

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Peter Zatloukal, et al.
U.S. Patent No.: 9,405,947 Attorney Docket No.: 50095-0182IP1
Issue Date: August 2, 2016
Appl. Serial No.: 13/750,970
Filing Date: January 25, 2013
Title: EMULATED RADIO FREQUENCY IDENTIFICATION

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PETITION FOR *INTER PARTES* REVIEW OF UNITED STATES

PATENT NO. 9,405,947 PURSUANT TO 35 U.S.C. §§ 311–319,

37 C.F.R. § 42

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APPLE-1004	U.S. Patent Publication No. 2005/0083177 (“Willgert”)
APPLE-1005	U.S. Patent Publication No. 2003/0045235 (“Mooney”)
APPLE-1006	International Pub. No. WO 02/49322 (“Holloway”)
APPLE-1007	U.S. Patent No. 7,308,426 (“Pitroda”)
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APPLE-1010	U.S. Patent No. 5,943,624 (“Fox”)
APPLE-1011	U.S. Patent Publication No. 2003/0187787 (“Freund”)
APPLE-1012	International Pub. No. WO 98/43366 (“Schlang”)
APPLE-1013	Hallberg & Nilsson, “Positioning with Bluetooth, irDA and RFID,” Master’s Thesis, 2002:125 (Jan. 2002) (“Hallberg”)
APPLE-1014	Takikawa, Kumiko, et al. "RF circuits technique of dual-band transceiver IC for GSM and DCS1800 applications." Proceedings of the 25th European Solid-State Circuits Conference. IEEE, 1999 (“Takikawa”)

APPLE-1015	Razavi, Behzad, “A 900-MHz/1.8-GHz CMOS Transmitter for Dual Band Applications,” IEEE Journal of Solid-State Circuits, Vol. 34, No. 5, May 1999 (“Razavi”)
APPLE-1016	“Cell Phone Use on the Roads in 2002,” Technical Report DOT HS 809 580, National Highway Traffic Safety Administration (Dec. 2004)
APPLE-1017	Scheiderman, “Bluetooth’s slow dawn,” 2000 IEEE 61-65 (“Scheiderman”)
APPLE-1018	Tapley, Byron D., “Eshbach’s Handbook of Engineering Fundamentals,” Wiley-Interscience (Edition 4), 1990, ISBN 10: 0471890847 (“Tapley”)
APPLE-1019	Smart Card Alliance, “Contactless Technology for Secure Physical Access: Technology and Standards Choices” (October 2002)
APPLE-1020	U.S. Patent No. 5,748,737 (“Daggar”)
APPLE-1021	Arfwedson & Sneddon, “Ericsson’s Bluetooth modules,” Ericsson Review No. 4, 1999 (“Arfwedson”)
APPLE-1022-APPLE-1049	RESERVED
APPLE-1050	Complaint, <i>Varia Holdings LLC v. Apple Inc.</i> , 23-cv-7477, E.D.N.Y (filed October 5, 2023)
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APPLE-1052	Appendix C: Claim Chart for U.S. Patent No. 9,405,947, <i>Varia Holdings LLC v. Apple Inc.</i> , 23-cv-7477, E.D.N.Y (February 26, 2024)

APPLE-1053	Memorandum of Law in Support of Plaintiff’s Opposition to Defendant’s Motion to Dismiss the Complaint, <i>Varia Holdings LLC v. Apple Inc.</i> , 23-cv-7477, E.D.N.Y (February 14, 2024)
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APPLE-1060	Varia Holdings LLC’s Opening Claim Construction Brief, <i>Varia Holdings LLC v. Apple Inc.</i> , 23-cv-7477, E.D.N.Y (June 11, 2024)
APPLE-1061	Apple Inc.’s Responsive Claim Construction Brief, <i>Varia Holdings LLC v. Apple Inc.</i> , 23-cv-7477, E.D.N.Y (July 30, 2024)
APPLE-1062	Varia Holding LLC’s Reply Brief Regarding Claim Construction, <i>Varia Holdings LLC v. Apple Inc.</i> , 23-cv-7477, E.D.N.Y (August 21, 2024)

LISTING OF CHALLENGED CLAIMS

Claim 1	
[1.pre]	A method for operating a mobile communication device comprising:
[1.1]	receiving, by the mobile communication device, a radio frequency identification (RFID) probing signal from an RFID reader external to the mobile communication device;
[1.2]	executing, on processing circuitry in the mobile communication device, instructions stored in a memory in the mobile communication device,
[1.3]	the instructions configured to cause the mobile communication device to: output an RFID signal and output a voice call signal,
[1.4]	wherein the RFID signal is output in response to the mobile communication device determining the mobile communication device is in an operational space of the RFID reader based upon receipt of the RFID probing signal, and
[1.5]	wherein the voice call signal is output over a wireless network and within a radio frequency range that is different than a radio frequency range used to output the RFID signal.

Claim 2	
[2]	The method of claim 1, wherein the RFID signal includes RFID data comprising a selected one of a security key and an identifier.
Claim 3	
[3]	The method of claim 2, wherein the security key comprises a selected one of a garage door key, an exterior door key, an interior door key, and a motor vehicle door key.
Claim 4	
[4]	The method of claim 2, wherein the identifier comprises a selected one of a social security number, a driver's license number, an affinity program account number, and a credit card number.
Claim 5	
[5]	The method of claim 2, wherein the method further comprises facilitating a user in selecting the RFID data from a plurality of the RFID data using the mobile communication device.

Claim 6	
[6]	The method of claim 2, wherein the method further comprises facilitating provision of the RFID data to the mobile communication device.
Claim 7	
[7]	The method of claim 6, wherein facilitating provisioning of the RFID data to the mobile communication device includes facilitating provision of at least a signaling attribute associated with the outputting of the RFID data.
Claim 8	
[8]	The method of claim 1, wherein the mobile communication device is one of a wireless mobile phone and a personal digital assistant equipped with communication capability.
Claim 9	
[9.pre]	A method for operating a mobile communication device comprising:
[9.1]	executing, on processing circuitry in the mobile communication device, instructions stored in a memory in the mobile communication device,

[9.2]	the instructions configured to cause the mobile communication device to monitor, output an RFID signal, and output a voice call signal;
[9.3]	wherein the monitoring comprises monitoring for a proximal presence of a radio frequency identification (RFID) reader external to the mobile communication device and determining the mobile communication device is in an operational space of the RFID reader based on an RFID probing signal received by the mobile communication device from the RFID reader;
[9.4]	wherein the outputting of the RFID signal comprises outputting the RFID signal in response to determining the mobile communication device is within the proximal presence of the RFID reader based u on receipt of the RFID robin signal; and
[9.5]	wherein the outputting of the voice call signal comprises outputting the voice call signal over a wireless network in a radio frequency range different than a radio frequency range in which the RFID signal is output.

Claim 10	
[10]	The method of claim 9, wherein the RFID signal includes RFID data comprising a security key.
Claim 11	
[11]	The method of claim 10, wherein the security key comprises a door key.
Claim 12	
[12]	The method of claim 11, wherein the door key comprises a selected one of a garage door key, an exterior door key, an interior door key, and a motor vehicle door key.
Claim 13	
[13]	The method of claim 10, wherein the instructions are further configured to cause the mobile communication device to facilitate provision of the RFID data to the mobile communication device.
Claim 14	
[14]	The method of claim 13, wherein facilitating provisioning of the RFID data to the mobile communication device includes facilitating provision of at least a signaling attribute associated with the outputting of the RFID data.

Claim 15	
[15]	The method of claim 9, wherein the mobile communication device is one of a wireless mobile phone and a personal digital assistant equipped with communication capability.
Claim 16	
[16.pre]	A mobile communication device comprising:
[16.1]	communication circuitry configured to output voice call signals in a first radio frequency range over a wireless network and output radio frequency identification (RFID) signals in a second radio frequency range, which is different than the first radio frequency range;
[16.2]	processing circuitry; and
[16.3]	a storage medium including instructions, which, when executed by the processing circuitry cause the mobile communication device to:
[16.4]	monitor for a proximal presence of an RFID reader external to the mobile communication device via the communication circuitry,
[16.5]	the monitoring comprising determining the mobile communication device is in an operational space of the RFID

	reader based on an RFID probing signal received by the mobile device from the RFID reader;
[16.6]	output a voice call signal for transmission over a wireless network via the communication circuitry in the first radio frequency range; and
[16.7]	output an RFID signal via the communication circuitry in response to detection of the proximal presence of the RFID reader external to the mobile communication device based upon receipt of the RFID probing signal, wherein the RFID signal is output in the second radio frequency range.
Claim 17	
[17]	The mobile communication device of claim 16, wherein the RFID signal includes RFID data comprising a selected one of a security key and an identifier.
Claim 18	
[18]	The mobile communication device of claim 17, wherein the security key comprises a door key.

Claim 19	
[19]	The mobile communication device of claim 18, wherein the door key comprises a selected one of a garage door key, an exterior door key, an interior door key, and a motor vehicle door key.
Claim 20	
[20]	The mobile communication device of claim 17, wherein the identifier comprises a selected one of a social security number, a driver's license number, an affinity program account number, and a credit card number.
Claim 21	
[21]	The mobile communication device of claim 17, wherein the instructions are further configured to cause the mobile communication device to facilitate a user in selecting the RFID data from a plurality of RFID data.
Claim 22	
[22]	The mobile communication device of claim 17, wherein the instructions are further configured to cause the mobile communication device to facilitate provision of the RFID data to the mobile communication device.

Claim 23	
[23]	The mobile communication device of claim 22, wherein the instructions are further configured to cause the mobile communication device to include provisioning of at least a signaling attribute associated with the RFID data in the form of a radio frequency signal.
Claim 24	
[24]	The mobile communication device of claim 17, wherein the RFID data includes information identifying a user.
Claim 25	
[25]	The mobile communication device of claim 16, wherein the mobile communication device is one of a wireless mobile phone and a personal digital assistant equipped with communication capability.
Claim 26	
[26.pre]	A mobile communication device comprising:
[26.1]	communication circuitry configured to transmit voice call signals in a first radio frequency range over a wireless network;
[26.2]	processing circuitry; and

[26.3]	a memory storing instructions, which, when executed by the processing circuitry cause the mobile communication device to:
[26.4]	monitor for a proximal presence of a radio frequency identification (RFID) reader external to the mobile communication device via the communication circuitry,
[26.5]	the monitoring comprising determining the mobile communication device is in an operational space of the RFID reader based on an RFID probing signal received by the mobile communication device from the RFID reader;
[26.6]	in response to determining the mobile communication device is in the operational space of the RFID reader based upon the receipt of the RFID probing signal, output an RFID signal via the communication circuitry in a second radio frequency range that is different than the first radio frequency range; and
[26.7]	transmit a voice call signal to another mobile communication device via the communication circuitry at least in part over a wireless network in the first radio frequency range.

Claim 27	
[27]	The mobile communication device of claim 26, wherein the RFID signal includes RFID data comprising a security key.
Claim 28	
[28]	The mobile communication device of claim 27, wherein the security key comprises a door key.
Claim 29	
[29]	The mobile communication device of claim 28, wherein the door key comprises a selected one of a garage door key, an exterior door key, an interior door key, and a motor vehicle door key.
Claim 30	
[30]	The mobile communication device of claim 26, wherein the instructions are further configured to cause the mobile communication device to facilitate provision of RFID data to the mobile communication device.
Claim 31	
[31]	The mobile communication device of claim 30, wherein the instructions are further configured to cause the mobile communication device to include provisioning of at least a

	signaling attribute associated with the outputting of the RFID data in the form of a radio frequency signal.
Claim 32	
[32]	The mobile communication device of claim 26, wherein the mobile communication device is one of a wireless mobile phone and a personal digital assistant equipped with communication capability.

Apple Inc. (“Petitioner,” “Apple”) petitions for *Inter Partes* Review (“IPR”) of claims 1-32 (“Challenged Claims”) of U.S. Patent No. 9,405,947 (“’947 patent”). Compelling evidence presented in this Petition demonstrates at least a reasonable likelihood that Apple will prevail with respect to at least one of the Challenged Claims.

I. REQUIREMENTS

A. Standing

Apple certifies that the ’947 patent is available for IPR. This petition is being filed within one year of service of a complaint against Apple. APPLE-1050. Apple is not barred or estopped from requesting review of the Challenged Claims on the below-identified grounds.

