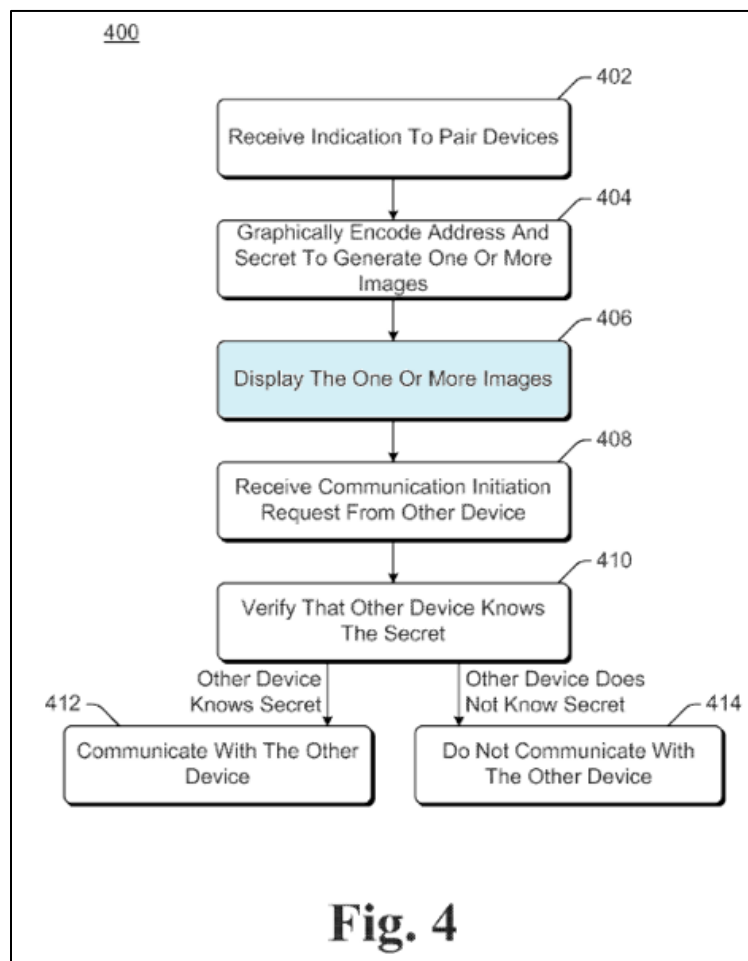
generates an image of “graphically encoded data” (i.e., HCCB) (*color coded digital scannable media*) that stores the address (*wireless pairing information*) and secret of device 102. EX1004, ¶¶23, 27, *see also* ¶¶19, 59. In particular, the device 102 “graphically encodes the obtained address and secret to generate one or more images.” EX1004, ¶27. As explained in Section V.C, the wearable monitoring device implements this functionality in the Bishop-LeBoeuf system. EX1003, ¶155.



EX1004, Fig. 4 (annotated).

- j. **[11.A.9] control the display device, wherein the display device is configured to display the color coded digital scannable media image;**

Bishop's device 102's *processor software* is configured to control the screen 112 (*display device*). EX1004, ¶22, *see also* ¶¶19, 59; EX1003, ¶156. As explained for element [1.7], the screen 112 is configured to display an image of “graphically encoded data” (i.e., HCCB) (*color coded digital scannable media image*). EX1004, ¶27. As explained in Section V.C, the wearable monitoring device implements this functionality in the Bishop-LeBoeuf system.



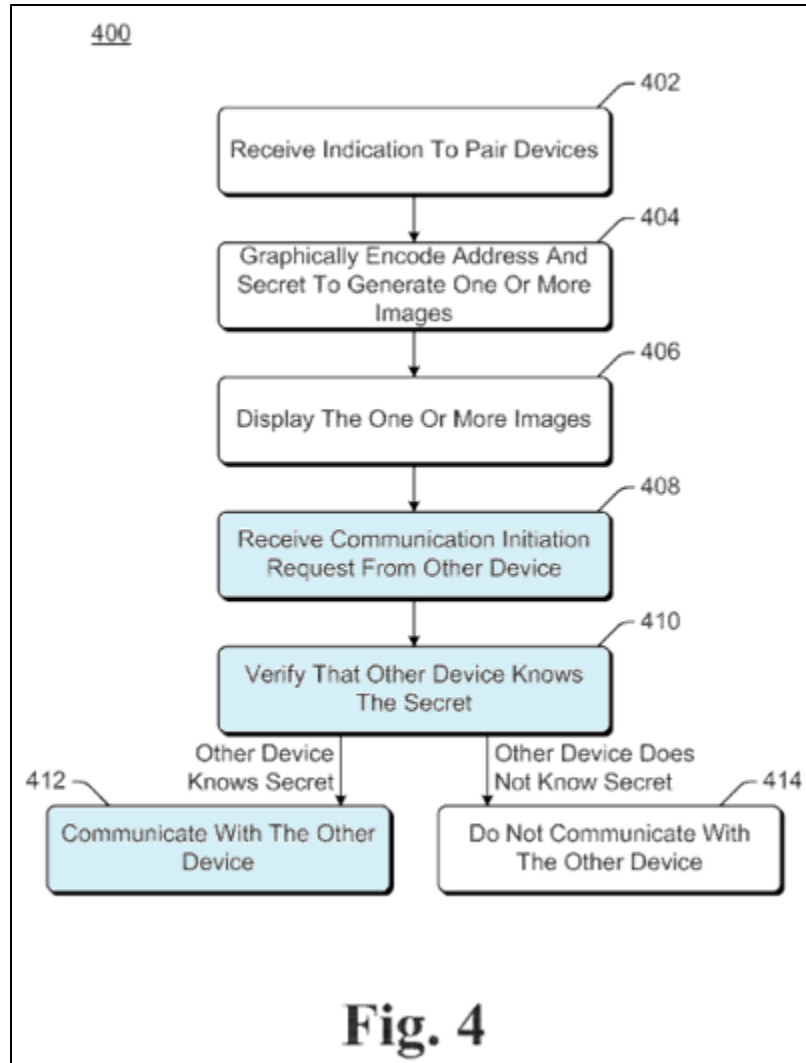
EX1004, Fig. 4 (annotated).

- k. **[11.A.10] Establish, via the wireless communication circuitry, the wireless communications link with the mobile device responsive to the mobile device scanning and decoding the color coded displayed digital scannable media;**

Bishop teaches this element for the reasons provided for element [1.11].

EX1003, ¶157. As explained, Bishop’s mobile device “generates a communication initiation request that targets (e.g., is addressed to) device 102.” EX1004, ¶40.

Upon receiving the request, the wearable monitoring device (which performs the pairing functionality of Bishop’s device 102) “verifies that the communication initiation request proves that device 104 has knowledge of the secret,” and then “proceed[s] with communicating with device 104.” EX1004, ¶¶43-44, *see also* ¶¶19, 59.



EX1004, Fig. 4 (annotated).

I. [11.A.11] Generate at least one of activity tracking information and bio-metric information;

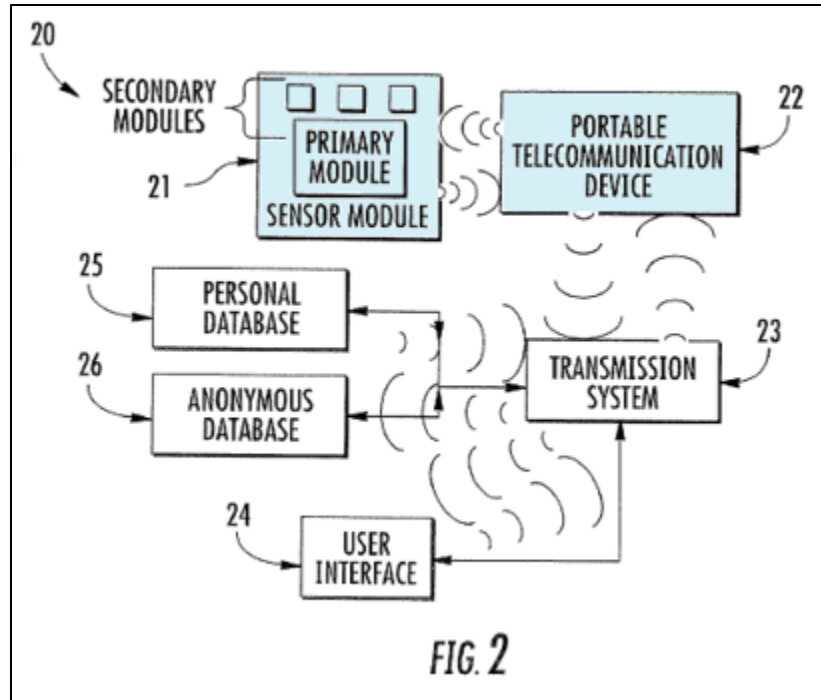
The combination of Bishop and Leboeuf teaches this element for the reasons provided for element [1.12] and [11.A.3]. EX1003, ¶158. As explained, the wearable monitoring device generates information related to “basic vital signs” (*bio-metric information*) and information related to “physical activity” (*activity related information*) and transmits this information to the portable

telecommunication device. EX1005, ¶¶79-80, 97.

The *activity tracking information and bio-metric information* is generated using “various algorithms” (*processor software*) for “extraction of physiological and/or environmental information from the various environmental and/or physiological sensors.” EX1005, ¶117, *see also* ¶¶113, 129. In the combined Bishop-LeBoeuf system, such algorithms would be implemented by the *processor software* taught by the combination of Bishop and LeBoeuf. *See* EX1004, ¶¶19, 59, 81.

- m. **[11.A.12] Communicate, via the wireless communications link, at least one of the activity tracking information and the bio-metric information to the mobile device; and**

The combination of Bishop and LeBoeuf teaches this element for the reasons provided for element [1.12]. EX1003, ¶159. As explained, Bishop-LeBoeuf’s wearable monitoring device (*external wearable activity monitoring device*) communicates, via *processor software*, the *activity tracking information and the bio-metric information* to the *mobile device*. EX1005, ¶¶101-02; *see also* EX1004, ¶¶19, 44, 59.



EX1005, Fig. 2 (annotated).

- n. **[11.B.1] The mobile device, wherein the mobile device is comprised of; at least one camera sensor, included within the mobile device;**

Bishop-LeBoeuf teaches this element for the reasons provided for elements [1.P] and [1.1]. EX1003, ¶160.

- o. **[11.B.2] at least one processor in signal communication with the at least one camera sensor;**

Bishop-LeBoeuf teaches this element for the reasons provided for element [1.2]. EX1003, ¶161.

- p. **[11.B.3] a display in signal communication with the at least one processor;**

Bishop-LeBoeuf teaches this element for the reasons provided for element [1.3]. EX1003, ¶162.

- q. **[11.B.4] communication circuitry configured for wireless communication with the wearable activity tracking device;**

Bishop-LeBoeuf teaches this element for the reasons provided for element [1.4]. EX1003, ¶163.

- r. **[11.B.5] memory, included within the mobile device, associated with one or more processors and configured to store software instructions, which, when executed by the one or more processors, cause the one or more processors to perform operations comprising;**

Bishop-LeBoeuf teaches this element for the reasons provided for element [1.5]. EX1003, ¶164.

- s. **[11.B.6] Generate, via the mobile device processor, an optical scanning user interface on the mobile device display;**

Bishop-LeBoeuf teaches this element for the reasons provided for element [1.6]. EX1003, ¶165.

- t. **[11.B.7] Detect, via the at least one mobile device camera sensor and the optical scanning user interface, a color coded digital scannable media from the display included within the wearable activity tracking device, wherein the color coded digital scannable media contains wireless pairing information associated with the wearable activity tracking device;**

Bishop-LeBoeuf teaches this element for the reasons provided for elements [1.7] and [1.8]. EX1003, ¶166.

- u. **[11.B.8] Optically obtain, via the at least one mobile device camera sensor, the wireless pairing information from the color coded digital scannable media;**

Bishop-LeBoeuf teaches this element for the reasons provided for element [1.9]. EX1003, ¶167.

- v. **[11.B.9] Process, via the at least one mobile device processor, the wireless pairing information;**

Bishop-LeBoeuf teaches this element for the reasons provided for element [1.10]. EX1003, ¶168.

- w. **[11.B.10] Establish, via the at least one mobile device processor, a wireless communications link with the wearable activity tracking device responsive to the processing of the wireless pairing information;**

Bishop-LeBoeuf teaches this element for the reasons provided for element [1.11]. EX1003, ¶169.

- x. **[11.B.11] Receive, via the wireless communications link, at least one of activity related information and bio-metric information generated by the wearable activity tracking device;**

Bishop-LeBoeuf teaches this element for the reasons provided for element [1.12]. EX1003, ¶170.

- y. **[11.B.12] Display, via the mobile device display, at least one of the activity related information and the bio-metric information.**

Bishop-LeBoeuf teaches this element for the reasons provided for element [1.13]. EX1003, ¶171.

E. Dependent Claims

1. Claims 2 and 13

Bishop's device 104 can be a "cellular or other wireless phone." EX1004, ¶15. The cellular/wireless phone comprises a smartphone because it implements "one or more applications that are run by one or more processors," such as "productivity applications," "audio/video applications," "mapping or tracking applications," etc. EX1004, ¶17.

LeBoeuf's telecommunication device can be a "cell phone (which includes a 'smartphone')." EX1005, ¶101. Thus, Bishop-LeBoeuf teaches a mobile device that is a smartphone device. EX1003, ¶¶173-74.

2. Claim 3

Bishop's wireless communications link is a *two-way wireless communications link* because it enables "two devices to be able to communicate data and/or control information between one another." EX1004, ¶1. The devices are able to "send[] messages including data, control information, and so forth to one another." EX1004, ¶44, *see also* ¶¶57-58. Furthermore, LeBoeuf's *wireless communications link* is a *two-way* link because it is implemented using, for instance, Bluetooth or ZigBee, and enables "[t]he portable telecommunication device 22 and the wearable sensor module 21 [to] telemetrically communicate both to and from each other." EX1005, ¶101. Bishop-LeBoeuf thus teaches this claim. EX1003, ¶176.