B. Challenge

Apple requests an IPR of the Challenged Claims based on supporting testimony from Dr. Zhi Ding. APPLE-1003, ¶¶18-30.

Ground	Claims	35 U.S.C. § 103
1A	1, 2, 6-9, 13-17, 22, 23, 25, 26, 30-32	Willgert, Mooney
1B ¹	1, 2, 6-8	Willgert

¹ Ground 1B applies claim interpretations advanced by Varia and thereby demonstrates satisfaction in a manner consistent with Varia’s infringement

Ground	Claims	35 U.S.C. § 103
2	2-7, 10-14, 17-24, 27-31	Willgert, Mooney, Holloway, Pitroda

The '947 patent claims priority to U.S. Provisional App. No. 60/478,245, filed 6/13/2003 ("Critical Date"). APPLE-1001, Cover. Apple does not concede that the '947 patent is entitled to the claimed priority date. The references below qualify as prior art: APPLE-1003, ¶¶18-30.

Reference	Filing Date	Publication Date
Willgert	11/6/2002	4/21/2005
Mooney	9/5/2001	3/6/2003
Holloway	12/11/2001	6/20/2002
Pitroda	8/11/1999	12/11/2007

II. THE '947 PATENT

allegations. *See* APPLE-1052. Ground 1B is not an endorsement of Varia's constructions since "37 C.F.R. §104(b)(3) does not require Petitioner to express its subjective agreement regarding correctness of its proffered claim constructions or to take ownership of those constructions." IPR2018-00084 Pap. 14, 10-11 (PTAB April 25, 2018); *see* IPR2020-00086 Pap. 8, 18 (PTAB Apr. 27, 2020) ("an explicit statement of reliance on a PO's litigation constructions 'suffices to identify claim constructions Petitioner is adopting for purposes of the requested review in compliance with § 104(b)(3)'").

A. Specification

The '947 patent describes a “mobile communication device” that is “equipped with hardware and/or software to enable the device to output [] data in a form of a radio frequency signal” using “either an active or a passive RFID transponder.” APPLE-1001, Abstract; 2:24-39;² APPLE-1003, ¶37.

Figure 1 shows an example of a system:

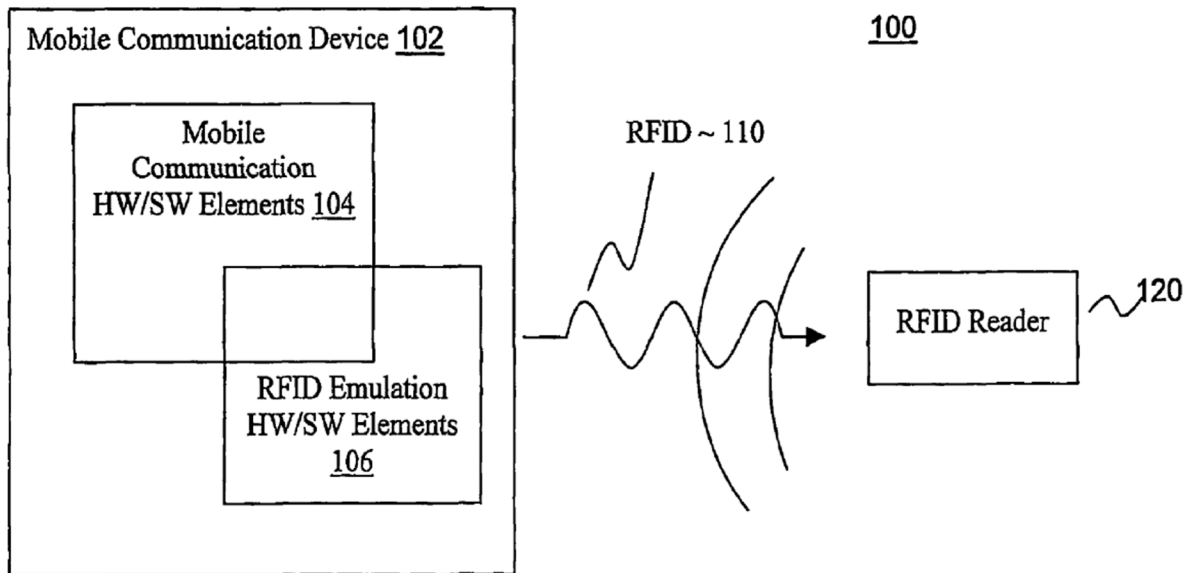


Figure 1

APPLE-1001, FIG. 1

² While the '947 patent specification describes an “emulated RFID method,” the independent claims do not recite “emulation” or “emulated RFID method.”

Mobile communication device 102 includes hardware and/or software elements 104 for a “primary function” of device 102 to allow a user to “engage in communication with another user of another communication device.” APPLE-1001, 3:31-48. Hardware and/or software elements 106 “facilitate provision or transfer of a key/identifier in a form of radio frequency signal 110, which may be read, e.g., by a radio frequency identifier (RFID) reader 120.” *Id.* Further, “in preferred embodiments,” “substantial portions of the hardware and/or software elements to provide a RFID, are the same elements employed to facilitate the primary function of device 102, i.e., to facilitate a user in communicating with another user...” *Id.*, 3:50-56. Indeed, these embodiments are described as “advantageously leverag[ing] existing elements of mobile communication device 102” to “provide a RFID, emulat[e] a RFID transponder, as well as facilitate[e] user communication.” *Id.*, 3:58-63. RFID 110 may be “any keys,” e.g., “security keys, such as garage door ‘keys’,” or “identifiers,” e.g., “employee numbers, driver’s license numbers, social security numbers, credit card numbers...” *Id.*, 4:1-6; APPLE-1003, ¶¶38-39.

Figure 3 shows components of device 102:

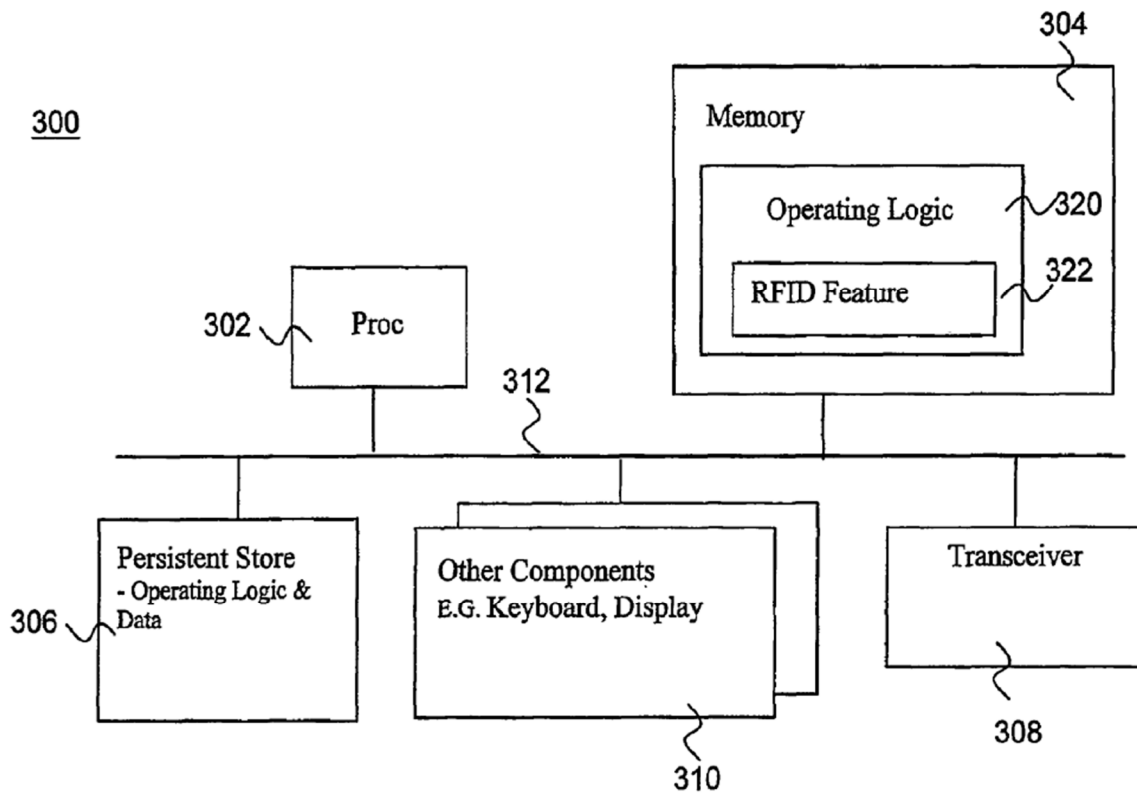


Figure 3

APPLE-1001, FIG. 3

Device 102 includes “processor 302, memory 304, persistent store 306, transceiver 308,” as well as “other components 310, coupled to each other via bus 312.”

APPLE-1001, 5:17-22; APPLE-1003, ¶¶40-41.

Figure 4 shows elements of transceiver 308:

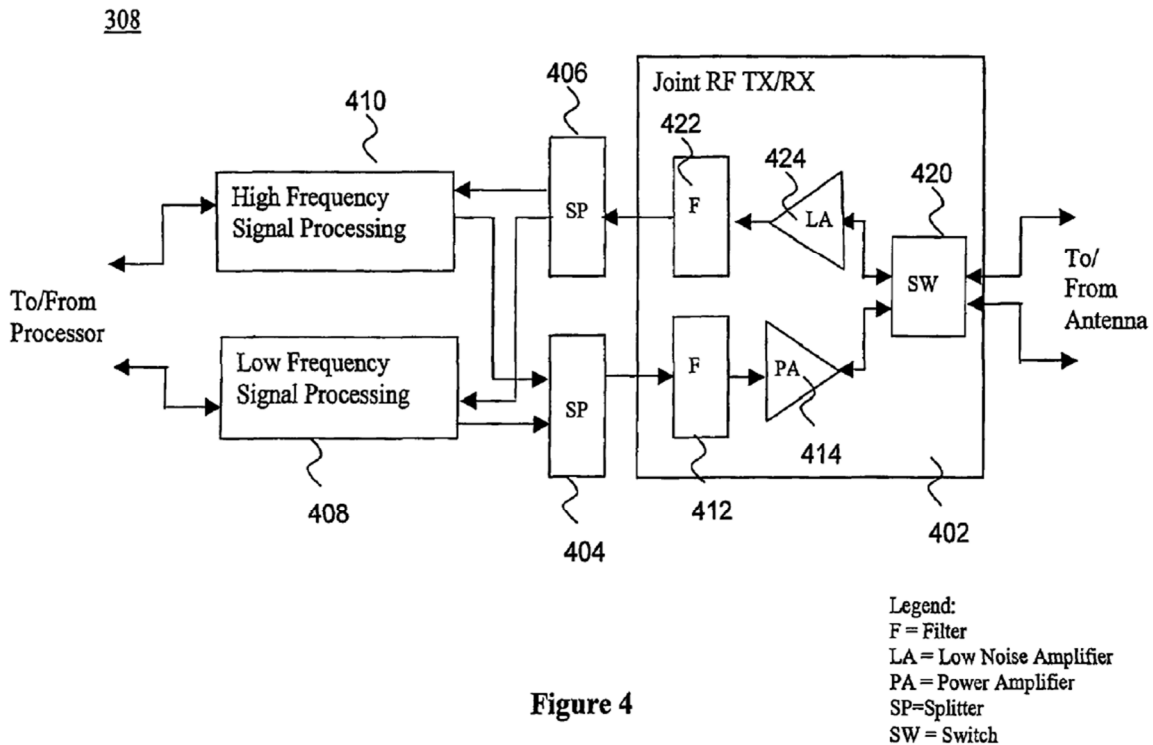


Figure 4

APPLE-1001, FIG. 4

Transceiver 308 “includes a joint radio frequency (RF) transmit/receive (TX/RX) section 402, separate signal processing sections 408 and 410 for a range of higher frequencies and a range of low frequencies, switch 404³ and splitter 406.” APPLE-1001, 6:60-67. Additionally, “[f]or transmission, switch 404 switches between the output of high frequency signal processing 410 and the output of low frequency

³ Figure 4 incorrectly labels the element identified with reference numeral 404 as “SP.” Based on the corresponding description, “SP” 404 in Figure 4 should be identified as “SW” 404. *See* APPLE-1001, 6:56-7:8.

signal processing 408 to the transmit path of joint RF TX/RX 402.” *Id.*, 7:1-8.

High frequency signal processing 410 “performs up and down conversions of the transmit and receive signals of the primary communication function of mobile communication device 102, e.g. the transmit and receive signals of a voice call.”

Id., 7:17-23. Low frequency signal processing 408 “performs up and down conversions of the transmit and receive signals of the RFID feature, e.g. the output signal of a RFID,” which acts as “either an active or a passive transponder, and the received probing signal of a RFID reader.” *Id.*, 7:24-30; APPLE-1003, ¶¶42-43.

B. Relevant Prosecution

During prosecution of the '947 patent, the Examiner applied prior art rejections over U.S. Pat. No. 6,771,981 (“Zalewski”), U.S. Pat. No. 2004/0111360 (“Albanese”), and U.S. Pat. No. 6,837,427 (“Overhultz”). *See* APPLE-1002, 227-238, 503-10, 518-34, 546-53, 568-69, 588-99. In allowing the claims, the Examiner identified “the limitations of the independent claims above, including at least the outputting of the RFID signal in response to determining of being in the operational space of the RFID reader based on receipt of the probing signal and outputting the RFID signal and voice call signal in the different radio frequency ranges as set forth in the claims.” APPLE-1002, 41; APPLE-1003, ¶44.

C. Claim Construction

Because the Challenged Claims are obvious under any reasonable

interpretation, no formal claim constructions are required in this proceeding.

Wellman, Inc. v. Eastman Chem. Co., 642 F.3d 1355, 1361 (Fed. Cir. 2011);

APPLE-1003, ¶45. Apple reserves the right to respond to any constructions offered by Varia or adopted by the Board.

The parties have submitted claim construction briefing in a district court litigation involving the '947 patent in the Eastern District of New York (*Varia Holdings LLC v. Apple Inc.*, 23-cv-7477, E.D.N.Y.) (“Litigation”). APPLE-1059; *see* APPLE-1060; APPLE-1061. The proposed claim constructions (in the table below) are preliminary, and (as the filing of this Petition) the district court has not issued a claim construction order.⁴ APPLE-1003, ¶47.

Claim Term	Apple’s Proposed Construction	Varia’s Proposed Construction
“transceiver”	A single component within the mobile communication[s] device	The components responsible for transmitting and receiving signals in a mobile

⁴ Apple does not concede that each of the Challenged Claims satisfy all statutory requirements, such as 35 U.S.C. §112. Apple is not waiving any arguments concerning other grounds that can only be raised in district court. *See* [9.3], [9.4], [16.4], [16.7], [26.4] (*proximal presence*).

	that includes common circuitry for transmitting and receiving both RFID and voice signals to/from an antenna	communications device that are integrated into the electronics of the device
“transmitter”	A single component within the mobile communication[s] device that includes common circuitry for transmitting both RFID and voice signals to an antenna	The components responsible for transmitting signals in a mobile communications device that are integrated into the electronics of the device
“communication circuitry”	A single component within the mobile communication[s] device that includes common circuitry for transmitting and receiving both RFID	The combination of circuits responsible for outputting voice call and RFID signals, and receiving RFID signals, that are integrated into the electronics of the device

	and voice signals to/from an antenna	
“switchable mobile communication[s] device”	Mobile communication[s] device configured to switch between an RFID state and a voice call signal state	To the extent the preamble is limiting: mobile communication[s] device capable of changing states
“proximal presence” / “proximal RFID reader”	Indefinite	Plain and ordinary meaning
“operational space”	Indefinite	Plain and ordinary meaning
“on detection of the RFID reader...outputting ...second RFID transponder data...”	The [RFID transponder data / RFID signal] is outputted automatically whenever the mobile communication[s] device is within the [operational space / proximal presence] of the RFID reader	Plain and ordinary meaning

“[facilitate / facilitating] the user” / “[facilitate / facilitating] a user”	Indefinite	Plain and ordinary meaning
“u on receipt of the RFID robin signal [sic]”	Correcting to: Upon receipt of the RFID probing signal	

Varia seeks to broaden claim scope in the Litigation. *See, e.g.*, APPLE-1053, 13; *see* §III.B.2(i). Regardless, the prior art advanced in this Petition ultimately satisfies the claim language under either party’s interpretation. This is demonstrated by Ground 1A, which applies the prior art based on Apple’s interpretations based on the claim language and prosecution history, and Ground 1B, which applies the prior art based on Varia’s interpretations in the Litigation. Thus, no formal claim construction is required in this proceeding. APPLE-1003, ¶¶46-48.

III. UNPATENTABILITY

A. [GROUND 1A] – Claims 1, 2, 6-9, 13-17, 22, 23, 25, 26, And 30-32 Are Obvious Over Willgert-Mooney

1. Willgert-Mooney

(i) *Willgert*

Willgert is generally directed to a “communications unit for identifying objects or persons.” APPLE-1004, Abstract. The communications unit includes a “receiver/transmitter unit” operable with a “Bluetooth communications system,” as well as a “transponder” operable with an “RFID system.” *Id.*; APPLE-1003, ¶48.

Willgert recognizes the need to have Bluetooth and RFID functionality for “different applications,” though this “result[] in higher costs.” APPLE-1004, [0008]. It is also “troublesome for a user to carry two systems on his/her person.” *Id.* To address this problem, Willgert proposes “provid[ing] a solution...that significantly lowers the costs and affords simpler handling.” *Id.*, [0009]. The solution is embodied in the “communications unit” being “integrated” within a telephone, thereby enabling Bluetooth and RFID transmission by the same device. *Id.*, [0010]; APPLE-1003, ¶49.

Figure 1 shows an example of a communications unit:

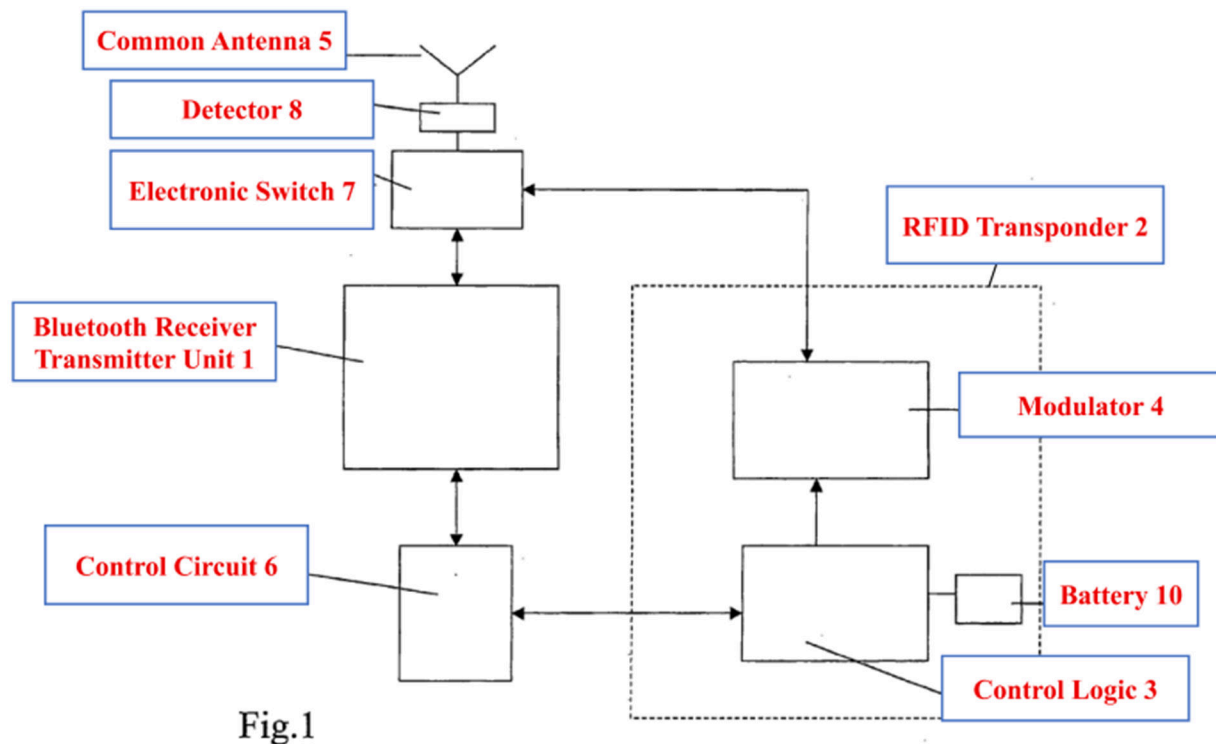


Fig.1

APPLE-1004, FIG. 1 (annotated)

The communications unit may be used for “identifying objects or persons,” e.g., identifying a person uniquely associated with an identifier. APPLE-1004, [0014]; APPLE-1003, ¶¶50-51. As shown above, the communications unit includes “[Bluetooth] receiver/transmitter unit 1 in accordance with a Bluetooth system[,]” and “also includes a [RFID] transponder 2 in accordance with a so called RFID system.” *Id.*; APPLE-1003, ¶¶50-51.

In the example shown in Figure 1, “an electronic switch 7 is included between the common antenna 5 and the specific components of the receiver/transmitter unit 1 as well as the specific components of the [RFID]

transponder 2, respectively.” APPLE-1004, [0020]. For transmission of signals, “switch 7 is controlled by the control circuit 6 when transmitting from the communications unit.” *Id.*, [0022]. For reception of signals, switch 7 is “controlled by a detector 8 positioned at the antenna 5, and it functions to detect whether a signal received by the antenna 5 is a Bluetooth signal or an RFID signal intended for the [RFID] transponder 2[,]” and “[u]pon completion of this detection, the signal received is sent either to the Bluetooth receiver/transmitter 1 or, alternatively, to the [RFID] transponder 2.” *Id.*, [0021]. For instance, “[w]hen a transponder signal is received, the signal will either be reflected by the modulator 4 or, if it is a write signal, it will be decoded in the aforesaid manner and entered into the memory, depending on the design of the transponder.” *Id.*, [0024]. Alternatively, “[w]hen the signal received is a Bluetooth signal, a transmitter signal is created in the receiver/transmitter unit 1 and sent to the antenna 5.” *Id.*, [0025]; APPLE-1003, ¶52.

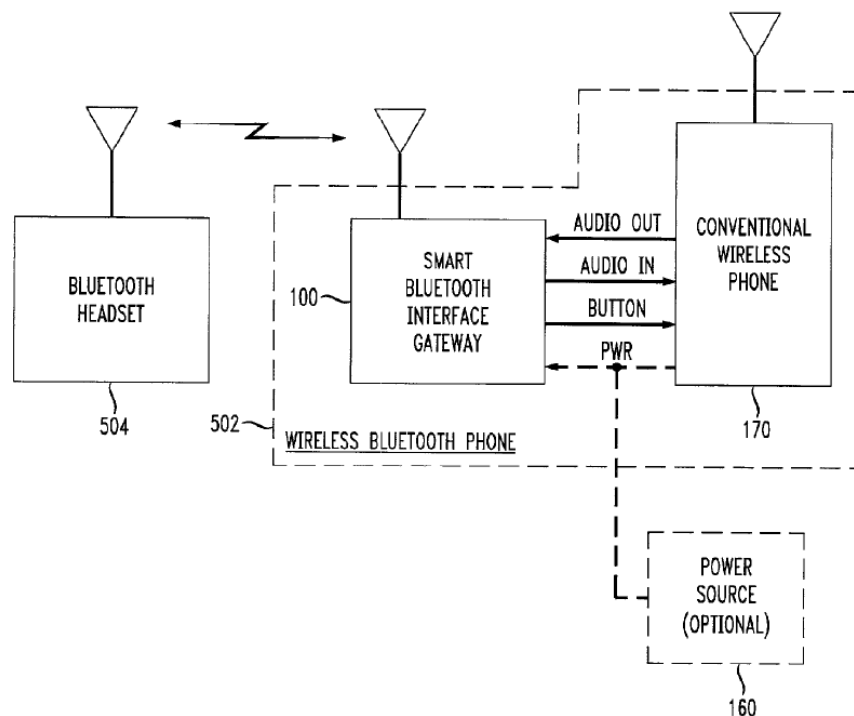
(ii) Mooney

Mooney describes systems and techniques for enabling an audio connection between a Bluetooth headset and wireless phones, including phones without Bluetooth connectivity. APPLE-1005, Abstract. The audio connection is established through use of a “Bluetooth interface gateway device” that communicates with a “conventional wireless phone (e.g., a wireless phone that

does not have BLUETOOTH installed).” *Id.* Thus, through use of the gateway device, a conventional wireless phone may communicate with the Bluetooth headset in the same manner as, for example, a Bluetooth-enabled wireless phone. APPLE-1003, ¶53.