3. Claims 5 and 17

Bishop's graphically encoded data is stored in a HCCB (*color coded digital scannable media*), which, as Dr. Shenoy explains, is a *2D matrix code* and a *representation of non-human readable information using colored pixels*. EX1004, ¶23; EX1003, ¶178.

4. Claims 6 and 18

LeBoeuf's wearable monitoring device includes "one or more accelerometers" that "measur[e] body motion in real-time," and "gage the distance a person has traveled." EX1005, ¶¶120, 170, *see also* ¶¶76, 157, 163. These accelerometers are used to generate *activity-related information*, such as human motion, "[c]aloric intake, physical activity, and metabolism," "the number of steps walked during a day," etc. EX1005, ¶¶159, 163; EX1003, ¶180.

5. Claims 7 and 16

As explained for element [1.12], Leboeuf's wearable monitoring device includes "physiological sensor[s] 11... for monitoring the physiological functioning of the body," and generating *bio-metric information*. EX1005, ¶¶79-80. These sensors include sensors for monitoring "heart rate, pulse rate," "blood pressure," "glucose," "body fat density," "skin and core body temperature," etc. EX1005, ¶¶80, 151, *see also* ¶81; EX1003, ¶182.

6. Claims 8 and 12

Bishop's communication circuitry is configured to establish a wireless

connection between devices 102 and 104 over communication network 108, which can be “a variety of different networks, including the Internet,” which, as Dr. Shenoy explains, is a wide area network. EX1004, ¶18; EX1003, ¶185.

LeBoeuf’s communication circuitry is configured to establish a wireless connection between its devices over a Bluetooth or ZigBee network, which, as Dr. Shenoy explains, are personal area networks. EX1005, ¶101; EX1003, ¶186.

7. Claim 14

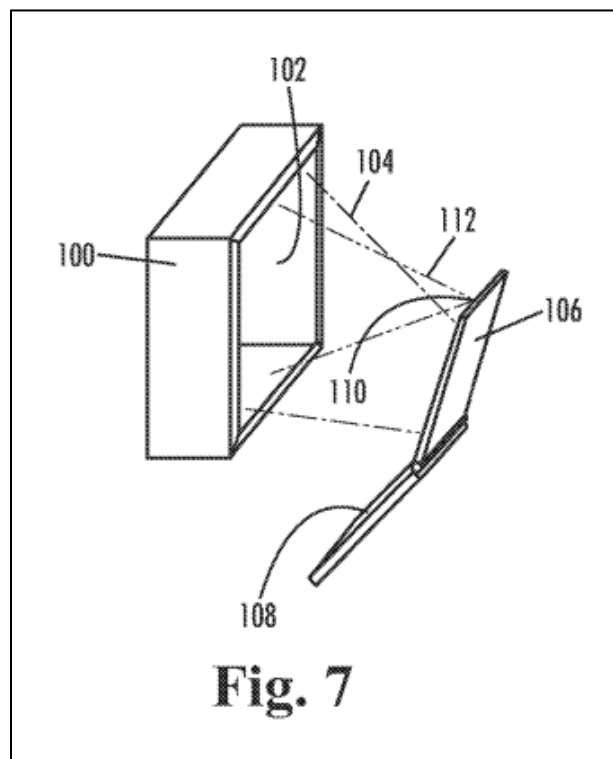
LeBoeuf’s wearable monitoring device is a *wearable health monitoring device* for the reasons provided for element [1.4]. EX1005, ¶¶4, 79, 97, 138. The wearable monitoring device can be implemented as a “wrist-watch.” EX1005, ¶141. This wrist-watch is a *smartwatch* because it includes a “signal processor” for determining user vital signs, and a “transmitter/receiver 14” for establishing wireless connections with other devices. EX1005, ¶¶79, 83, 87-88, 90; EX1003, ¶188.

VI. GROUND 2: BISHOP-LEBOEUF FURTHER IN VIEW OF WILLIAMS RENDERS OBVIOUS CLAIMS 4, 9, 10, 15, 19, AND 20.

1. Williams

Williams teaches a system for “establishing a wireless connection” between devices by “encod[ing] wireless pairing information, for example a device address and PIN number” in a barcode. EX1009, ¶¶5, 26. “The encoded information is displayed as one or more encrypted or non-encrypted images” of barcodes.

EX1009, ¶26. The wireless connection can be a “Bluetooth connection.” EX1009, ¶¶37-38. This connection can be established using a “pairing process after which the mobile device and the mobile module can securely communicate with each other.” EX1009, ¶41. For instance, a “mobile module” can initiate a “pairing request” by generating and displaying an “optical image” encoding the pairing information. EX1009, ¶42. The encoded information includes “the device address associated with the initiating device” and “a PIN code associated with the device address.” EX1009, ¶42. The address is a “unique Bluetooth device address.” EX1009, ¶45. A handheld device captures the image and “decodes and processes the pairing message.” EX1009, ¶43. The devices then establish the wireless connection in accordance with, for instance, the Bluetooth protocol. EX1009, ¶45.



EX1009, Fig. 7.

2. Claims 4 and 15

As explained, Williams’s “wireless pairing information” includes a “unique Bluetooth device address.” EX1009, ¶¶42, 45. As Dr. Shenoy explains, this address comprises a unique identification number associated with the requesting device. EX1003, ¶¶189-91.

A POSA would have found it obvious to implement Williams’s unique Bluetooth device address in the Bishop-LeBoeuf *wireless pairing information*. EX1003, ¶192. Indeed, as explained in Section V.C, a POSA would have adapted Bishop’s pairing process to establish LeBoeuf’s wireless connection, which is a Bluetooth connection. *Id.*; EX1005, ¶101. Indeed, Bishop teaches various network protocols can be used, and that the encoded device address is dependent on such protocol. EX1004, ¶¶18, 24; EX1003, ¶192. When establishing such Bluetooth connection, a POSA would have found it obvious to adapt the encoded device address to be a Bluetooth address, which uniquely identifies the device. EX1003, ¶192.

As Dr. Shenoy explains, the Bluetooth pairing process uses a unique Bluetooth address to address the devices. EX1003, ¶193. And Williams provides explicit teaching of the use of such address. EX1009, ¶¶42, 45. Thus, a POSA would have found it obvious to implement Williams’s Bluetooth address in the

Bishop-LeBoeuf system to establish LeBoeuf's Bluetooth connection using Bishop's pairing process. EX1003, ¶¶193-94. This would merely require a simple substitution of one known element for another (Bishop's IP address for Williams's Bluetooth address) to obtain predictable results (pairing Bluetooth devices). *Id.*

3. Claims 9-10, 19-20

As explained above, Williams's wireless pairing information is "encrypted" using various "encryption method[s]." EX1009, ¶¶26-28, 29. This results in an "encrypted image containing the" wireless pairing information. EX1009, ¶28. Although it does not expressly state that the pairing information is decrypted by the image-capturing device, a POSA would have understood or found obvious that, when the pairing information encoded in the image is encrypted, the image-capturing device would need to decrypt it to use it for establishing the wireless link. EX1003, ¶¶196-98. Indeed, as Dr. Shenoy explains, this was well known. EX1003, ¶200. A POSA would have found it obvious to implement Williams's encryption/decryption techniques in Bishop-LeBoeuf to provide increased security of the device pairing process. EX1003, ¶199.

LeBoeuf's monitoring device transmits "personal and private" health information over the wireless communication link. EX1005, ¶17. A POSA would have sought to improve security of the device pairing process to better ensure that malicious actors cannot pair with LeBoeuf's device to obtain this information. *See*

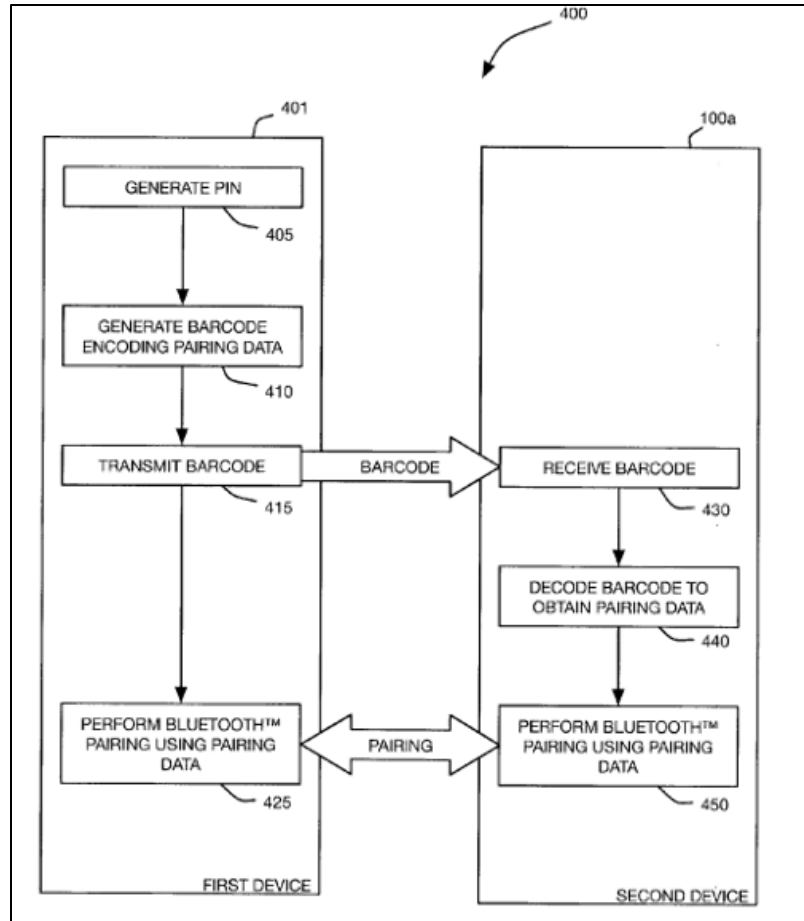
EX1004, ¶45; EX1003, ¶199. Indeed, encrypting the data encoded in Bishop's barcode would ensure that only parties with the relevant encryption key would be able to decipher the pairing data and pair with the device (and thus obtain access to the private information). EX1003, ¶199.

As Dr. Shenoy explains, encryption/decryption was a well-known technique for implementing secure communications. EX1003, ¶200. As Dr. Shenoy also explains, it was also well-known to encrypt/decrypt information encoded in barcodes. *Id.* A POSA would have thus found it obvious to encrypt/decrypt Bishop-LeBoeuf's graphically encoded data and would have had a reasonable expectation of success in doing so. EX1003, ¶201. Indeed, encryption/decryption was commonly performed to secure data and a POSA would have readily understood how to implement Williams's encryption/decryption techniques. *Id.* For instance, a POSA would have readily understood how to implement and communicate suitable keys for encrypting and decrypting the data in accordance with well-established and conventional techniques. *E.g.*, EX1009, ¶¶9, 43; EX1003, ¶201. This would have been obvious as merely requiring the use of a known technique (encrypted barcode images) to improve similar processes (wireless pairing processes) in the same way (provide enhanced security). EX1003, ¶201.

**VII. GROUND 3A: BROWN IN VIEW OF WEISS RENDERS OBVIOUS
CLAIMS 1-8 AND 11-18**

A. Brown

Brown teaches techniques for “performing Bluetooth pairing between a first device and a second device.” EX1006, Abstract; EX1003, ¶¶203-204. For instance, a first device “encodes Bluetooth pairing data... in a barcode.” EX1006, ¶75. The pairing data includes a “personal identification number (PIN) code” and “the network address of the first device (e.g., MAC address).” EX1006, ¶¶71, 75. The first device “display[s] the image on [its] display,” and a second device “capture[s]” the image, “extracts the barcode,” and “decodes [it] to obtain the Bluetooth pairing data.” EX1006, ¶¶79, 83-84. The second device then “transmits Bluetooth pairing data... to first device 401,” and the devices “carr[y] out Bluetooth pairing in known manner.” EX1006, ¶¶80, 85.

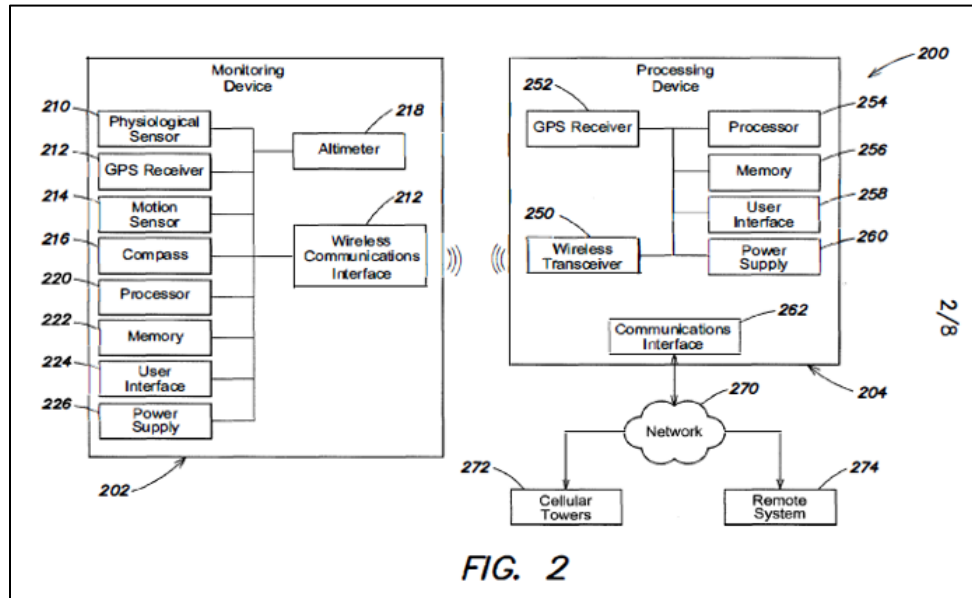


EX1006, Fig. 4.