Figure 1 shows an example of Bluetooth headset 504 paired with a wireless Bluetooth phone 502 via a smart Bluetooth interface gateway 100 enabling Bluetooth functionality to a conventional wireless phone 170:

FIG. 1



APPLE-1005, FIG. 1

“[C]onventional Bluetooth headset 504” communicates “with an otherwise conventional wireless phone 170 by adaptation of the wireless phone into a

wireless BLUETOOTH phone 502 by the external connection of a smart BLUETOOTH interface gateway 100.” APPLE-1005, [0039]. Further, Bluetooth headset 504 is described as “conventional,” and thus, a person of ordinary skill in the art (POSITA)⁵ would have understood and found obvious that the Bluetooth headset 504 is configured to similarly communicate with telephones without the smart Bluetooth interface gateway 100. *Id.*; APPLE-1003, ¶¶54-55. For example, in communicating with a telephone using a Bluetooth connection, the Bluetooth headset 504 is configured to “hear voice and/or tones...generated from the wireless phone [].” *Id.*, [0048]. Mooney also describes processes for answering phone calls using a Bluetooth headset. *See, e.g., id.*, [0033], [0047]-[0060], FIG. 3; APPLE-1003, ¶¶54-55.

(iii) Combination

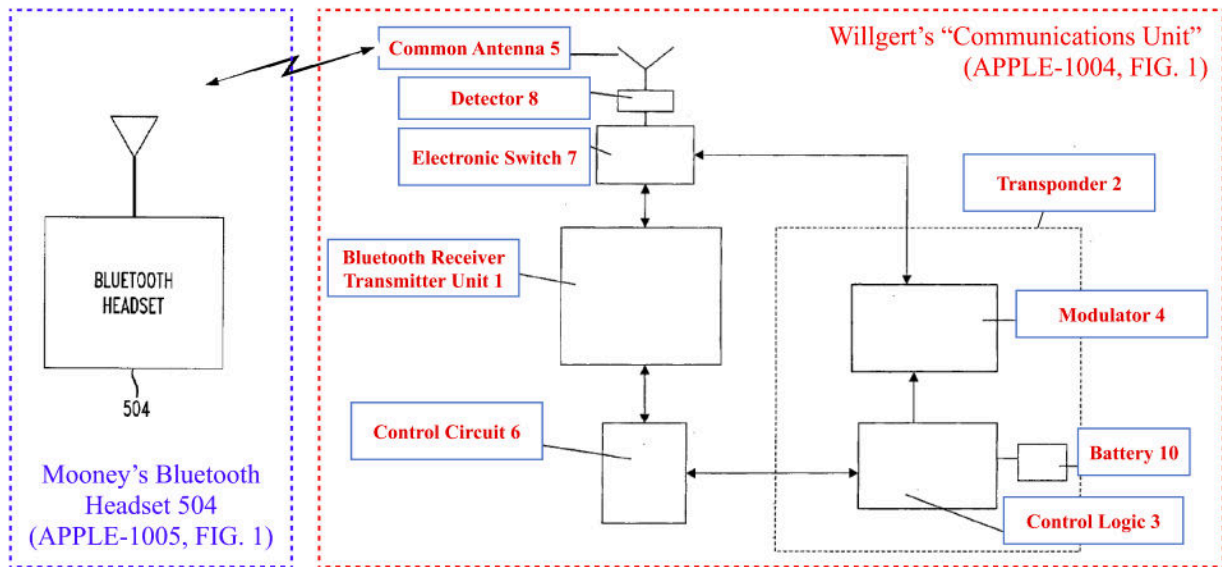
Willgert contemplates embodiments in which an RFID transponder is “included in a mobile telephone designed for Bluetooth communication.” APPLE-1004, [0030]. In one example, Willgert discloses “[a] design in which Bluetooth and [an RFID] transponder are both integrated in a mobile telephone,” which “mak[es] use of Bluetooth communication possible” via the mobile phone. *Id.*, [0032]. A POSITA seeking to implement a telephone having both Bluetooth and

⁵ APPLE-1003, ¶¶19-20 (defining “POSITA”)

RFID communication capabilities as taught by Willgert would have looked to available configurations for telephones that advantageously leverage the “design in which Bluetooth and transponder are both integrated in a mobile telephone . . . for making use of Bluetooth communication.” *Id.*, [0032]; APPLE-1003, ¶¶62-63.

In seeking these configurations, a common use of Bluetooth was through headsets enabling hands-free phone calls. *See generally* APPLE-1021 (Sony Ericson BT headset from 1994). Thus, in seeking to implement this functionality in Willgert’s telephone, a POSITA would have looked to Mooney, which discloses implementation detail related to the use of Bluetooth connectivity for a telephone and advantages of doing so. APPLE-1003, ¶64. Mooney teaches that Bluetooth technology has “permitted the addition of BLUETOOTH functionality and communication between a wireless phone and a wireless headset.” *Id.*, [0007]. As discussed in §III.A.1(i), Mooney describes a Bluetooth headset 504 providing an audio gateway with an associated Bluetooth phone 502 that allows the Bluetooth headset 504 to “hear voice and/or tones...generated from [a] wireless phone...” *Id.*, [0048]. Mooney further discloses a process (in Figure 3) by which “an incoming call is answered using a BLUETOOTH headset and wireless BLUETOOTH phone including a smart BLUETOOTH interface gateway as shown in FIGS. 1 and 2.” *Id.*, [0046]; *see also id.*, [0047]-[0060], FIG. 3; APPLE-1003, ¶64.

As combined, Willgert-Mooney would have provided a system that includes a telephone (incorporating Willgert's "communications unit") and an associated Bluetooth headset that enables a user of the telephone to conveniently receive and respond to voice calls through use of the wireless headset. *See* APPLE-1004, [0030]-[0032]; APPLE-1005, [0039]. Such a configuration would have been well-known by the Critical Date because the use of Bluetooth headsets for hands-free phone communications was conventional by 1994. *See generally* APPLE-1021. A POSITA would have also been motivated to implement this configuration since Willgert describes "a transponder [being] included in a mobile telephone designed for Bluetooth communication" as a "highly user-friendly application." APPLE-1004, [0030]. Through incorporation of Mooney's teaching, the Willgert-Mooney telephone would have provided an audio connection to a Bluetooth headset, enabling it to "hear voice and/or tones" generated from the telephone, as shown in a modified version of Willgert's Figure 1 below. APPLE-1005, [0048]; APPLE-1003, ¶65.



Willgert-Mooney

A POSITA would have readily recognized that Mooney's headset was a technical implementation of a well-known concept (use of Bluetooth headsets for voice communications) and thereby a compatible companion device to Willgert's telephone. APPLE-1004, [0008], [0030]; *See generally* APPLE-1021; APPLE-1003, ¶66 (citing APPLE-1016). Such a configuration would have improved the use of Willgert's telephone since a user would enjoy greater freedom when participating in private phone calls (i.e., calls that do not use the phone's speaker) by no longer requiring that the user be manually holding or otherwise physically tethered to the telephone during these calls. APPLE-1003, ¶66. Bluetooth headsets were also widely available and used for phone calls in this manner before the Critical Date. *See, e.g.*, APPLE-1021, 2 (describing a "practical headset that

connects to a mobile phone by a radio link instead of a cable,” which is “the first hands-free accessory to incorporate Bluetooth technology” and “available on the market in mid-2000”); APPLE-1017, 1 (describing a “triple-band GSM phone capable of working in the 900-, 1800-, and 1900-MHz bands” that is “Bluetooth enabled” and can connect to the headset...without needing wires of any sort”). And, Willgert recognizes, such a telephone configuration would have allowed “a user to have access to both systems for different applications” (Bluetooth, RFID) without the “higher costs” associated with having an ID system different from a Bluetooth system and without having to “trouble[] ... a user to carry two systems on his/her person.” APPLE-1004, [0008]; APPLE-1003, ¶66.

As discussed above, Willgert-Mooney would have involved incorporating prior art elements according to known methods to yield predictable results. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 415-21 (2007); MPEP 2143. Each of Willgert’s telephone and Mooney’s Bluetooth headset were well-known by the Critical Date, and thus, their combination would have predictably improved user convenience while using a telephone as a multi-purpose device (e.g., telephony, identification). APPLE-1004, [0010]; APPLE-1003, ¶67. Further, the combination would have involved use of known aspects of the Bluetooth protocol for a telephone. *See* APPLE-1021, 2; APPLE-1017, 3.

Finally, a POSITA would have reasonably expected to succeed in combining the teachings of Willgert and Mooney. APPLE-1003, ¶68. Implementation of the combination would have required only routine knowledge because the addition of Mooney’s Bluetooth headset to a telephone incorporating Willgert’s communications unit would have involved, for example, “[t]he Headset Profile of the BLUETOOTH specification, version 1.1, Part K:6,” which “provides the framework for conventional BLUETOOTH communications between a wireless BLUETOOTH phone and a wireless BLUETOOTH headset.” APPLE-1005, [0008]. Further, use of Bluetooth protocol to enable the hands-free communication of voice and data between a Bluetooth headset and a cellphone was conventional by the Critical Date. *See, e.g.*, APPLE-1021, 2 (a “Bluetooth Headset” is a “hands-free accessory to incorporate Bluetooth technology”); *see also* APPLE-1017, 3 (Bluetooth connectivity enables “hands-free communications between a Bluetooth-enabled headset”).

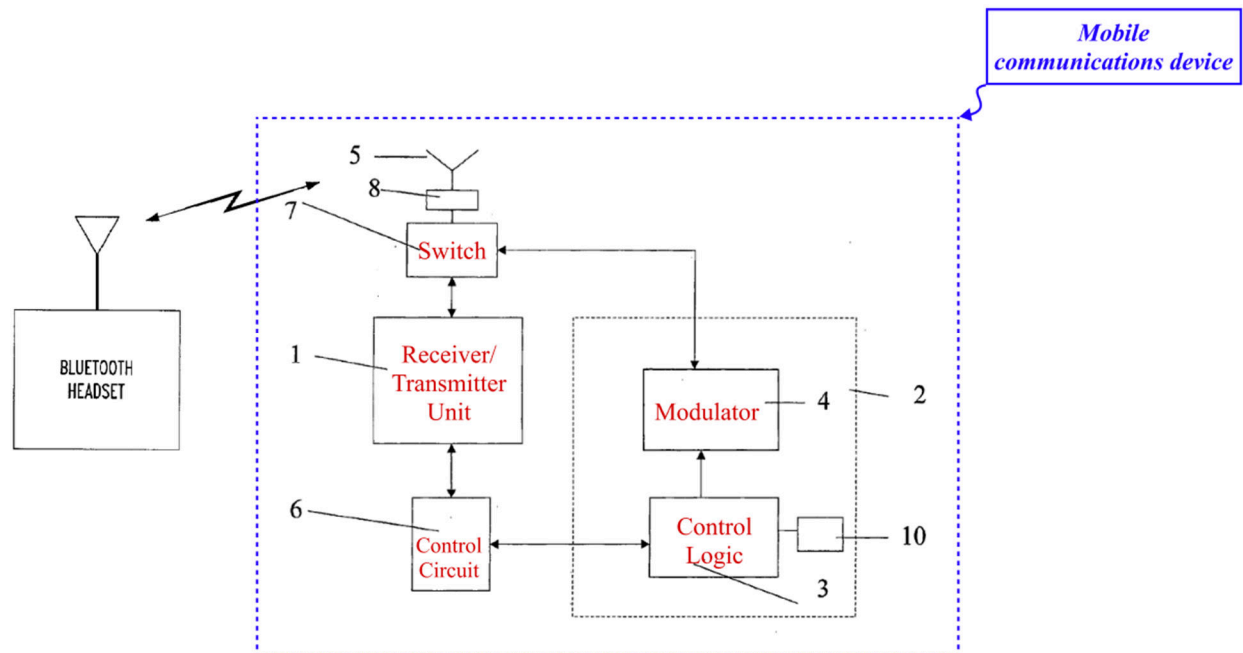
2. Analysis

(i) Claim 1

[1.pre]

Willgert-Mooney renders [1.pre] obvious through disclosure of a Bluetooth-enabled mobile telephone (*mobile communications device*). APPLE-1004, [0030], [0032]. As discussed in §III.A.1(i), Willgert describes a “communications unit”

that includes a “receiver/transmitter unit” operable with a “Bluetooth communications system” (Bluetooth transmitter) and a “transponder” operable with an “RFID system” (RFID transponder). APPLE-1004, Abstract. APPLE-1003, ¶¶77-78.



Willgert-Mooney

[1.1]

As explained in §III.A.1(iii), the Willgert-Mooney telephone includes an RFID transponder 2 and associated functionality to “receive a signal sent by a communicator...” APPLE-1004, [0004]. RFID transponder 2 includes “control logic 3 and an associated memory and modulator 4” and is “adapted to receive a query signal sent from a suitably known communicator.” *Id.*, [0017]; *see id.*,

[0023]. Thus, using RFID transponder 2, the telephone (*mobile communications device*) *receiv[es]* a query/transponder signal (*radio frequency identification (RFID) probing signal*) from a communicator (*RFID reader*) nearby the telephone (i.e., *external to the mobile communication device*). APPLE-1003, ¶79; APPLE-1004, [0005] (describing that a communicator may be “at a given short distance, for example of five meters”).

The term “probing signal” is referenced two times in the ’947 patent specification. *See* APPLE-1001, 5:8-14, 7:24-30. Specifically, “device 102 monitors for probing signals of an intended RFID reader 120...to determine whether device 102 is within the operational space of such a RFID reader 120,” and on such determination, “device 102 outputs the designated RFID automatically.” *Id.* 5:8-14. Additionally, “signal processing 408” of “transceiver 308” can be “either an active or passive transponder, and the received probing signal of a RFID reader.” *Id.*, 7:24-30; APPLE-1003, ¶80.

The query/transponder signal used in Willgert-Mooney correspond to a *probing* signal based on the descriptions in the ’947 patent for various reasons. APPLE-1004, [0018], [0023]; APPLE-1003, ¶81. First, because the query/transponder signal is used by a communicator to obtain, from the RFID transponder 2, information to determine the “identity” of RFID transponder 2, the query/transponder signal probes the RFID transponder based on the identity

information it receives from the RFID transponder. APPLE-1004, [0005]; APPLE-1003, ¶81.

The query/transponder signal also represents a *probing* signal because receipt of the signal by the RFID transponder 2 causes it to perform an appropriate action based on the signal type of the query/transponder signal, e.g., “reflect[ing] by the modulator 4” if the received signal is a read signal, or “decod[ing]” the signal and entering into memory if the received signal is a write signal (*Id.*). APPLE-1003, ¶82. That is, the query/transponder signal instructs the RFID transponder to perform an action, which a POSITA would have understood and found obvious *probes* the RFID transponder 2 to perform a corresponding action. APPLE-1003, ¶¶82-83.

Moreover, information specified by the signal (e.g., “read” signal, “write” signal) interacts with control logic 3 of the RFID transponder 2. APPLE-1004, [0018], [0023]; APPLE-1003, ¶¶83-84. Upon receiving a signal, RFID transponder 2 “modulat[es] the signal with a pulse train” and “[i]nformation relating to the pulse train is stored in the memory. *Id.* Further, “[t]he modulated signal may contain various types of information.” *Id.* Signal information thereby interacts with control logic 3 of the RFID transponder 2 to identify a signal type (read, write). *Id.* The information represents an instruction to the RFID transponder 2, e.g., to identify the type of signal prior to performing a responsive

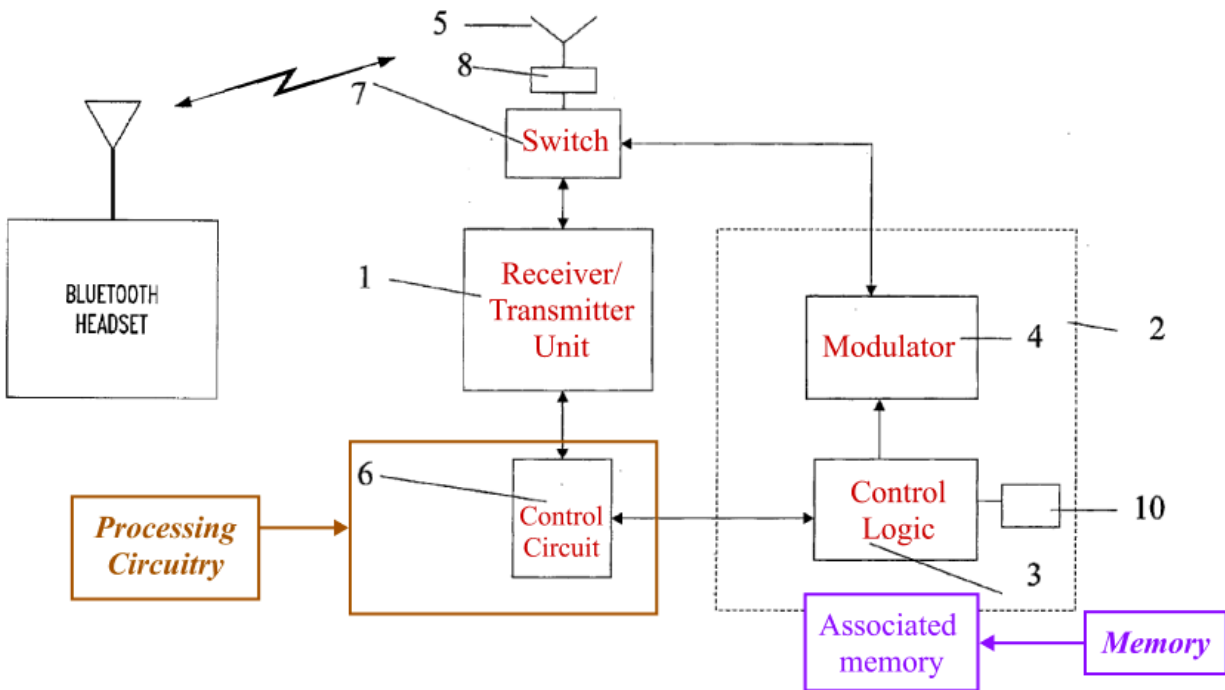
action. *Id.*

[1.2]

In Willgert-Mooney, signal transmission functionality of the “communications unit” is controlled by control circuit 6 (***processing circuitry***). APPLE-1004, [0022]; *see id.*, [0019]. A POSITA would have understood that, in telephones, certain implementations of such signal transmission functionality may be provided using a processor that runs software ***instructions*** stored in a separate associated memory (***memory***). APPLE-1003, ¶85. Compared to hardware-based signal processors (e.g., implemented in circuitry), software-based processors would have provided greater flexibility in the context of the Willgert system, since the functionality of software-based processors may be updated over time through software updates (whereas functionality of hardware-based signal processors are fixed),. *Id.* Indeed, software-based processors for controlling signal transmissions of the “communications unit” of Willgert-Mooney were well-known by the Critical Date. APPLE-1003, ¶85. For example, by the Critical Date, Schlang (APPLE-1012) disclosed “dual band mobile station” configured to “switch[] between transmission and reception in either of the two bands...” APPLE-1012, Abstract. In Schlang’s “dual band mobile station,” a “microprocessor 112 controls the overall operation of the mobile station through software programs stored in the program memory 114.” *Id.*, 13:1-12; *see also id.*, 12:14-20, FIG. 9. Further, an

“RF section 120” of a transceiver includes “two frequency synthesizers” with settings “controlled by the microprocessor 112.” *Id.*, 13:21-36; APPLE-1003, ¶85.

The configurations of logic circuit 6 discussed above would have been implemented with associated memory (*memory*) for storing *instructions* to control the communication functionality of RFID transponder 2. APPLE-1012, 13:1-12 (“microprocessor 112 controls the overall operation of the mobile station through software programs stored in the program memory 114”). APPLE-1004, [0004], [0006], [0007], [0015], [0017]; APPLE-1011, [0006]; APPLE-1003, ¶86.



Willgert-Mooney

In the software-based signal processor configuration discussed above, at least some of the memory in communication with the processor would have been

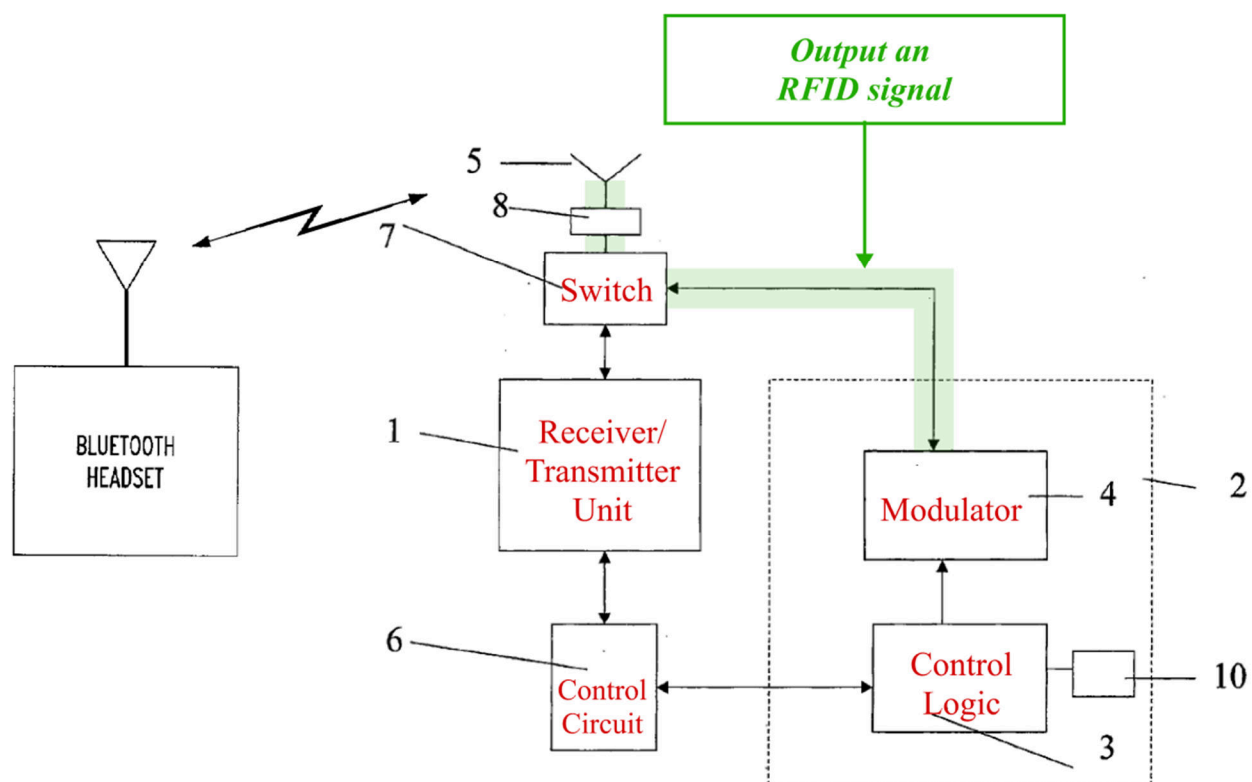
configured to store data associated with RFID transponder 2. APPLE-1003, ¶¶87-88. Such configurations would have improved the transmission control capabilities of the “control unit,” e.g., by enabling memory access to RFID data after the detection of a signal from an RFID reader. *Id.* This configuration is consistent with Willgert, which describes RFID transponder 2 including “associated memory” that stores “[i]nformation relating to the pulse train” relating to a query signal received from a RFID reader. APPLE-1004, [0017]-[0018]. Further, because RFID transponder 2 is “designed to enable information to be written into the transponder memory” so that the “information can be read-out from the memory later on,” a POSITA would have recognized it to be advantageous for the information described in Willgert as being stored in transponder memory to similarly be stored in memory associated with a software-based signal processor. *Id.*; APPLE-1003, ¶¶87-88.