B. Weiss

Weiss discloses a system for “monitoring one or more physiological conditions” that includes a “personal monitoring device” that is “designed to be easily wearable and include[s]... a plurality of sensors for detecting one or more physiological attributes” of a user. EX1007, 1:23-28, 2:11-15. The monitoring device communicates such physiological attributes to a “processing device,” for instance, “using the Bluetooth™ open wireless standard.” EX1007, 2:8-11. The processing device may be a “smartphone” configured to “process data received from the monitoring device.” EX1007, 8:11-14. The processing device is also

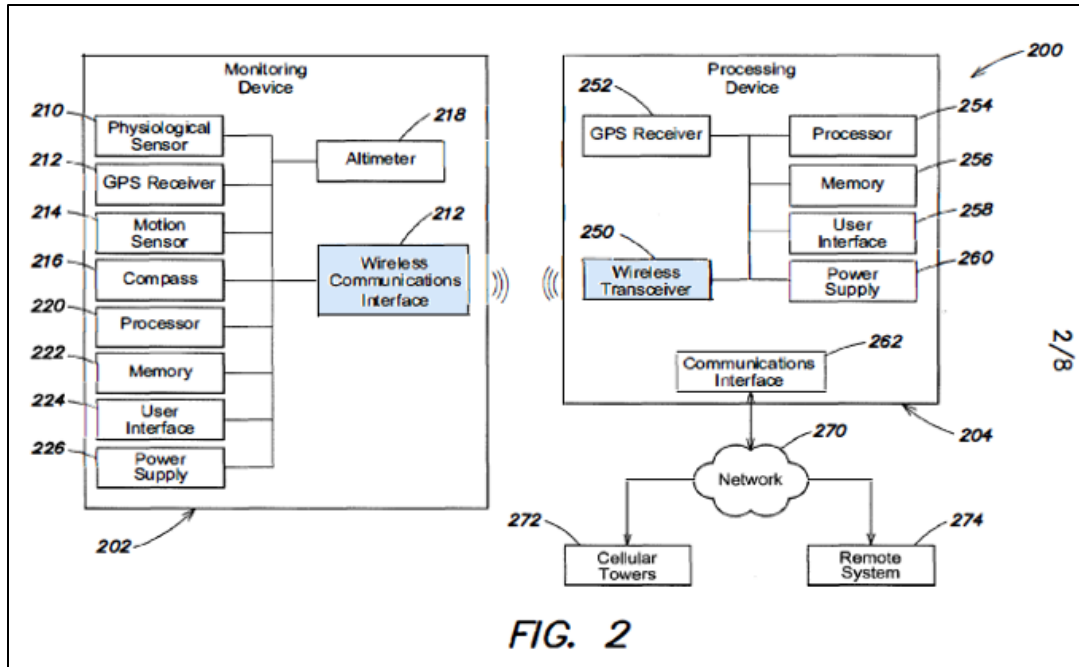
configured to “generat[e] and/or display[] reports such as charts, tables, figures, data plots versus time or other parameters, summaries” relating to the “data communicated by the monitoring device.” EX1007, 17:28-18:4.



EX1007, Fig. 2.

C. Motivation to Combine

A POSA would have found it obvious to combine Brown and Weiss to arrive at the claims of the '394 patent. EX1003, ¶206. Weiss's monitoring device is configured to “transmit[] data acquired from one or more [sensors] to the processing device,” over a Bluetooth communication link. EX1007, 2:8:11, 7:30-8:2. However, Weiss does not teach how to establish this Bluetooth link between these devices.



EX1007, Fig. 2 (annotated).

A POSA would have sought to minimize the difficulties in establishing a Bluetooth connection between Weiss’s devices. EX1003, ¶207. This would have led a POSA to Brown, which teaches techniques for “performing Bluetooth pairing between a first device and a second device.” EX1003, ¶208; EX1006, Abstract. Brown improved upon conventional pairing techniques, which provided low “security” and/or could only be implemented by devices with “significant processing capability.” EX1006, ¶44. To address this, Brown teaches Bluetooth pairing that is performed by encoding “Bluetooth pairing data” in a barcode. EX1006, Abstract, ¶39.

A POSA would have found it obvious to adapt Weiss’s monitoring and processing devices to implement Brown’s Bluetooth pairing process. EX1003,

¶209. Brown provides express motivation because its technique “simplif[ies] the discovery and pairing process,” and can be “employed in devices with limited processing power and input capability.” EX1006, ¶¶46-47. Brown’s technique also “make[s] it more difficult for an attacker” to snoop on the pairing process. EX1006, ¶46. This avoids the need to rely on “public key cryptographic techniques,” which require increased processing power. EX1006, ¶44; EX1003, ¶¶209-10.

A POSA would have thus been motivated to implement Brown’s technique in Weiss. EX1003, ¶210. Weiss’s monitoring device is “designed to be easily wearable,” and includes “integrated” sensors, thereby allowing for “increased mobility.” EX1007, 1:15-20, 2:11-15. For instance, the device may be “integrated into” a “wristwatch” or “arm band.” EX1007, 7:23-28. A POSA would have sought to implement Brown’s “simplif[ied] and “secure” pairing process in Weiss to provide the user with an efficient and user-friendly pairing process for the wearable device. *See* EX1006, ¶¶38, 44-47; EX1003, ¶211.

A POSA would have had a reasonable expectation of success in combining Brown’s and Weiss’s teachings in this manner. EX1003, ¶215. Weiss’s monitoring and processing devices already communicate using Bluetooth. It was within the skill of a POSA to adapt these devices to implement Brown’s techniques, which “may be employed in devices with limited processing power and input capability.”

Id.; EX1006, ¶46. Moreover, Weiss’s monitoring device can be implemented as a variety of devices, including a “wristwatch,” and its portable telecommunication device can be a “smartphone,” such as an “iPhone” or “Blackberry.” EX1007, 7:24-28, 12:14-19.

It was thus within a POSA’s skill to adapt Weiss’s devices to implement Brown’s hardware and software components to the extent necessary to implement Brown’s device pairing process. EX1003, ¶¶212-17. For instance, a POSA would have readily been able to adapt Weiss’s devices to implement Brown’s “camera unit 148,” “short-range communications subsystem 122,” “physical computer-readable storage media,” “memory,” “display 110,” “display 700,” “[m]icroprocessor 102,” and “processor” or other suitable components for implementing the pairing process. *Id.*; EX1006, ¶¶13, 15, 23, 72, 75, 79, 83, 106. This would amount to, at most, a simple substitution of known electronic components in conventional manners to achieve predictable results. EX1003, ¶214.

For instance, a POSA would have had no trouble adapting Weiss’s monitoring device to implement a display that displays graphically encoded data, as taught by Brown. EX1006, ¶¶23, 75, 79; EX1003, ¶216. Nor would a POSA have had trouble adapting the monitoring device to encode the Bluetooth pairing data in a barcode as taught by Brown. EX1003, ¶216. Indeed, as Dr. Shenoy explains, it was well known for electronic devices, including watches, to generate

and display barcodes that encoded information, including information used for establishing wireless communication links between devices. *Id.*

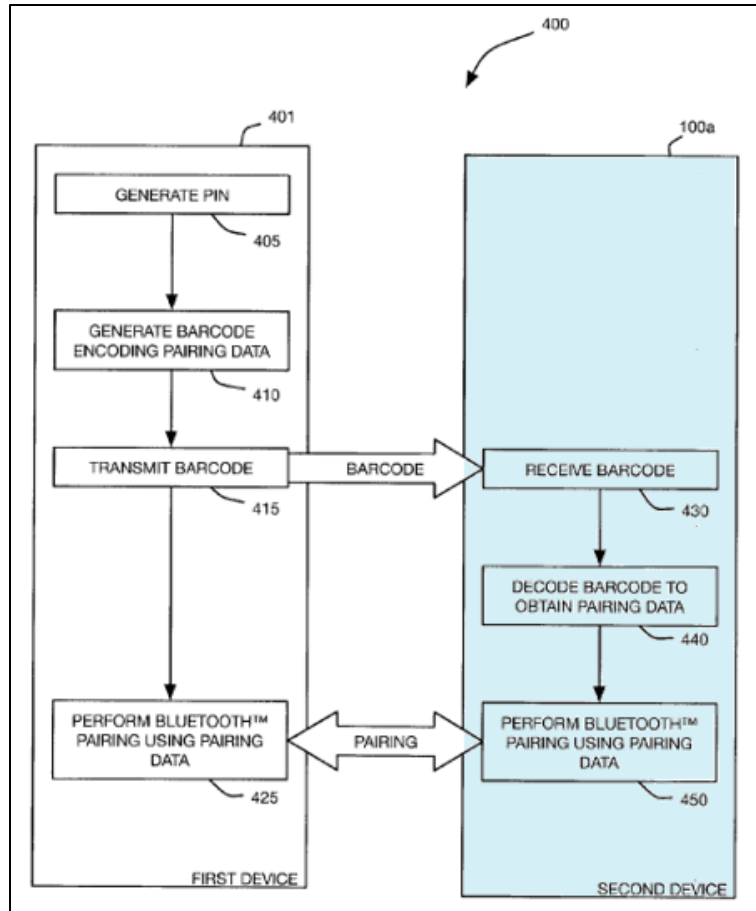
These adaptations would have been straight-forward and readily implementable by a POSA. EX1003, ¶¶215-18. As explained, Brown’s disclosures “may be employed in devices with limited processing power and input capability.” EX1006, ¶46. Accordingly, a POSA would have recognized that the combination of Brown and Weiss would merely amount to the use of a known technique (encoding Bluetooth pairing data in barcodes) to improve similar devices (Weiss’s mobile device) in the same way (to efficiently and securely establish wireless communications). EX1003, ¶218.

D. Independent Claims

1. Claim 1

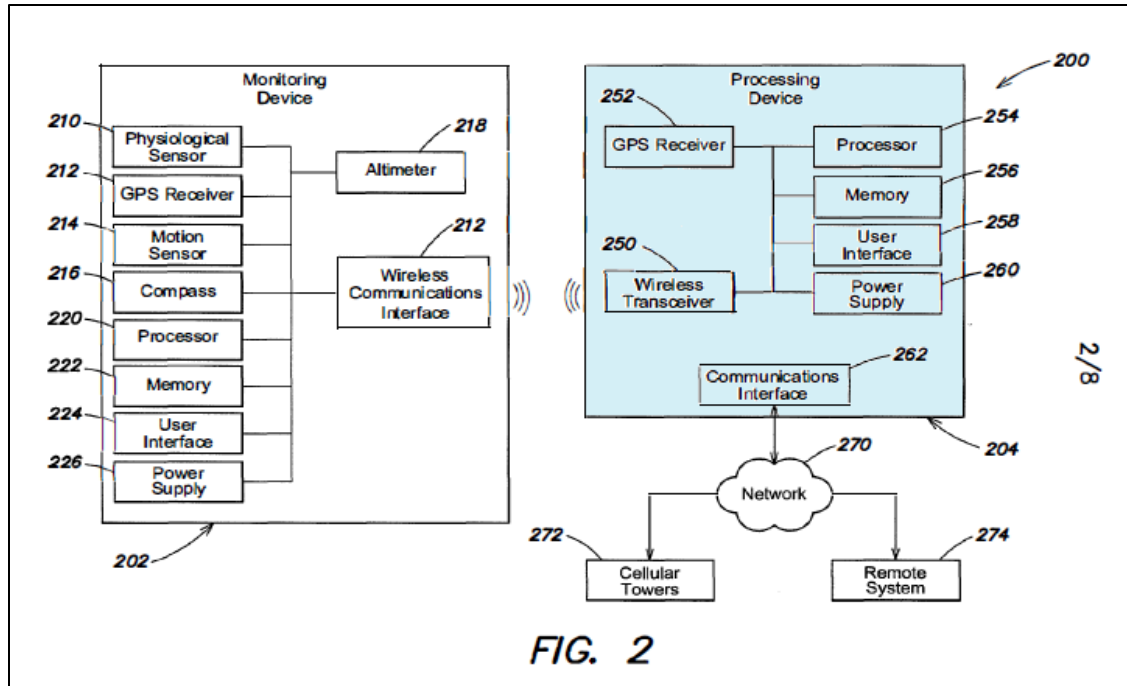
a. [1.P]

Brown discloses a mobile device 100a, which can be, for instance, “a data messaging device, a two-way pager, a cellular telephone with data messaging capabilities, a wireless Internet appliance, or a data communication device.” EX1006, ¶¶11, 13, 79.



EX1006, Fig. 4 (annotated).

Weiss also teaches a *mobile device* in the form of its “processing device,” which can be “smartphone,” such as an “iPhone” or “Blackberry.” EX1007, 12:14-18.

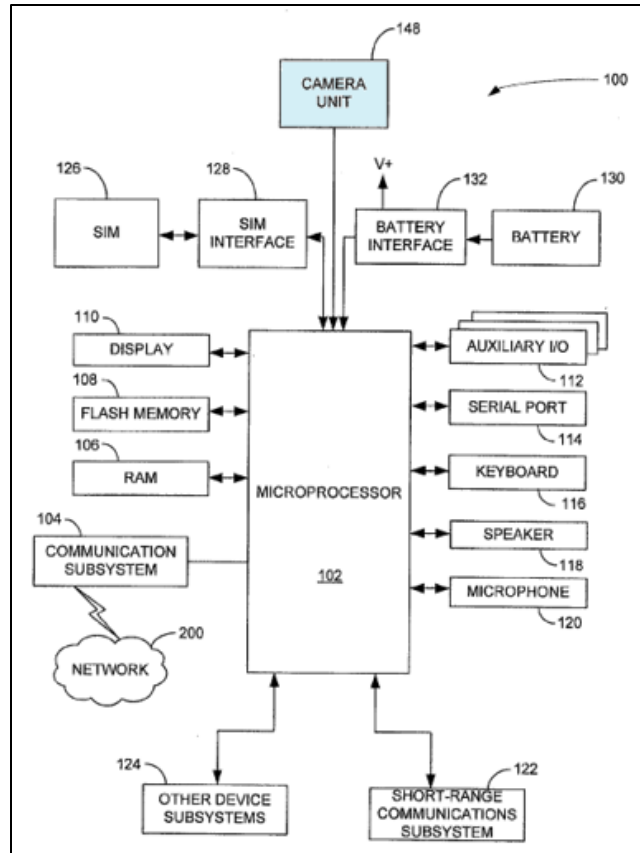


EX1007, Fig. 2 (annotated).

As explained in Section VII.C, Brown-Weiss includes a mobile device taught by the combination of Brown (e.g., mobile device 100a) and Weiss (e.g., processing device 204) that communicates wirelessly with a monitoring device. The combined mobile device teaches the componentry and functionality of the claimed *mobile device*, as explained below. EX1003, ¶¶219-21.

b. [1.1]

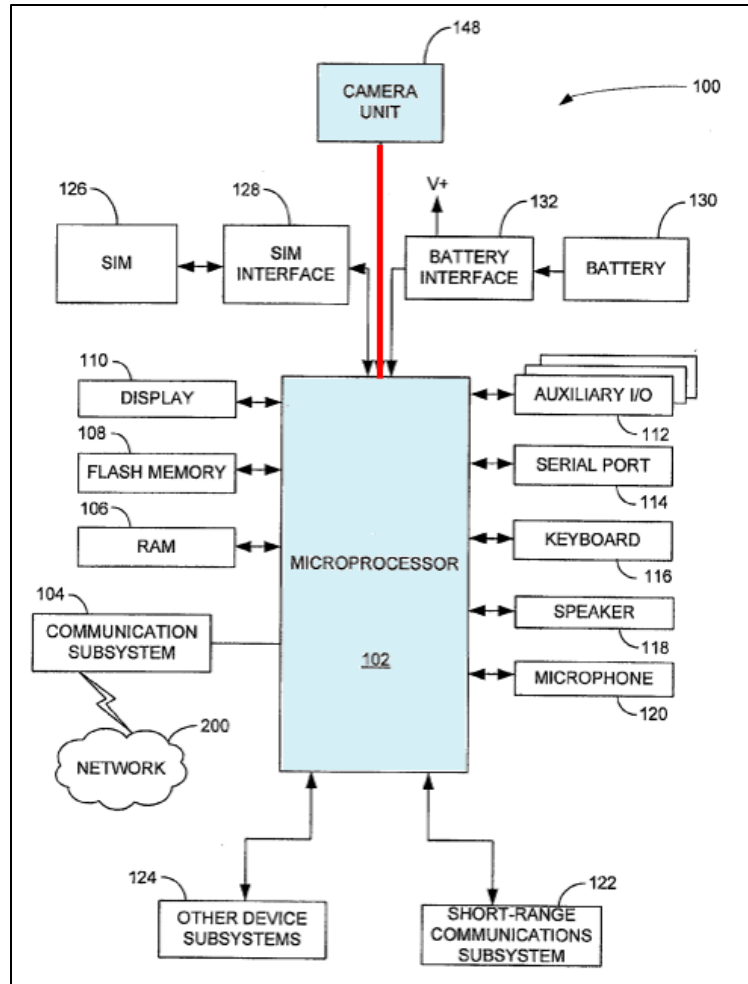
Brown’s mobile device includes a “camera unit 148” that is “configured to capture an image comprising [a] barcode.” EX1006, ¶¶15, 59, 83; EX1003, ¶222.



EX1006, Fig. 1 (annotated).

c. [1.2]

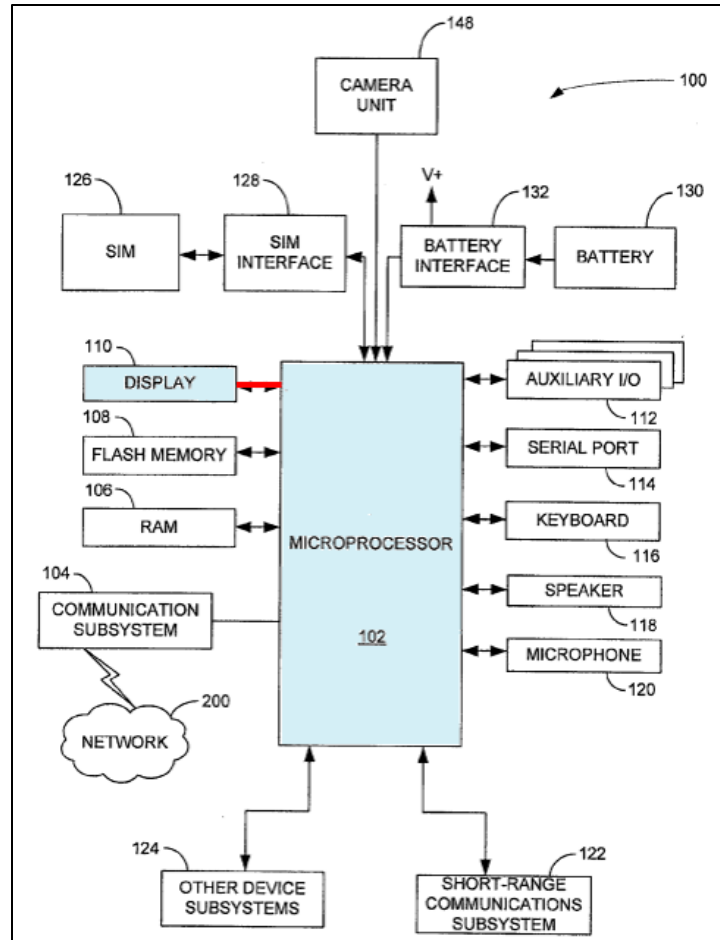
Brown’s mobile device includes a “[m]icroprocessor 102 [that] controls the overall operation of mobile device.” EX1006, ¶13. The microprocessor “interact[s] with additional subsystems such as... camera unit 148” (*is in signal communication with the at least one camera sensor*). EX1006, ¶15; EX1003, ¶223.



EX1006, Fig. 1 (annotated).

d. [1.3]

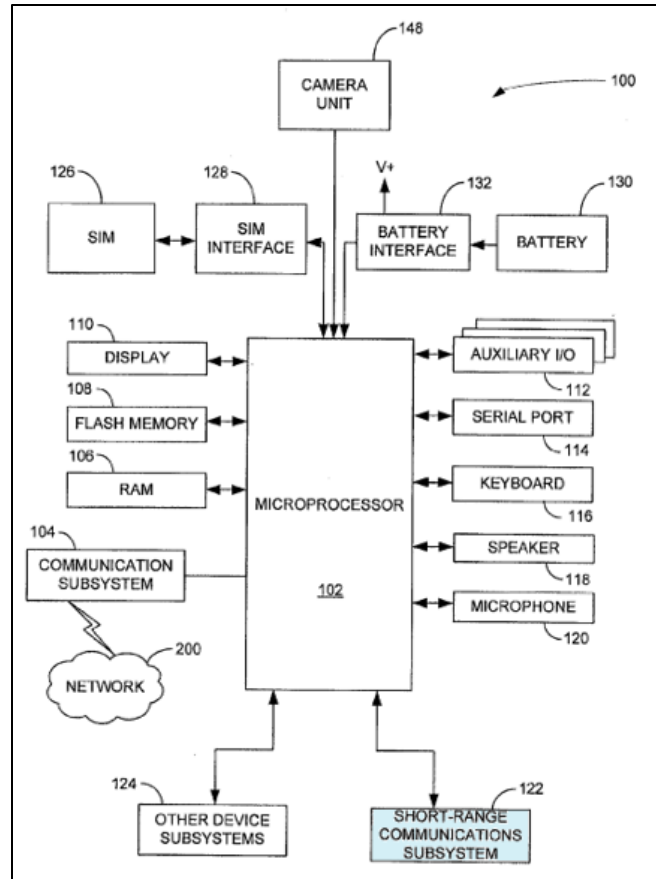
Brown's mobile device includes a display 110 that "interacts with" (is *in signal communication with*) the microprocessor 102. EX1006, ¶15. For instance, "[m]icroprocessor... processes [received signals] for output to display 110." EX1006, ¶23; EX1003, ¶224.



EX1006, Fig. 1 (annotated).

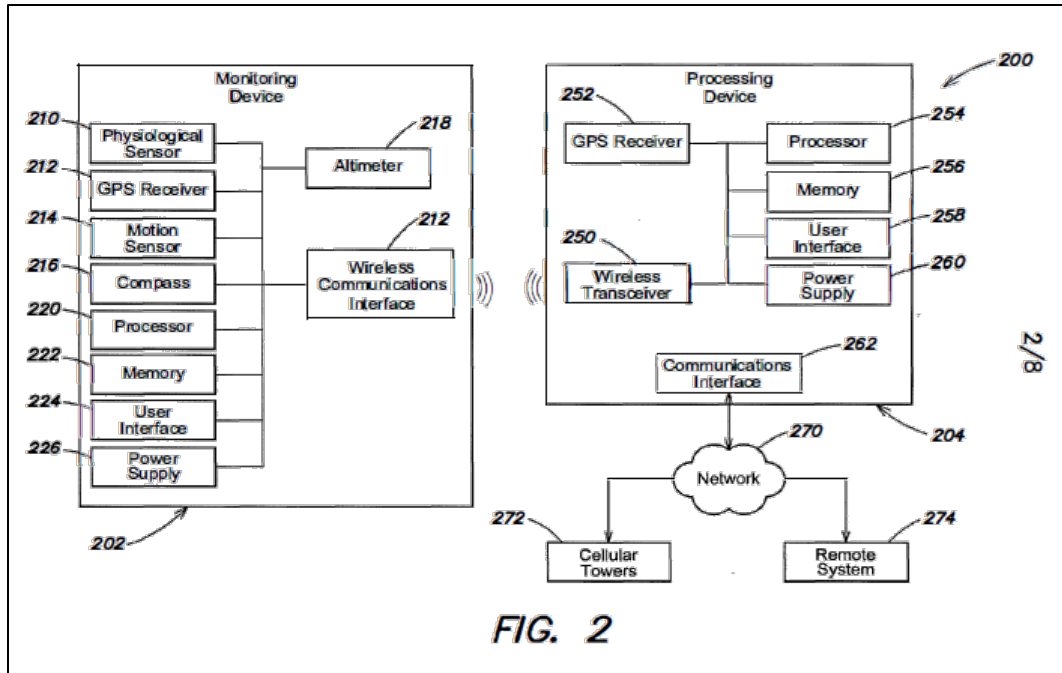
e. [1.4]

Brown's mobile device includes a "short-range communications subsystem 122" that "provide[s] for communication between mobile device 100 and different systems or devices." EX1006, ¶¶20, 22. "For example, subsystem 122 may include... circuits and components for short-range communication," including Bluetooth communication (*communication circuitry for wireless communication*). EX1006, ¶22; EX1003, ¶225.



EX1006, Fig. 1 (annotated).

As explained in Section VII.C, in the Brown-Weiss system, the mobile device communicates with Weiss's monitoring device. *See* EX1007, 2:8-11. The monitoring device is an *external wearable activity tracking device* because it is “designed to be easily wearable and include one or a plurality of sensors for detecting one or more physiological attributes, including, but not limited to, pulse, blood oxygen level, temperature, respiration,” etc. EX1007, 2:8-15; EX1003, ¶226. For instance, the monitoring device can be “integrated into... a wristwatch.” EX1007, 7:26-29.



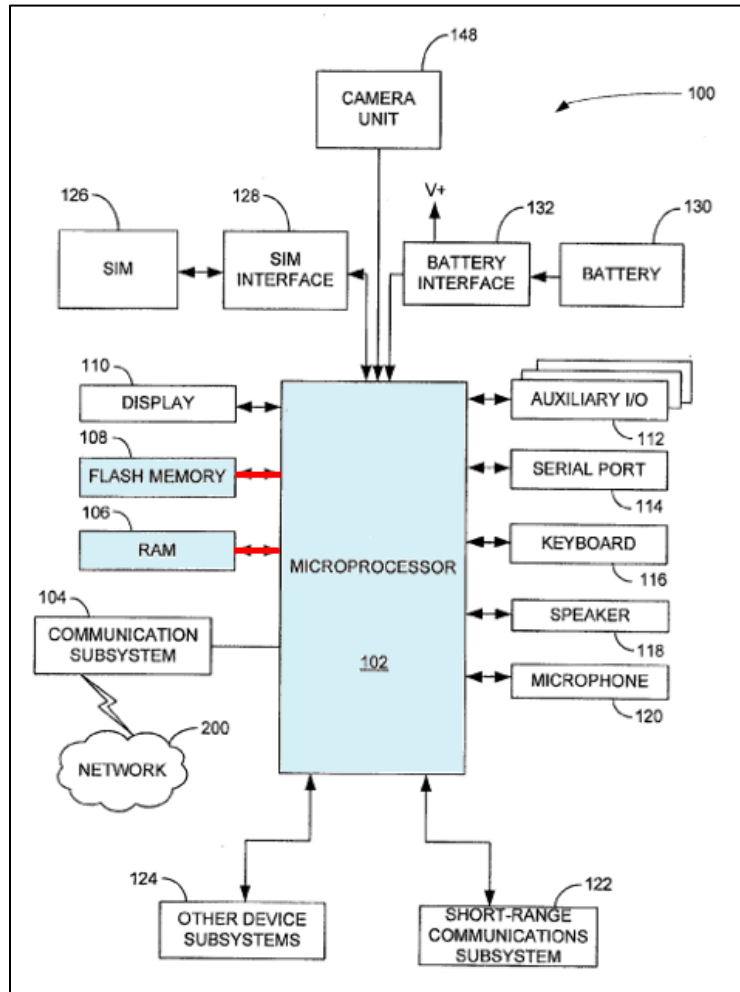
EX1007, Fig. 2.