A POSITA would have found it obvious to implement communication functionality of a multi-modal receiver/transmitter unit in the software-based signal processor in the manner discussed above. APPLE-1003, ¶89. This is supported by the '947 patent specification, which describes a processor implementing such multi-signal type functionality through software. APPLE-1001, 5:14-49 (describing processor 302 executing instructions stored in memory 304). Thus, a POSITA would have found it obvious to use software to implement the multimodal

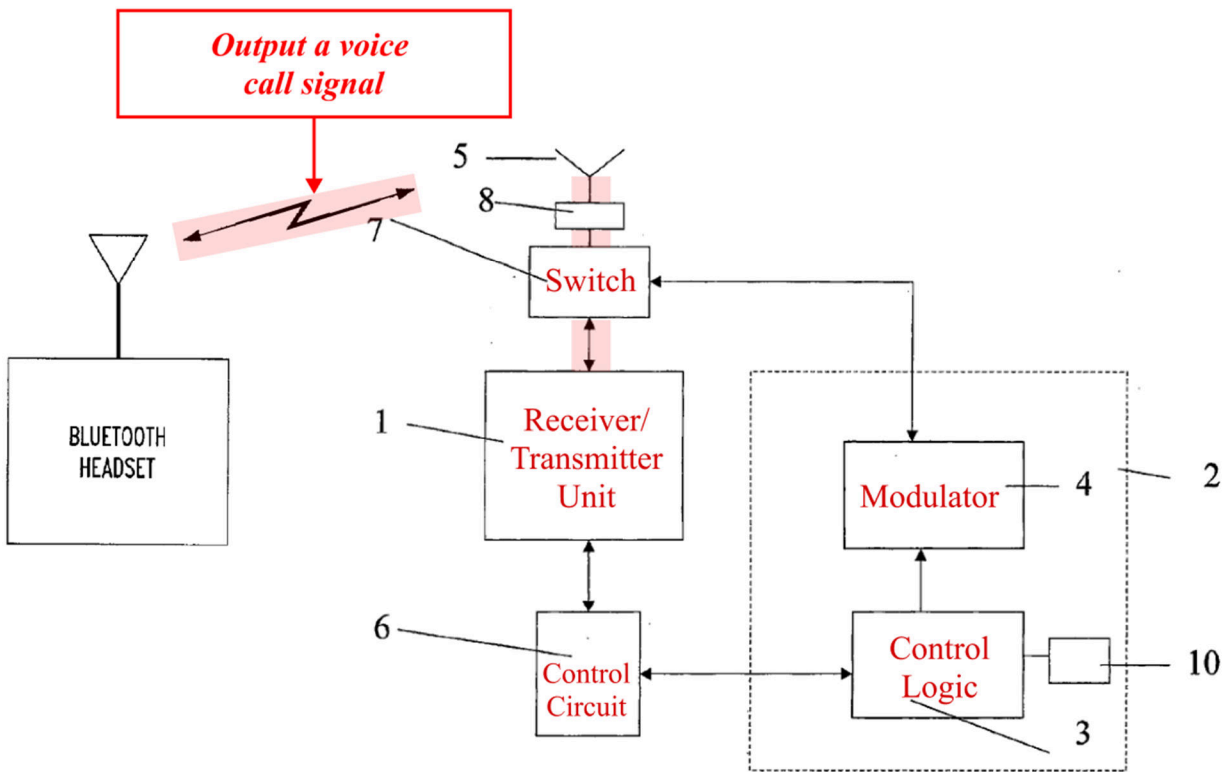
functionality of the Willgert-Mooney communications unit (i.e., to implement that functionality through use of a processor that retrieves and executes instructions and data stored in a memory). *See* APPLE-1001, 5:14-19; APPLE-1003, ¶¶89-90.

[1.3]

The transmission functionality of the “communications unit” within a Bluetooth-enabled telephone of Willgert-Mooney renders this limitation obvious. The telephone includes common circuitry, e.g., switch 7, detector 8, configured to output an RFID transponder signal (*output an RFID signal*) and, alternatively, a Bluetooth voice communication signal (*output a voice call signal*). Further, like ’947 patent specification’s disclosure of a “switch 404” “switch[ing] between the outputs” of a transmitter (APPLE-1001, 7:9-12), Willgert teaches a “switch 7” configured to control “transmitting from the communications unit” (APPLE-1004, [0022]). Thus, both the ’947 patent specification and Willgert-Mooney teach the same means of enabling output of two different signal types (i.e., through use of a switch to change transmission output of a transceiver). APPLE-1003, ¶91.



Willgert-Mooney



Willgert-Mooney

[1.4]

In Willgert-Mooney, RFID transponder 2 of the “communications unit” is configured to determine when it is in sufficient proximity to the communicator (*RFID reader*). APPLE-1004, [0004], [0006], [0007], [0015], [0017]. A POSITA would have understood and found obvious that this determination involves

determining that the Willgert-Mooney phone is in *an operational space*⁶ of the communicator, e.g., the phone is located in an area surrounding the communicator in which the RFID transponder 2 would be able to respond to a query/transponder signal provided by the communicator. APPLE-1003, ¶92.

Willgert contemplates using communication between the RFID transponder 2 and the communicator for “reading an identity,” which would have involved communication with the “communicator at a given short distance,” e.g., “five meters.” APPLE-1004, [0005]. At such distances, the RFID transponder 2 would be capable of (1) detecting a query/transponder signal provided by the communicator and (2) responding to the query/transponder signal. APPLE-1003, ¶93; *see* APPLE-1004, [0005], [0006]. Thus, in the context of the identity verification systems contemplated in Willgert, a determination by the Willgert-Mooney phone of being within a sufficient proximity to a communicator involves the phone being in the *operational space* of the communicator. APPLE-1003, ¶¶93-94.

⁶ Apple does not concede that this term satisfies the requirements of 35 U.S.C. §112, but applies prior art under plain and ordinary meaning based on Varia’s proposed construction.

A POSITA would have understood and found obvious that RFID transponder 2 may be implemented as a passive RFID transponder, which was a conventional RFID transponder configuration by the Critical Date, as demonstrated by Freund (filed 3/31/2003) (APPLE-1011). In Freund, an RFID transponder is configured to be “activated by an RF signal sent by [a] reader” when “the passive RFID device is in proximity of a reader.” APPLE-1011, [0006]; APPLE-1003, ¶¶94-95. Likewise, RFID transponder 2 may be similarly configured as a passive RFID transponder such that it is activated by a query signal sent by a communicator disclosed in Willgert when the passive RFID transponder is in sufficient proximity to the communicator. *See* APPLE-1004, [0015], [0017]; APPLE-1003, ¶¶94-95.

Further, the configuration of the RFID transponder 2 discussed above would have been an obvious based on well-known functionality of RFID transponders. *See generally* APPLE-1011; APPLE-1003, ¶96. For example, Freund describes RFID transponder functioning “within inches” or “feet away” from an RFID reader (APPLE-1011, [0006]), which coincides with Willgert’s goal of implementing its communications unit with RFID systems that provide identification within a “geographically limited communications area” (APPLE-1004, [0006]). APPLE-1003, ¶96. Because of the well-known and purposefully-designed RFID range limits, A POSITA would also have perceived that Willgert’s RFID transponder 2

would employ the same range as conventional RFID and thereby avoid “less suitable” wireless communications where “the communications area is large[.]” APPLE-1004, [0007].

Finally, to the extent that Varia attempts to characterize *determining the mobile communication device is in an operational space of the RFID reader* as requiring a determination of a first distance at which a probing signal becomes detectable to an RFID transponder and a second distance that is shorter than the first distance at which an RFID signal is permitted to be sent, such an interpretation lacks corresponding disclosure in the '947 patent specification. APPLE-1003, ¶97. The most relevant disclosure of RFID transponder functionality is shown in Figure 2 (below) and demonstrates lack of any relationship to determining an “operational space”:

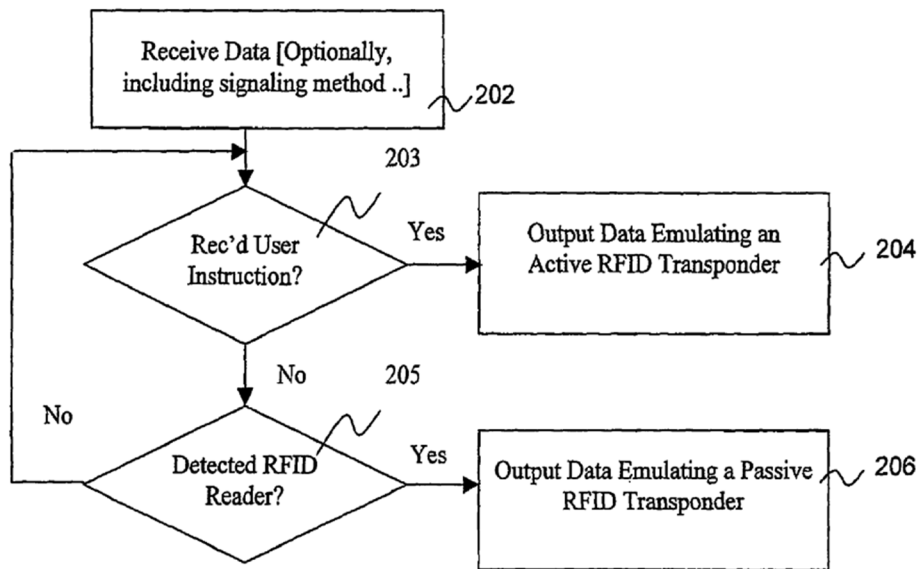


Figure 2

APPLE-1001, FIG. 2

In “passive RFID transponder” configuration, a “selected/designated default RFID will be outputted automatically, whenever device 102 is within the proximal presence, or more specifically, the operational space, of an intended RFID reader 120.” APPLE-1001, 5:1-13. In this configuration, “device 102 monitors for probing signals of an intended RFID reader 120” to “determine whether device 102 is within the operational space of such a RFID reader 120,” then “outputs [a] designated RFID automatically,” which acts as “a passive RFID transponder.” *Id.* Notably absent from these descriptions of “operational space,” however, is any disclosure indicating that their determination involves monitoring two specific distances from the RFID reader in outputting a “selected/designated default RFID.”

See APPLE-1003, ¶¶97-98 (citing APPLE-1002, 100-102, 348-351).

[1.5]

As discussed for [1.3], the Willgert-Mooney telephone includes a Bluetooth transmitter 1 configured to provide a Bluetooth voice communication signal to a Bluetooth headset. Further, in using the Bluetooth protocol to establish a connection between the telephone (which incorporates the “communications unit”) and the Bluetooth headset, the established connection would have formed over a piconet wireless network (*voice call signal is output over a wireless network*), which Mooney teaches may be “commonly referred to as a BLUETOOTH piconet” that “provides peer-to-peer communications over short distances.” APPLE-1005, [0004]; APPLE-1003, ¶99.

Further, it would have been obvious that Bluetooth transmitter 1 and RFID transponder 2 are configured to transmit signals of different frequency ranges. APPLE-1003, ¶100. Mooney teaches that “[t]he wireless frequency of the piconets may be 2.4 GHz as per BLUETOOTH standards, and/or typically have a 20 to 1000 foot range.” APPLE-1005, [0005]. Likewise, around January 2002, Bluetooth was known to “use[] the unlicensed ISM band,” which includes frequency ranges between “2.4000” GHz and “2.4835” GHz worldwide. See APPLE-1013, 23. In contrast, the frequency range for “the vast majority of [RFID] transponders” was “in the 13.56MHz” range, whereas the frequency ranges

of “passive” RFID transponders was “less than 135 KHz range.” *Id.*, 20. Thus, a POSITA would have found it obvious that, in implementations of Willgert-Mooney, the “communications unit” is configured such that RFID transponder 2 outputs RFID transponder signals in the frequency range around 13.56MHz or less than 135 KHz (*a radio frequency range used to output the RFID signal*).