In Brown-Weiss, the mobile device would be adapted to communicate with Weiss's monitoring device using, for instance, the mobile device's short-range communication subsystem 122. *See, e.g.*, EX1006, ¶22; EX1007, 12:10-13. Thus, the combination of Brown and Weiss teaches this element. EX1003, ¶227.

f. [1.5]

Brown's mobile device includes "Random Access Memory (RAM) 106" and "flash memory 108" (*memory*), which "interact with" microprocessor 102. EX1006, ¶15; EX1003, ¶228. Flash memory 108 stores, for instance, "[o]perating system software used by microprocessor 102." EX1006, ¶16. In the mobile device 100a, "the operating system, specific device applications, or parts thereof, may be temporarily loaded into a volatile store such as RAM 106" to "enable[] execution of software applications on mobile device 100." EX1006, ¶¶16, 19. For instance,

the device “has a Bluetooth pairing application stored in its memory,” that when executed by the microprocessor 102, causes the device to establish a wireless communication link as claimed. EX1006, ¶¶81-82.



EX1006, Fig. 4 (annotated).

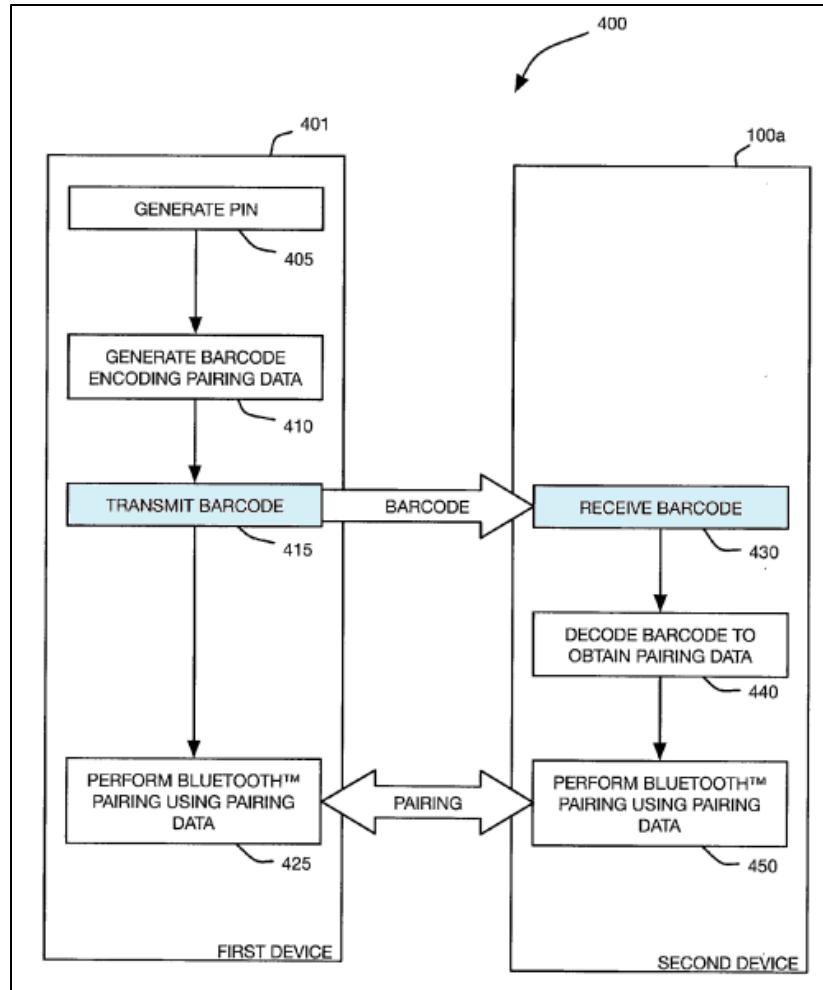
g. [1.6]

Brown’s mobile device’s *processor* implements a “Bluetooth pairing application” that includes “a user interface” (*optical scanning user interface*) “for the user to scan (e.g., using a camera associated with the device) a barcode that encodes pairing data specifically for initiating Bluetooth pairing.” EX1006, ¶¶82,

91, *see also* ¶¶81, 106; EX1003, ¶230. The mobile device generates this user interface, for instance, when the user “launch[es] the application.” EX1006, ¶82.

h. [1.7]

Brown’s mobile device, via its processor, scans and captures an image of a “color barcode” (*color coded digital scannable media*) presented on a *display included within a* second device 401. EX1006, ¶¶77, 79, 83, 96; EX1003, ¶231. Device 401 “display[s] the image on a display” that is “integrated with” the device. EX1006, ¶79. The device 100a captures this displayed image using the camera and above-described user interface, “detect[s] [that it] comprises a barcode,” and “automatically identif[ies] that [] the barcode comprises Bluetooth pairing data.” EX1006, ¶¶94, 96, *see also* ¶¶81, 106.



EX1006, Fig. 4 (annotated).

As explained in Section VII.C, in the Brown-Weiss system, the mobile device establishes communication with Weiss’s (adapted) monitoring device (*external wearable activity tracking device*) using Brown’s pairing process. In this system, the monitoring device (acting as the device 401 in Brown’s Bluetooth pairing process) generates and displays the color barcode image that is captured by the mobile device in order to “establish wireless connections” between the devices. EX1006, ¶105; EX1003, ¶232.

Brown’s “color barcode” is a *color coded digital scannable media*, as

claimed, because it “employ[s] different color combinations.” EX1006, ¶76. A POSA would have understood that such color barcode encodes data through the different colors, such that the colors themselves encode data. EX1003, ¶233. For instance, Brown’s barcode can be a 2D matrix barcode (e.g., quick response (QR) code or Datamatrix). *See* EX1006, ¶36, Fig. 7. As Dr. Shenoy explains, such barcodes encode binary data in black and white modules, with black modules representing a “1” value and white modules representing a “0” value. EX1003, ¶233. A POSA would have understood that, in Brown’s color QR barcode, a first color (e.g., blue) would represent a first value (e.g., “1”) and a second color (e.g., grey) would represent a second value (e.g., “0”). *Id.* Thus, a POSA would have understood that such color barcode is a *color coded digital scannable media*, as claimed. *Id.*

As Dr. Shenoy also explains, a POSA would have also understood that Brown’s color barcode encompasses barcodes that use more than two colors to encode data, such as the HCCB barcode, which encodes different data values using four (or more) different colors. EX1003, ¶234. Such color-coded barcodes were well-known before the ’394 patent’s priority date. *Id.* A POSA would have understood Brown to encompass such barcodes because they represent well-known examples of color barcodes that employ “different color combinations.” *Id.*; *see* EX1006, ¶¶2, 76.

At the very least, a POSA would have found it obvious to implement such color-coded barcode (e.g., that encodes data through more than two colors) in Brown based on Brown’s disclosure of a “color barcode.” EX1003, ¶235. As Dr. Shenoy explains, color-coded barcodes are advantageous in that they enable greater data density, such that more data can be stored in barcodes of smaller physical size. *Id.* A POSA would have been motivated to implement such color coded barcode to reduce the barcode size necessary to display the Bluetooth pairing data, and would have also found it obvious to implement such color-coded barcode as a matter of a simple substitution of one known element (Brown’s barcode) for another (a color-coded barcode) to obtain predictable results (encoding device pairing data). *Id.*

i. [1.8]

Brown’s barcode (*color coded digital scannable media*) “encodes Bluetooth pairing data” comprising “the network address of the [the device 401] (e.g., MAC address)” (*wireless pairing information*) and a “personal identification number (PIN) code.”⁶ EX1006, ¶¶71, 75; EX1003, ¶236. The pairing data is “for initiating Bluetooth pairing,” and “usable to complete a Bluetooth pairing” between devices.

⁶ Petitioner does not rely on the PIN as the claimed *wireless pairing information*.

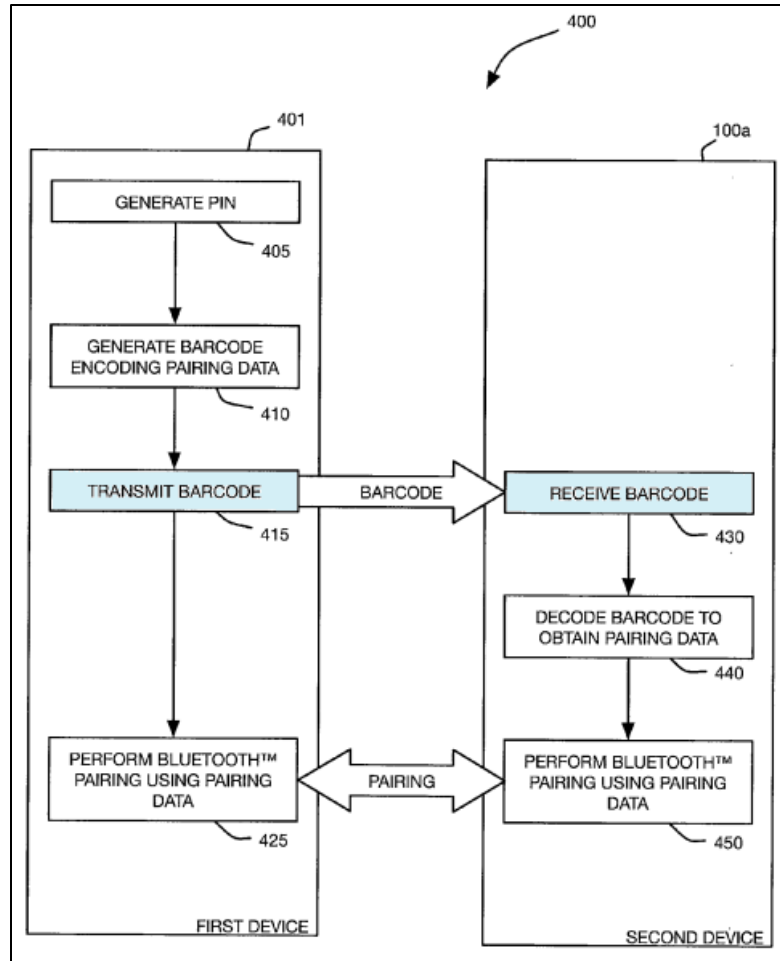
EX1006, ¶¶56, 82.

As explained in Section VII.C, in the combined Brown-Weiss system, the pairing data is encoded and displayed by Weiss's monitoring device (*external wearable activity tracking device*) to pair the monitoring device with the mobile device. In this system, the pairing data is generated by the monitoring device, and includes a network address and PIN code associated with the monitoring device.

EX1006, ¶¶71-75; EX1003, ¶237.

j. [1.9]

Brown's mobile device, via its *processor*, "receives" and "captures" (*optically obtains*) the "image comprising the barcode" that is displayed by the first device. EX1006, ¶83, *see also* ¶¶81, 106. The "image is captured" via "camera unit 148" (*camera sensor*) of the device. EX1006, ¶83. This process comprises *optically obtaining the wireless pairing information from the color coded digital scannable media* because the device uses the camera unit (*camera sensor*) to capture (*optically obtain*) the pairing data, including the MAC address, (*wireless pairing information*) that is stored in the barcode (e.g., Brown's color barcode) (*color coded digital scannable media*). EX1003, ¶¶238-39.

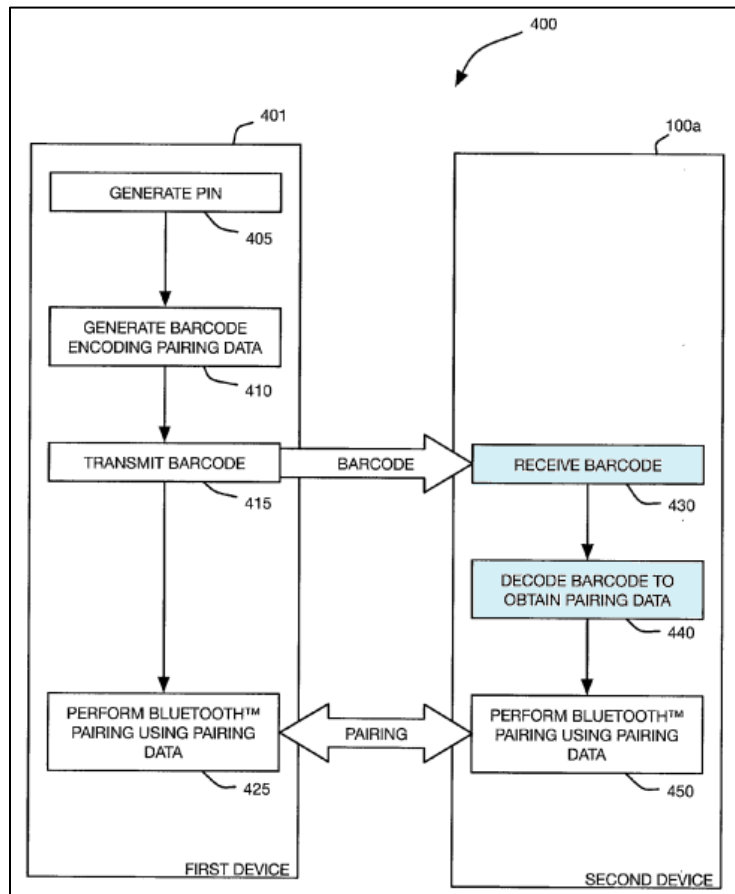


EX1006, Fig. 4 (annotated).

k. [1.10]

Brown’s mobile device *processor* “process[es] the Bluetooth pairing data” (comprising *wireless pairing information*). EX1006, ¶95, *see also* ¶¶81, 106; EX1003, ¶240. For instance, the device may “automatically identify that that the barcode comprises Bluetooth pairing data, and [] automatically process the Bluetooth pairing data accordingly, treating the scan of the barcode as a Bluetooth pairing request.” EX1006, ¶96, *see also* ¶¶60, 99-100. As another example, the device 100a *processes* the pairing data by “extract[ing] the barcode” from the

captured image. EX1006, ¶83. As yet another example, the device 100a *processes* the pairing data by “decod[ing] the barcode to obtain the Bluetooth pairing data.” EX1006, ¶84.