Further, Bluetooth voice communication signals are output in the frequency range of 2.4000-2.4835 GHz (*within a radio frequency range that is different*). See APPLE-1013, 23; APPLE-1003, ¶100. Further, dual-band transceivers configured to transmit signals over non-overlapping frequency ranges were conventional by the Critical Date. APPLE-1003, ¶100 (citing APPLE-1014, APPLE-1015).

(ii) Claims 2, 6-8

[2]

In Willgert-Mooney, data output by RFID transponder 2 (e.g., a responsive signal transmitted in response to receiving a query/transponder signal) uniquely identifies the RFID transponder 2 to a communicator (i.e., RFID reader) that provided the query/transponder signal and receives the responsive signal. APPLE-1004, [0017] (“[e]ach RFID transponder will typically have a unique identity that is sent to [a] communicator...”); *see also id.*, [0005] (describing use of “ID tag[s]” where “[t]he identity can be read by a communicator at a given short distance”). A POSITA would have thereby understood that the responsive signal output by

RFID transponder 2 (***RFID data***) includes an identifier (***selected one of...an identifier***) used by the communicator to identify the RFID transponder 2. APPLE-1003, ¶101-104. Further, this coincides with disclosure of examples of “identifiers” in the ’947 patent specification that are used to “identify[] the person.” APPLE-1001, 1:45-58.

[6]

In Willgert-Mooney, RFID transponder 2 of the “communications unit” is configured to receive at least two different types of RFID signals from an communicator—a query/transponder (read) signal or a write signal. APPLE-1004, [0023]. This technique enables the well-known ability “to read and write other information from and into the ID tag, respectively, with the said of the communicator [(RFID reader)].” APPLE-1004, [0005]. Specifically, Willgert teaches that “the transponder may also be designed to enable information [(***RFID data***)] to be written into the transponder memory [(***comprises facilitating provision . . . to the mobile communication device***)], so that said information can be read-out from the memory later on, in the aforesaid manner [(responding to a query/probing signal)].” APPLE-1004, [0018]. A POSITA would have understood and found obvious that when writing into the transponder’s memory for the purpose of later reading out in response to a query/probing signal, that the RFID data “written into the transponder memory” comprises information so that

the RFID data can later be “read-out from the memory” in response to a query signal. APPLE-1004, [0018]; APPLE-1003, ¶105. Further, Willgert teaches that the “write signal is a modulated signal sent by the communicator . . . control logic 3 includes a decoder, which functions to decode the signal received.” APPLE-1004, [0018].

[7]

As discussed for [6], Willgert teaches that “the transponder may also be designed to enable information [(*RFID data*)] to be written into the transponder memory [(*comprises facilitating provision . . . to the mobile communication device*)], so that said information can be read-out from the memory later on, in the aforesaid manner [(responding to a query/probing signal)].” APPLE-1004, [0018]. A POSITA would have understood and found obvious that when writing into the transponder’s memory for the purpose of later reading out in response to a query/probing signal, that the RFID data “written into the transponder memory” comprises at least *a signaling attribute associated with the outputting of the RFID data*, so that the RFID data can later be “read-out from the memory” in response to a query signal. APPLE-1004, [0018]; APPLE-1003, ¶106. Further, Willgert teaches that the “write signal is a modulated signal sent by the communicator . . . control logic 3 includes a decoder, which functions to decode the signal received.” APPLE-1004, [0018]; APPLE-1003, ¶106.

[8]

In Willgert-Mooney, the “communications unit” is incorporated in a mobile telephone (*wireless mobile phone*) equipped with Bluetooth communication capability (*equipped with communication capability*). APPLE-1003, ¶107. For example, the “communications unit” is incorporated in a “mobile telephone designed for Bluetooth communication.” APPLE-1004, [0030]-[0031].

(iii) Claim 9

Willgert-Mooney renders the following limitations of claim 9 obvious in the same manner as explained above. APPLE-1003, ¶108.

Claim 9 Limitation	Corresponding Claim Limitation
[9.pre]	[1.pre]
[9.1]	[1.2]
[9.5]	[1.5]

[9.2]

See [1.3], *supra* (addressing *output an RFID signal* and *output a voice call signal*). In some implementations of Willgert-Mooney, RFID transponder 2 of the “communications unit” would have functioned as a RFID transponder configured

to wait to receive (**monitor**)⁷ a signal provided by a communicator (i.e., RFID reader) when the RFID transponder is in sufficient proximity to the communicator. APPLE-1004, [0004], [0006], [0007], [0015], [0017]; APPLE-1003, ¶109.

[9.3]

As discussed for [1.4], in Willgert-Mooney, RFID transponder 2 is configured to determine when it is in sufficient proximity to the communicator (**RFID reader**). APPLE-1004, [0004], [0006], [0007], [0015], [0017]. A POSITA would have understood and found obvious that this determination involves

⁷ The term “monitor” is used once in the ’947 patent specification. APPLE-1001, 5:8-13 (“...device 102 **monitors** for probing signals of an intended RFID reader 120...to determine whether device 102 is within the operational space of such a RFID reader 120.”). Thus, the ’947 patent contemplates a device monitoring for proximal presence of a proximal RFID reader by monitoring for signals sent by the RFID reader. APPLE-1003, ¶109. Willgert similarly describes a telephone monitoring for query/transponder signals provided by a communicator in determining that the communicator is close to the telephone. *See* APPLE-1004, [0015]-[0017].

determining that the Willgert-Mooney is in *a proximal presence*⁸ of the communicator, e.g., the phone is located in an area surrounding the communicator in which the RFID transponder 2 would be able to detect a query/transponder signal from the communicator. APPLE-1003, ¶110. As discussed for [1.4], at a “given short distance, e.g., “five meter,” RFID transponder 2 would be capable of (1) detecting a query/transponder signal provided by the communicator and (2) responding to the query/transponder signal. APPLE-1004, [0005], *see also id.*, [0006], [0015], [0017]; APPLE-1003, ¶110. Thus, in the context of the identity verification systems contemplated in Willgert, a determination by the Willgert-Mooney phone of being within a sufficient proximity to a communicator involves the phone being in both the *proximal presence* and the *operational space* of the communicator. APPLE-1003, ¶110-113; *see* APPLE-1004, [0005]-[0006].

A POSITA would have understood and found obvious that RFID transponder 2 may be implemented as a well-known passive RFID transponder. As explained for [1.4], *supra*, in such a configuration, RFID transponder 2 waits to receive (*monitor*) a query/transponder signal provided by a communicator when

⁸ Apple does not concede that this term satisfies the requirements of 35 U.S.C. §112, but applies prior art under plain and ordinary meaning based on Varia’s proposed construction.

the RFID transponder is in sufficient proximity to the communicator. *Id.*; see APPLE-1003, ¶¶111-114 (citing APPLE-1011, [0006]). Further, because the RFID transponder 2 would have been configured to “receive a signal sent by the communicator and [] reflect this signal in the modulated state,” the sufficient proximity determination is based on receipt of a query/transponder signal (***RFID probing signal***) from the communicator (***RFID reader***). APPLE-1003, ¶¶111-114; see [1.1], *supra* (explaining that the query/transponder signal used in Willgert-Mooney corresponds to a ***probing*** signal).

[9.4]

As explained above, a POSITA would have understood and found obvious to implement RFID transponder 2 as a passive RFID transponder configured to wait to receive a signal provided by a communicator (i.e., RFID reader) when the RFID transponder is in sufficient proximity to the communicator. APPLE-1004, [0004]-[0007], [0017]; APPLE-1011, [0006]; APPLE-1003, ¶115. Further, as discussed for [1.2] and [6.1], RFID transponder 2 is also configured to transmit (i.e., ***output***) RFID signals to a communicator of an RFID system. APPLE-1004, [0023], [0030]. For instance, in response (i.e., ***based on***) to receiving a “query signal” (***receipt of the RFID probing signal***), RFID transponder 2 generates and sends a responsive signal by using modulator 4 to “reflect[]” the received signal or

otherwise “send a signal in response to the signal received.” *Id.*, [0022]-[0025]; APPLE-1003, ¶115.

Thus, in the implementations where RFID transponder 2 is configured in this manner, RFID transponder 2 of the “communications unit” is configured to transmit a responsive signal (***RFID data*** to be received) to be received by a communicator that provides a query signal (***RFID reader***), where the responsive signal is outputted when the RFID transponder 2 is within sufficient proximity to the communicator (***in response to determining the mobile communication device is within the proximal presence of the RFID reader***). APPLE-1003, ¶116; APPLE-1011, [0006]; *see also* §III.A.2(i).

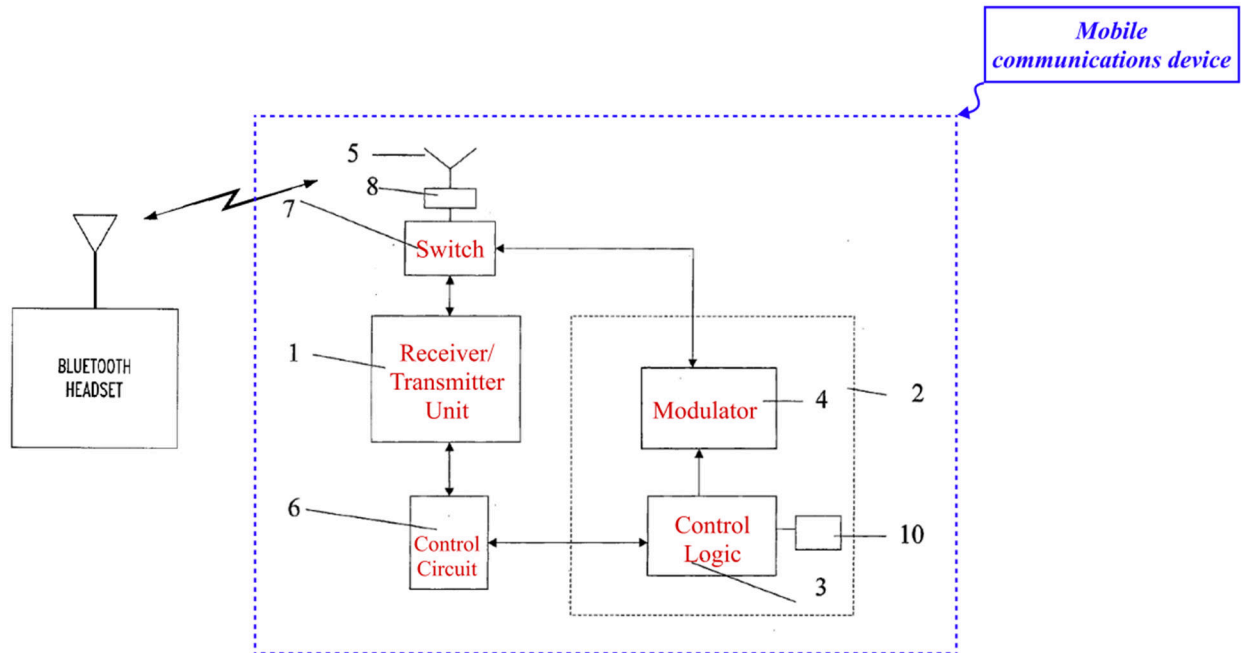
(iv) Claim 16

Willgert-Mooney renders the following limitations of claim 16 obvious in the same manner as explained above. APPLE-1003, ¶117.

Claim 16 Limitation	Corresponding Claim Limitation
[16.2]	[1.2]
[16.4]	[9.3]
[16.5]	[9.3]
[16.6]	[1.5]
[16.7]	[1.4]

[16.pre]

As discussed for [1.pre], in Willgert-Mooney, the “communications unit” is incorporated in a Bluetooth-enabled mobile telephone (*mobile communications device*). APPLE-1004, Abstr., [0030], [0032]; APPLE-1003, ¶118.