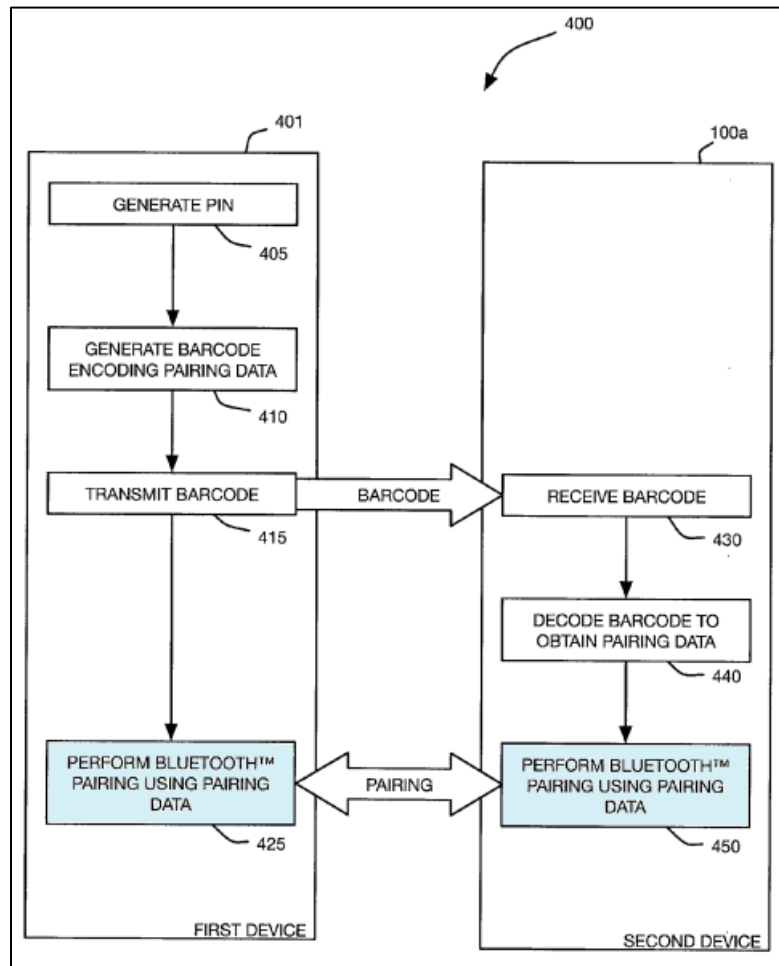
EX1006, Fig. 4 (annotated).

I. [1.11]

Brown’s mobile device processor “establish[es] a communication link” with the second device (*establishes a wireless communications link*) using the Bluetooth pairing data. EX1006, ¶43, *see also* ¶¶81, 106; EX1003, ¶242. Once the device decodes the Bluetooth pairing data from the barcode, it “transmits Bluetooth pairing data, which depends in part on the PIN code... decoded from the

barcode... to first device 401, and carries out Bluetooth pairing in known manner.”

EX1006, ¶85. The pairing process “establish[es] communications [between the devices] for the first time.” EX1006, ¶41, *see also* ¶105.



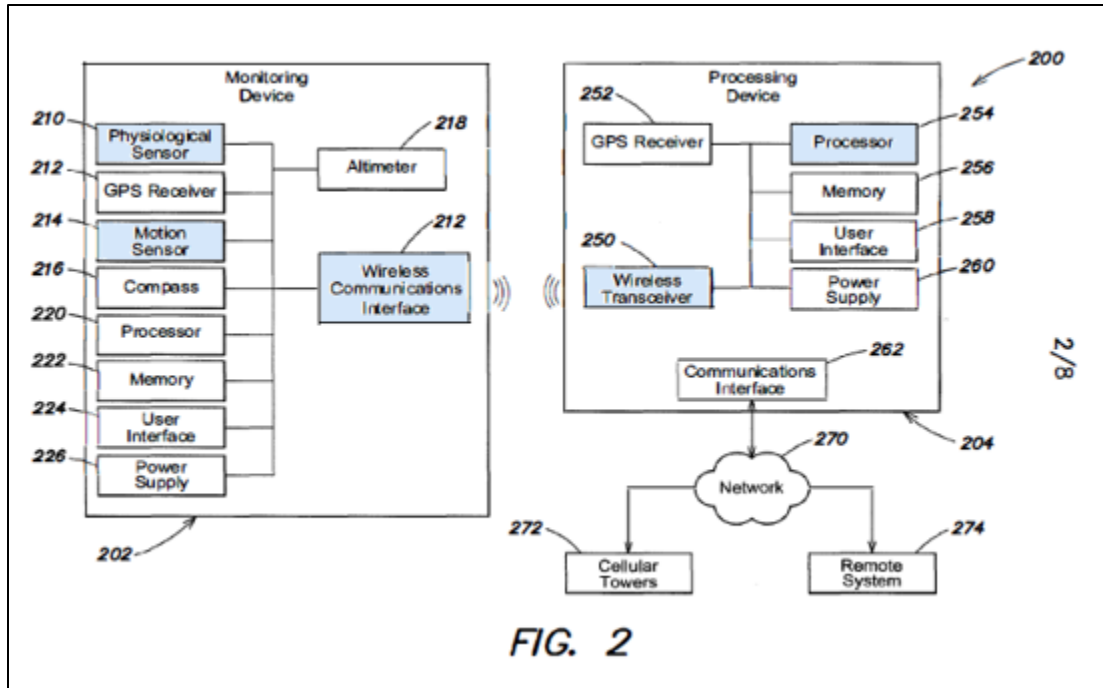
EX1006, Fig. 4 (annotated).

As explained in Section VII.C, in the combined Brown-Weiss system, the mobile device would be paired with Weiss’s monitoring device (*external wearable activity tracking device*). As described, these devices would use Brown’s device pairing process to “establish a communication link” between them. EX1003, ¶243.

m. [1.12]

The combination of Brown and Weiss teach this element. EX1003, ¶244. Weiss's "monitoring device" (*external wearable activity monitoring device*) communicates with the "processing device" (*mobile device*) through a "wireless communications interface." EX1007, 12:10-11. "The processing device [] includes a wireless transceiver [] that is adapted to receive communications transmitted by [the] monitoring device," for instance, over a Bluetooth link (*wireless communications link*). EX1007, 7:30-8:10, 12:11-13.

The processing device, *via its processor*, "receives data transmitted wireless by [the] monitoring device," such as "data or information provided by" the physiological sensors or motion sensor of the monitoring device "and/or other data associated with the physiological attributes, the location and/or activities of an individual using the monitoring device." EX1007, 13:1-5, *see also* 14:2-5 ("the monitoring device [] communicates one or more of the following to the processing device []: sensor data (e.g., physiological data), location data, motion data... etc."), 4:22-5:9; EX1003, ¶¶244-46.



EX1007, Fig. 2 (annotated).

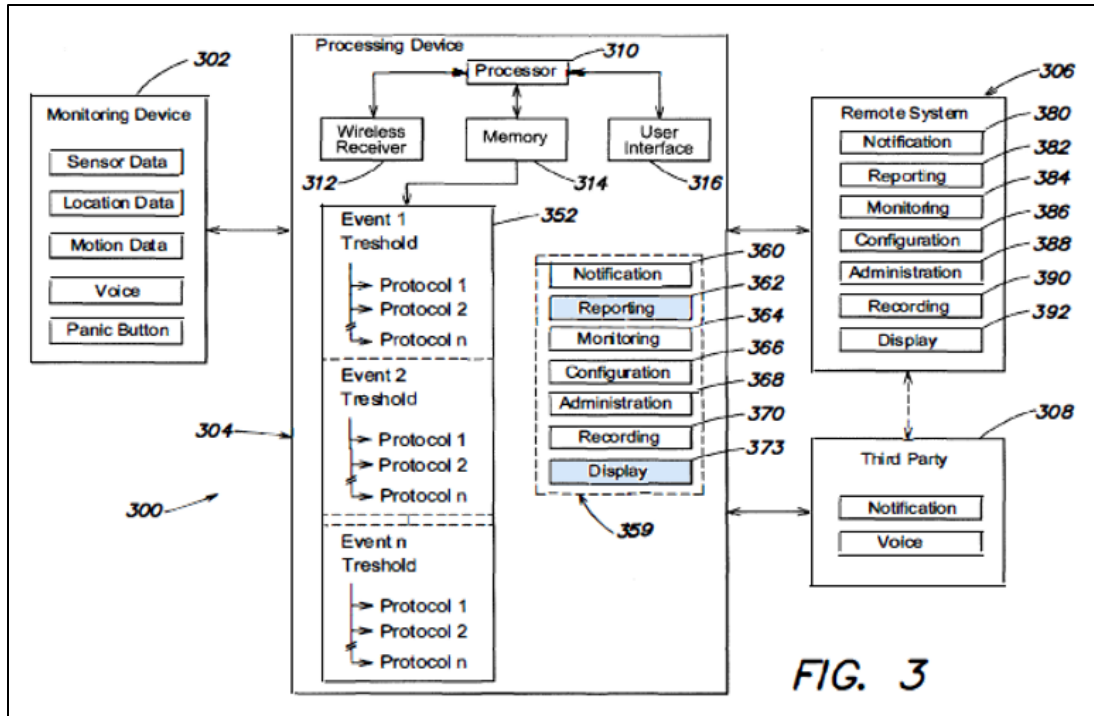
The processing device thus receives *bio-metric information* in the form of physiological sensor data, which includes “pulse, blood oxygen level, temperature, respiration, heart waveform, heart-rate, galvanic skin response, activity, perspiration, body fluid chemistry, and other such detectable attributes.” EX1007, 2:11-15, *see also* 21:30-22:5; EX1003, ¶246. The processing device also receives *activity related information* in the form of, for instance, “motion data” and data relating to “activities of an individual,” etc. EX1007, 13:1-5, *see also* 12:2-9, 14:2-5.

As explained in Section VII.C, in the Brown-Weiss system, Weiss’s monitoring device would generate such sensor information and wirelessly transmit it to the mobile device over the *wireless communications link* established using

Brown's communication initiation procedures. Thus, the combination of Brown and Weiss teaches this element. EX1003, ¶247.

n. [1.13]

As explained for element [1.12], Weiss's monitoring device sends *biometric* and *activity related information* for a user to the processing device (*mobile device*). EX1007, 12:10-13; EX1003, ¶¶248-49. The processing device, *via its processor*, then *displays* this information in a user interface. For instance, the processing device includes a "reporting module" that "generat[es] and/or display[s] reports such as charts, tables, figures, data plots versus time or other parameters, summaries, or other compilations of data" relating to "data communicated by the monitoring device." EX1007, 17:3-31. The processing device "textually" or "graphically" displays data, such as "physiological parameters, location data, motion data, or other data associated with the monitoring device." EX1007, 19:29-20:4. The processing device also displays "data received from the monitoring device [] in substantially real-time." EX1007, 20:3-4.



EX1007, Fig. 3 (annotated).

2. Claim 11

a. [11.P]

The combination of Brown and Weiss teaches this element. EX1003, ¶251. As explained in Section VII.C, and for claim 1, Brown teaches a *system for establishing a wireless communications link between two mobile devices*. EX1006, Abstract. Weiss teaches a system in which a monitoring device (*wearable activity tracking device*) communicates wirelessly with a processing device (*mobile device*). EX1007, 2:8-20. In the combined system, Brown's wireless communication link establishment process would be used to establish the wireless communications link between Weiss's monitoring device and a mobile device, as taught by the combination of Brown and Weiss.

b. [11.A.1]

Weiss teaches this element for the reasons provided for element [1.4].
EX1003, ¶252.

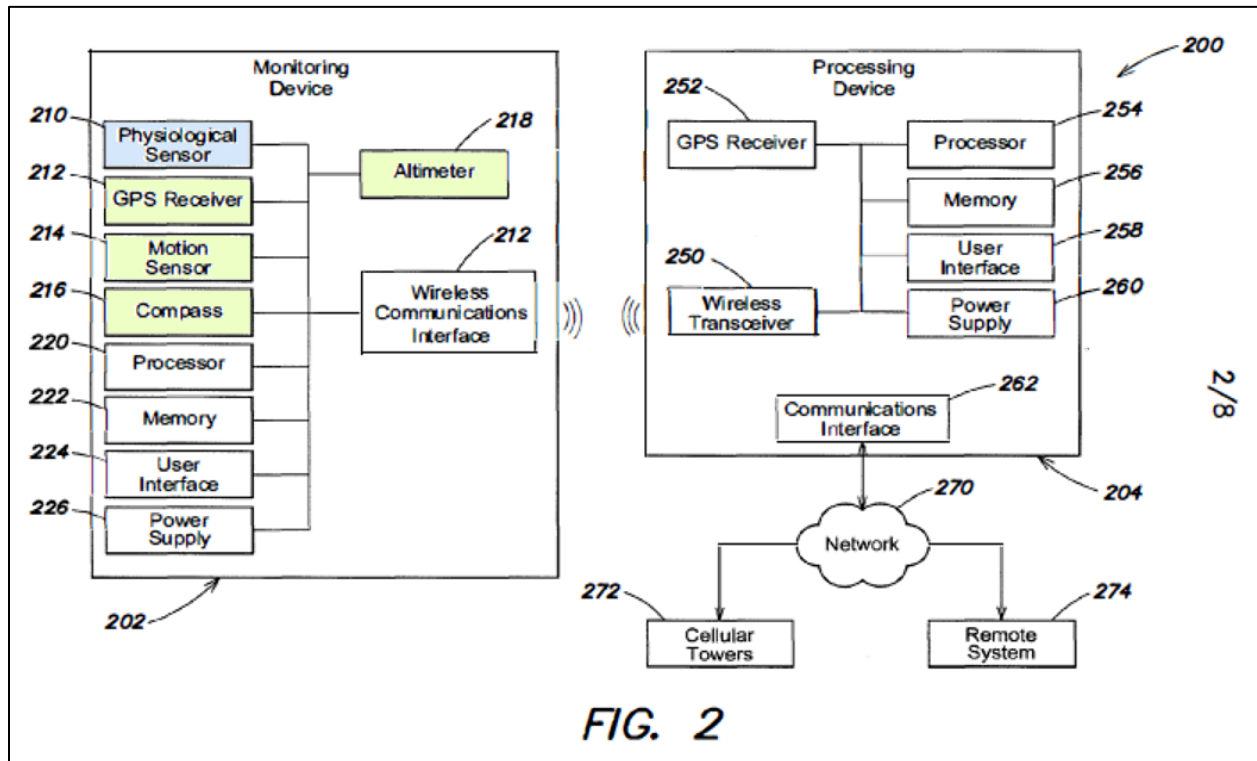
c. [11.A.2]

The combination of Brown and Weiss teaches this element. EX1003, ¶253.
Weiss's monitoring device includes a "user interface 224." EX1007, 11:14-16.
Brown's device 401 includes a display, on which it displays the barcode image.
EX1006, ¶¶37, 75, 79, *see also* ¶16. In the combined system, to the extent Weiss's monitoring device's user interface does not include a display device, it would be adapted to implement such display device as explained in Section VII.C. EX1003, ¶253. Thus, the combined Brown-Weiss monitoring device includes a *display device*. *Id.*

d. [11.A.3]

As explained for elements [1.4] and [1.12], Weiss's monitoring device (*wearable activity tracking device*) includes "a plurality of sensors for detecting one or more physiological attributes" (*bio-metric sensors*). EX1007, 2:11-15, *see also* 7:21-23, 11:26-29. The monitoring device also includes "a GPS receiver 212, a motion sensor 214 (e.g., accelerometer), a compass 216, and/or an altimeter 218 for detecting the location and motion of an individual wearing the device" (*activity tracking capability*). EX1007, 11:12-14, *see also* 12:3-9 ("monitoring device [] is adapted to determine a location and/or a movement of the user"); EX1003, ¶254-

55.

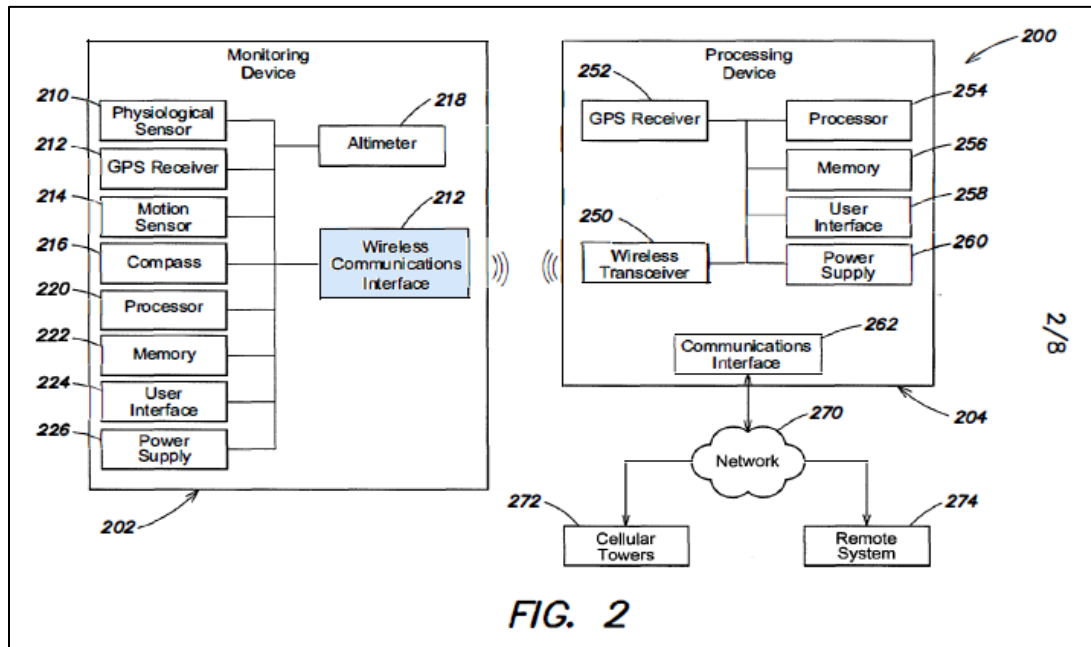


EX1007, Fig. 2 (annotated).

e. [11.A.4]

Weiss's monitoring device (*wearable activity tracking device*) includes a "wireless communications interface" that is a "Bluetooth™-compatible transmitter." EX1007, 11:10-12, *see also* 7:30-8:2 (monitoring device includes a "wireless transmitter 114, such as a Bluetooth™ transmitter, for transmitting data acquired from one or more of the sensors 112 to the processing device 120"). A POSA would have understood that the wireless communication interface comprises *wireless communication circuitry* to enable wireless communication with the processing device (*mobile device*) using, for instance, the Bluetooth protocol.

EX1003, ¶256.



EX1007, Fig. 2 (annotated).

f. [11.A.5]

The combination of Brown and Weiss teaches this element. EX1003, ¶257.

Weiss’s monitoring device includes a processor 220 that carries out the functionality of the device, and which may be “included in a microcontroller.” EX1007, 11:17-19. The monitoring device also includes “memory 222,” which “may be, for example, static RAM, dynamic RAM, ROM, EPROM, EEPROM, or flash memory.” EX1007, 11:16-19.

Moreover, as explained in Section VII.C, the combined Brown-Weiss monitoring device is adapted to implement Brown’s wireless pairing process. The combined monitoring device includes “software instructions stored on physical computer-readable storage media and executable by a processor” for implementing

the pairing functionality described below. EX1006, ¶106, *see also* ¶¶19, 70. The combined monitoring device thus includes at least one processor with software. The processor is also *in signal communication with the display device and the wireless communication circuitry*. See EX1006, ¶¶15 (“Microprocessor 102 may also interact with...display 110” and “short-range communications subsystem 122”), 49, 57; EX1003, ¶258.

g. [11.A.6]

The combination of Brown and Weiss teaches this element. EX1003, ¶259. As explained for element [11.A.5], Weiss’s monitoring device includes “memory” and a “wireless communications interface” (*wireless communication circuitry*). EX1007, 11:7-19. Brown’s device 401 also includes “a memory (e.g., random access memory, Flash memory, etc.),” and *wireless communication circuitry* in the form of a short-range communications subsystem, such as a “Bluetooth communication interface.” EX1006, ¶70, *see also* ¶¶15-16, 22. Brown’s memory is configured to store Bluetooth pairing data, including the MAC address (*wireless pairing information*), that is *associated with* the Bluetooth communication interface. For instance, the pairing data includes a PIN that is “stored in memory” of the device 401. EX1006, ¶72. As Dr. Shenoy explains, a POSA would have understood that the MAC address is stored in memory of the device 401 because it is a “unique network address that [was] assigned to [the] device (i.e., when it [was]

manufactured.” EX1006, ¶40; EX1003, ¶¶259-260.

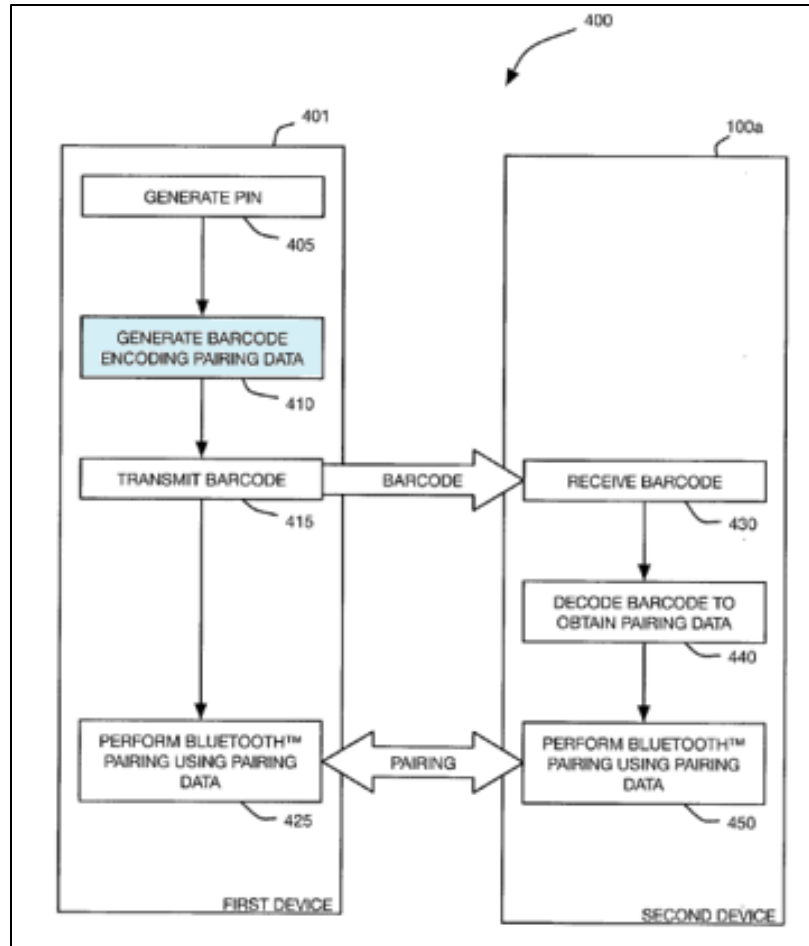
h. [11.A.7]

The combination of Brown and Weiss teaches this element. EX1003, ¶261. To generate a barcode encoding Bluetooth pairing data, including the PIN code and MAC address, Brown’s device 401’s *processor software* “select[s]” (*obtains*) the PIN code that is “stored in memory.” EX1006, ¶72, *see also* ¶75. A POSA would have also understood that the device also *obtains* the MAC address from memory because, as explained above, it is a “unique network address that [was] assigned to [the] device (i.e., when it [was] manufactured,” and is thus stored in memory. EX1006, ¶40; EX1003, ¶261.

Brown’s device 401 carries out the device pairing process “by executing an application (e.g. comprising one or more application modules).” EX1006, ¶70. The application is “provided as software instructions stored on physical computer-readable storage media and executable by a processor” (*processor software*) EX1006, ¶106, *see also* ¶57.

i. [11.A.8]

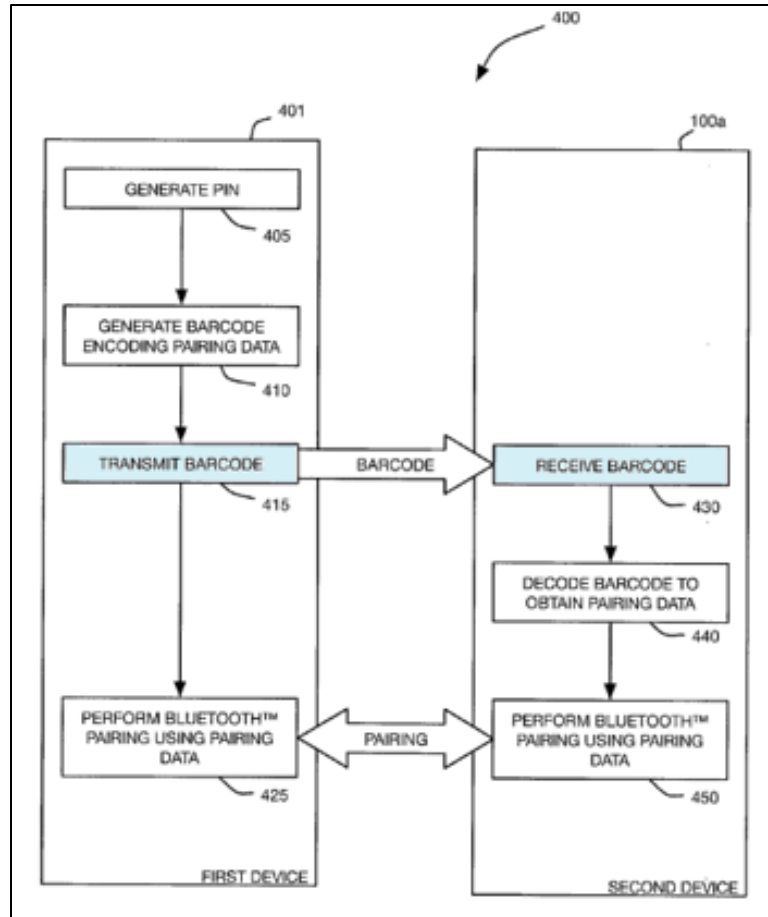
As explained for element [1.7], Brown’s device 401’s *processor software* “encodes Bluetooth pairing data” to generate a “color barcode.” EX1006, ¶¶2, 75-76, *see also* ¶¶57, 106. As also explained, Brown’s “color barcode” teaches or renders obvious the *color coded digital scanning media*. EX1003, ¶262.



EX1006, Fig. 4 (annotated).

j. [11.A.9]

Upon generating the image of the color barcode (*color coded digital scannable media image*) encoding the Bluetooth pairing data, Brown’s device 401’s *processor software* controls the display device by “displaying the image on a display.” EX1006, ¶79, *see also* ¶¶57, 106; EX1003, ¶263.



EX1006, FIG. 4 (annotated).

k. [11.A.10]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.11]. EX1003, ¶264. Specifically, Brown’s pairing process “establish[es] communications [between the devices] for the first time” (*establishes the wireless communications link*). EX1006, ¶41, *see also* ¶¶43 (pairing “establish[es] a communication link” between devices), 105 (“pairing data [used] to establish wireless connections between devices”), 57, 106. This occurs responsive to the mobile device scanning and decoding the color barcode. EX1006, ¶85.

l. [11.A.11]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.12]. EX1003, ¶265. Specifically, Weiss’s monitoring device includes “a plurality of sensors for detecting one or more physiological attributes.” (*bio-metric information*). EX1007, 2:11-20. The monitoring device also includes sensors “for detecting the location and motion of an individual wearing the device” (*activity tracking information*). EX1007, 11:12-14, *see also* 12:3-9.

The Brown-Weiss monitoring device generates such physiological attributes and location/motion data using the embedded sensors. EX1007, 7:21-23 (“Each sensor 112 can detect and measure, for example, one or a plurality of physiological attributes”), 12:3-4 (“monitoring device [] is adapted to determine a location and/or a movement of the user”). It does so using the *processor software* taught by the combination of Brown and Weiss. *See, e.g.*, EX1006, ¶¶57, 106.

m. [11.A.12]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.12]. EX1003, ¶266.

n. [11.B.1]

The combination of Brown and Weiss teaches this element for the reasons provided for elements [1.P] and [1.1]. EX1003, ¶267.

o. [11.B.2]

The combination of Brown and Weiss teaches this element for the reasons

provided for element [1.2]. EX1003, ¶268.

p. [11.B.3]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.3]. EX1003, ¶269.

q. [11.B.4]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.4]. EX1003, ¶270.

r. [11.B.5]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.5]. EX1003, ¶271.

s. [11.B.6]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.6]. EX1003, ¶272.

t. [11.B.7]

The combination of Brown and Weiss teaches this element for the reasons provided for elements [1.7] and [1.8]. EX1003, ¶273.

u. [11.B.8]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.9]. EX1003, ¶274.

v. [11.B.9]

The combination of Brown and Weiss teaches this element for the reasons

provided for element [1.10]. EX1003, ¶275.

w. [11.B.10]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.11]. EX1003, ¶276.

x. [11.B.11]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.12]. EX1003, ¶277.

y. [11.B.12]

The combination of Brown and Weiss teaches this element for the reasons provided for element [1.13]. EX1003, ¶278.

E. Dependent Claims

1. Claims 2 and 13

Brown's mobile device is a "two-way communication device with advanced data communication capabilities," such as "a cellular telephone with data messaging capabilities." EX1006, ¶11. A POSA would have understood that this is a *smartphone* because it includes software application(s) to "manage data items of interest to a subscriber, such as, but not limited to, e-mail, calendar events, voice mails, appointments, and task items." EX1006, ¶19, *see also* ¶17 (mobile device implements "web browsing and messaging such as e-mail, voice mail, Short Message Service (SMS), and Multimedia Messaging Services (MMS)"); EX1003, ¶280.

Moreover, Weiss’s processing device (*mobile device*) can be “smartphone,” such as an “iPhone” or “Blackberry.” EX1007, 12:14-18. Thus, the combination of Brown and Weiss teaches this claim. EX1003, ¶281.

2. Claim 3

Brown’s *wireless communications link* is implemented using the Bluetooth protocol, which is “a voice and data wireless communication protocol commonly used for short-range communications between electronic devices.” EX1006, ¶40. As Dr. Shenoy explains, a POSA would have understood that Bluetooth communication links are *two-way wireless communications links*. EX1003, ¶283.

3. Claims 4 and 15

Brown’s Bluetooth pairing data includes a MAC address of the device 401 (*wireless pairing information*). EX1006, ¶75. In the combined Brown-Weiss system, the MAC address would be associated with Weiss’s monitoring device (*wearable activity tracking device*). A POSA would have understood that this MAC address is also a *unique identification number* because the device is a “unique network address” that “identifie[s]” the device. EX1006, ¶40, *see also* ¶56; EX1003, ¶285.

4. Claims 5 and 17

As explained for element [1.7], Brown teaches or renders obvious the claimed *color coded digital scannable media*. Brown’s “color barcode” is a *representation of non-human readable information using colored pixels* and can be

a “2-dimensional barcode” (*2D Matrix code*), such as a QR code. EX1006, ¶75, *see also* ¶36; EX1003, ¶¶287-88.

5. Claims 6 and 18

Weiss’s monitoring device (*wearable activity tracking device*) includes an “accelerometer... for detecting the location and motion of an individual wearing the device” (*activity-related information*). EX1007, 11:12-14, *see also* 12:6-8, 14:2-5 (monitoring device communicates “location data” and “motion data” to the processing device); EX1003, ¶290.

6. Claims 7 and 16

Weiss’s monitoring device generates *bio-metric information* from “a plurality of sensors for detecting one or more physiological attributes, including, but not limited to, pulse, blood oxygen level, temperature, respiration, heart waveform, heart-rate, galvanic skin response, activity, perspiration, body fluid chemistry, and other such detectable attributes.” EX1007, 2:8-15. Weiss’s sensors also detect “blood pressure” and “blood glucose.” EX1007, 23:9-15; EX1003, ¶292.

7. Claims 8 and 12

Brown’s *communication circuitry* is configured to implement a Bluetooth wireless connection link, which is a *personal area network communications link*. *See* EX1006, ¶¶22, 40, 70; *see also* EX1009, ¶40; EX1003, ¶294. Indeed, the “Bluetooth protocol is a voice and data wireless communication protocol

commonly used for short-range communications between electronic devices.”

EX1006, ¶40.

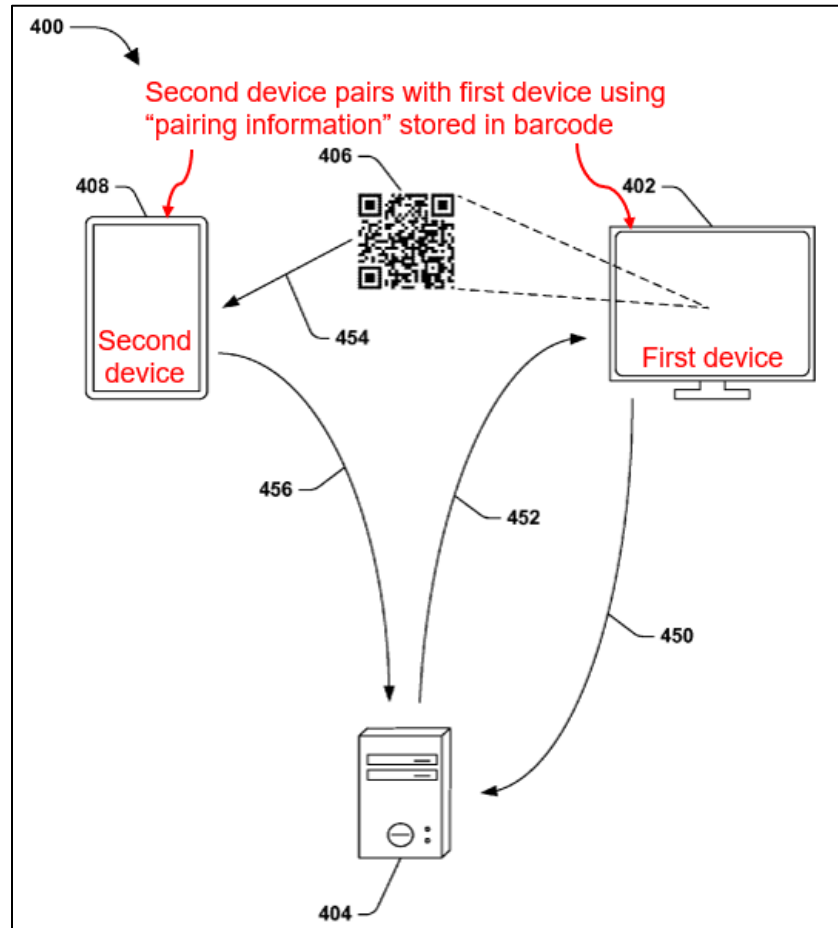
8. Claim 14

Weiss’s monitoring device (*wearable activity tracking device*) is a wearable health monitoring device for the reasons provided for element [1.4]. *See also* EX1007, 2:8-9:4. It is also a *smartwatch* because it can be “integrated into... a wristwatch.” EX1007, 7:26-29. In such configuration, the monitoring device is a *smartwatch* because it includes a “processor” for determining user vital signs, and a “wireless communications interface” for establishing wireless connections with other devices. EX1007, 11:7-12:18; EX1003, ¶296.

VIII. GROUND 3B: BROWN-WEISS FURTHER IN VIEW OF ORT TEACHES CLAIMS 1-8, 11-18

As explained in Section VII, Brown-Weiss renders obvious all elements of claims 1-8 and 11-18. EX1003, ¶297. However, to the extent that Brown’s color barcode is not *color coded* as claimed, a POSA would have found it obvious to implement such a color-coded barcode. *Id.* For instance, Ort discloses techniques “for joining two or more devices in a multi-device communication session.” EX1008, Abstract. In Ort, a first device displays to a second device a “visual tag” in the form of an HCCB that comprises “pairing information” that is “used to join a plurality of devices in a shared communication session.” EX1008, ¶6, *see also* ¶20. The second device “capture[s] the image of the tag displayed by the first device,”

“retrieve[s] the device-session pairing information from the tag, and use[s] the information... to... join the session initiated by the first device.” EX1008, ¶23.



EX1008, Fig. 4 (annotated).

A POSA would have recognized Brown and Ort’s similarities, and thus the applicability of using Ort’s HCCB to encode Brown’s device pairing information. EX1003, ¶298. As explained, Brown teaches color-coded barcodes through its disclosure of a “color barcode.” *See* EX1006, ¶¶2, 76, *see also* ¶¶36, 75. However, to the extent that Brown’s color barcode is not the color-coded barcode as claimed, Ort’s HCCB is. *See* Section V.D.1.h.

HCCBs are advantageous over black-white barcodes because they provide a higher data density. EX1003, ¶¶298-99. A POSA would have recognized the benefits and applicability of implementing Ort's HCCB in Brown-Weiss. EX1003, ¶300. Moreover, simply changing the type of barcode used in the Brown-Weiss system, as taught by Ort, would not have otherwise impacted the Brown-Weiss combination beyond software changes necessary to implement the HCCB, and a POSA would not have had any trouble implementing Ort's disclosures in Brown-Weiss. EX1003, ¶¶300-01. A POSA would have found it obvious to implement Brown's "color barcode" as an HCCB as merely a simple substitution of one known element (Ort's HCCB) for another (Brown's barcode) to obtain predictable results (encoding device pairing data). *Id.*

Thus, the combination of Brown, Weiss, and Ort renders obvious the claimed *color coded digital scannable media*. EX1003, ¶302. As Dr. Shenoy explains, when implemented as an HCCB, the barcode is also a *representation of non-human readable information using colored pixels* and a *2D Matrix code*, as required by claims 5 and 17. *Id.* Brown-Weiss-Ort renders obvious all other elements of claims 1-8 and 11-18 for the reasons provided in Section VII. *Id.*

IX. GROUNDS 4A AND 4B: BROWN-WEISS AND BROWN-WEISS-ORT FURTHER IN VIEW OF WILLIAMS RENDERS OBVIOUS CLAIMS 9-10, 19-20

As explained in Section VI, Williams teaches a Bluetooth pairing process in

which a first device encrypts wireless pairing information that is encoded in a barcode image, and a second device captures the image and decrypts pairing information to establish the Bluetooth connection. EX1009, ¶¶26-28, 29. A POSA would have found it obvious to implement these techniques in Brown-Weiss (and Brown-Weiss-Ort) to provide increased security of the device pairing process. EX1003, ¶¶304-308.

Brown implements a “secure” pairing process by encoding Bluetooth pairing data in barcodes. Williams’s technique provides improved security by encrypting similar pairing data. *Id.* Encrypting the data encoded in Brown’s barcode would ensure that only parties with the relevant encryption key would be able to decipher the pairing data and pair with the device.

Indeed, as Dr. Shenoy explains, encryption/decryption was a well-known technique for implementing secure communications. EX1003, ¶309. Furthermore, it was well known to encrypt/decrypt information encoded in barcodes. *Id.* A POSA would have thus found it obvious to encrypt/decrypt Brown-Weiss and Brown-Weiss-Ort’s graphically encoded data, as taught by Williams, and would have had a reasonable expectation of success in doing so. EX1003, ¶¶307-310. Encryption was commonly performed to secure data and a POSA would have readily understood how to implement William’s encryption techniques. *Id.* For instance, a POSA would have readily understood how to implement and

communicate suitable keys for encrypting and decrypting the data in accordance with well-established and conventional techniques. *See, e.g.*, EX1009, ¶¶9, 43. This would have been obvious as merely requiring the use of a known technique (encrypted barcode images) to improve similar processes (wireless pairing processes) in the same way (provide enhanced security). EX1003, ¶310.

Thus, the combination of Brown, Weiss, and Williams, and the combination of Brown, Weiss, Ort, and Williams renders obvious claims 9, 10, 19, and 20. EX1003, ¶311.

X. CERTIFICATION UNDER RULE 42.104(A)

Petitioner certifies that the '394 patent is available for IPR and Petitioner is not barred or estopped from requesting IPR of any claim.

XI. MANDATORY NOTICES (37 C.F.R. § 42.8(A)(1))

A. Real Party-in-Interest (37 C.F.R. § 42.8(b)(1)):

The real party-in-interest is Petitioner Apple Inc.

B. Related Matters (37 C.F.R. § 42.8(b)(2))

The '394 patent is at issue in *iScan2D Technologies, LLC v. Apple Inc.*, 1-25-cv-01794 (W.D. Tex).

C. Lead and Back-up Counsel (37 C.F.R. § 42.8(b)(3))

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D. Service Information (37 C.F.R. § 42.8(b)(4))

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XII. CONCLUSION

The Board should find all claims to be unpatentable.

Respectfully submitted,

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CERTIFICATE OF WORD COUNT (37 C.F.R. § 42.24(d))

1. This Petition for *Inter Partes* Review complies with the type-volume limitation of 14,000 words, comprising 13,998 words, excluding the parts exempted by 37 C.F.R. § 42.24(a)(1).

2. This Petition for *Inter Partes* Review complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word 2016 in 14-point Times New Roman font.

Respectfully submitted,

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CERTIFICATE OF SERVICE (37 C.F.R. §§ 42.6(e), 42.105(a))

I certify that the above-captioned **PETITION FOR *INTER PARTES***
REVIEW FOR U.S. PATENT NO. 12,230,394 and associated Exhibits 1001-
1033 were served in their entireties upon the Patent Owner on May 18, 2026, via
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