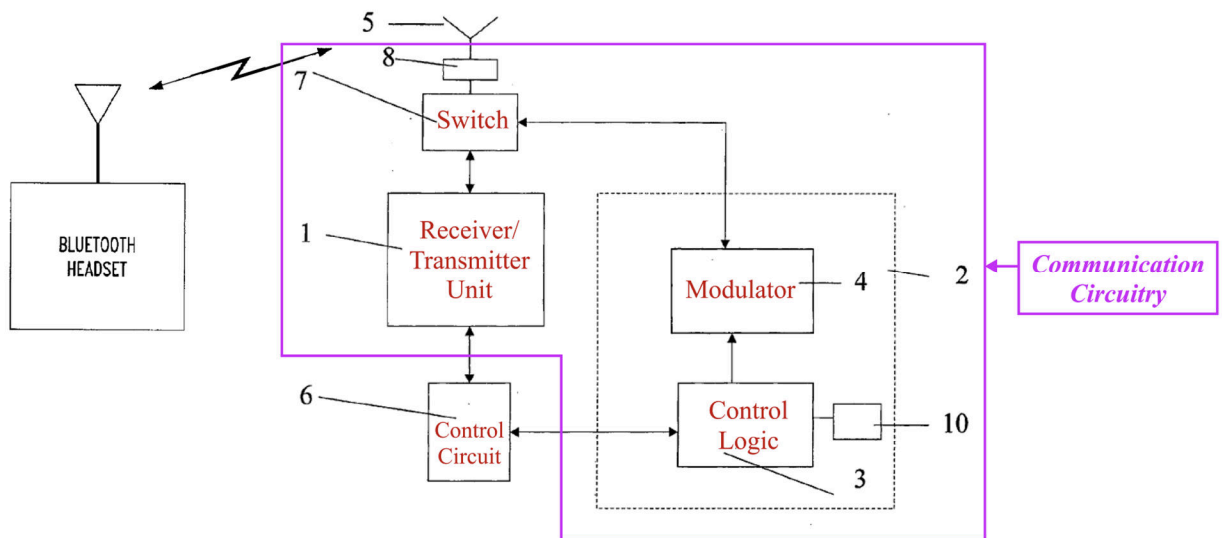


Willgert-Mooney

[16.1]

As discussed for [1.3], the “communications unit” of the Willgert-Mooney telephone (*communication circuitry*) includes Bluetooth transmitter 1 and RFID transponder 2 configured to output RFID transponder signals (*output radio frequency identification (RFID) signals*) and Bluetooth voice communication signals (*output voice call signals*), respectively. APPLE-1004, [0022]; APPLE-1003, ¶119; see APPLE-1001, 7:9-12. Further, as discussed for [1.5], a POSITA

would have found it obvious that, in implementations of Willgert-Mooney, the “communications unit” is configured such that Bluetooth voice communication signals are output in the frequency range of 2.4000-2.4835 GHz (*a first radio frequency range over a wireless network*). See APPLE-1013, 23; APPLE-1003, ¶119. Further, RFID transponder 2 outputs RFID transponder signals in the frequency range around 13.56MHz or less than 135 KHz (*a second radio frequency range, which is different than the first radio frequency range*).



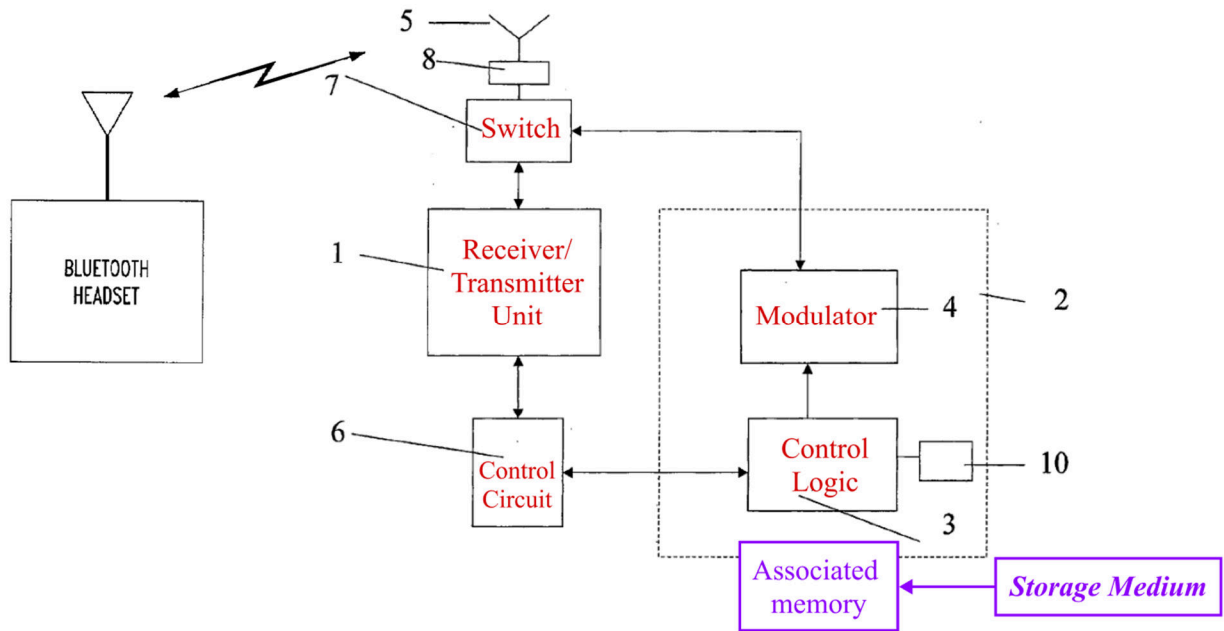
Willgert-Mooney

[16.3]

See [1.2], *supra* (addressing *memory*). In implementations of Willgert-Mooney, logic circuit 6 would have been configured with associated memory (*storage medium*) for storing instructions to control the transmission functionality

of RFID transponder 2. Such functionality was conventional before the Critical Date, as shown by Schlang (APPLE-1012). *See* APPLE-1012, 13:1-12

(“microprocessor 112 controls the overall operation of the mobile station through software programs stored in the program memory 114”); APPLE-1004, [0004], [0006], [0007], [0015], [0017]; APPLE-1011, [0006]; APPLE-1003, ¶120.



Willgert-Mooney

(v) *Claim 26*

Willgert-Mooney renders the following limitations of claim 26 obvious in the same manner as explained above. APPLE-1003, ¶121.

Claim 16 Limitation	Corresponding Claim Limitation
[26.pre]	[16.pre]

[26.1]	[16.1]
[26.2]	[16.2]
[26.3]	[1.2], [16.3]
[26.4]	[9.3], [16.4]
[26.5]	[9.3], [16.5]
[26.6]	[9.3], [16.7]

[26.7]

See [1.5], [16.6], *supra*. A POSITA would have understood that voice calls from one mobile device (e.g., a cell phone) are sent to another cell phone (***another communication device***) for communication over the wireless cellular network.

APPLE-1003, ¶122. Further, as discussed for [1.5], a POSITA would have found it obvious that, in implementations of Willgert-Mooney, the “communications unit” is configured such that Bluetooth voice communication signals are output in the frequency range of 2.4000-2.4835 GHz (***a wireless network in the first radio frequency range***). See APPLE-1013, 23; APPLE-1003, ¶122.

(vi) *Claim 13-15, 17, 22, 23, 25, 30-32*

Willgert-Mooney-Holloway-Pitroda renders the following claims obvious in same manner as discussed above. APPLE-1003, ¶123.

Claim	Corresponding Claim
-------	---------------------

[17]	[2]
[13], [22], [30]	[6]
[14], [23], [31]	[7]
[15], [25], [32]	[8]

B. [GROUND 1B] – Claims 1, 2, And 6-8 Are Obvious Over Willgert

1. Litigation

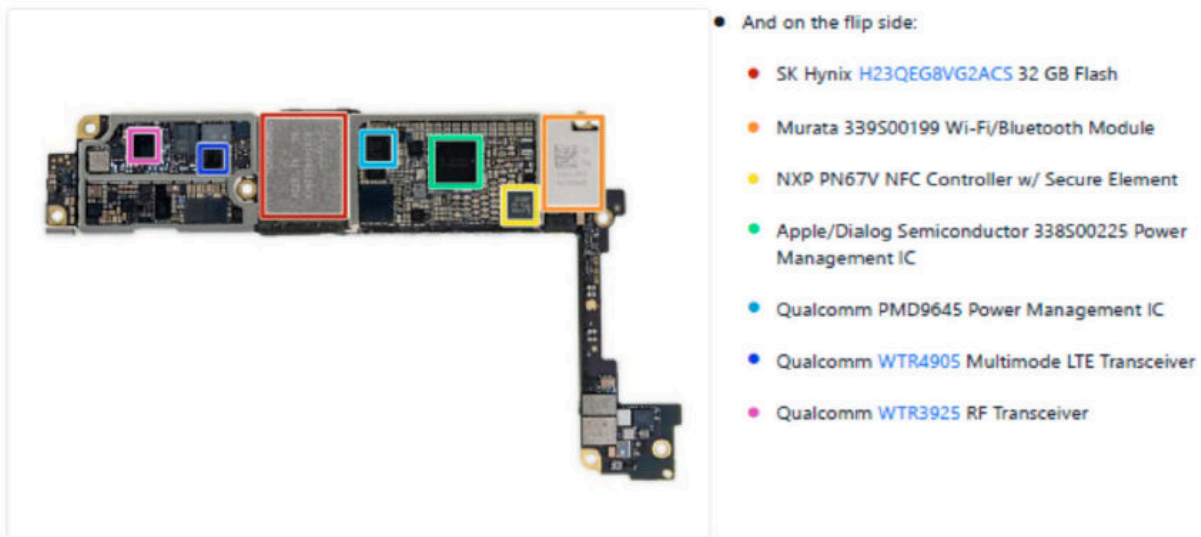
As noted in §II.C, Varia seeks to broaden claim for alleging infringement. *See, e.g.*, APPLE-1050 (complaint); APPLE-1052 (claim chart for Varia’s preliminary infringement contentions); APPLE-1053 (litigation briefing); APPLE-1055 (deposition transcript of Varia’s technical expert). Under these broad constructions, Willgert alone renders claims 1, 6-10, 13, 15-17, 25-27, and 32 obvious based on Varia’s broad constructions. APPLE-1003, ¶124.

Specifically, Varia alleges infringement identifies “NXP 67V04 NFC Controller, Qualcomm WTR4905 Multimode LTE Transceiver, and Qualcomm WTR3925 RF Transceiver” “collectively” represent communication circuitry. *See* APPLE-1050, 25-26. As shown below, Varia identified “...internal circuitry and components, including an NXP 67V04 NFC Controller, Qualcomm WTR4905

Multimode LTE Transceiver, and Qualcomm WTR3925 RF Transceiver

(collectively, “transceiver”⁹)...”); *see also* APPLE-1052, 8 (same).

⁹ This statement directly contradicts arguments characterizing the scope of “transceiver” made by Varia in an attempt to distinguish prior art applied during prosecution of a related patent, U.S. Pat. No. 8,172,984 (“the ’984 patent”). According to Varia, “[o]ne of ordinary skill in the art would not reasonably interpret a ‘transceiver’ so broadly as to incorporate an entire mobile device’s circuitry, and in particular to be **read on by two separate transmitters**, as Cooper teaches.” APPLE-1008, 39-40. While the term “transceiver” is not recited in the Challenged Claims, Varia’s statements are nonetheless relevant to the functionality recited in the Challenged Claims, e.g., instructions to cause a *mobile communication device* to *output an RFID signal and output a voice call signal*. *See* APPLE-1001, Claim 1; *see also* Claims 9, 16, 24; *see* APPLE-1008, 92.



(See <https://www.ifixit.com/Teardown/iPhone+7+Teardown/67382>).

APPLE-1050, 26. Varia then argued in subsequent briefing that its “patented inventions simply require that the components performing telephony and RFID be located within the mobile communication device and share some common or overlapping architecture of the smartphone.” APPLE-1053, 13.

Varia also argued that functionality recited in the Challenged Claims (*output an RFID signal, output a voice call signal*) are provided by a “**combined set of components** within the mobile communications device.” See APPLE-1053, 6.

Varia also cited a statement by the examiner during original prosecution of the ’984 patent that such transmission functionality is provided by “the **sum total** of the circuitry of the mobile device...” *Id.*, 1 (citing APPLE-1008, 68); *see also* APPLE-1055, 65:13-23, 134:5-13 (deposition testimony of Varia’s expert relating to switching of transmission functionality). Thus, Varia interprets the claims as

encompassing circuitry of different components within a mobile device that *collectively* enable transmission/reception functionality of the mobile device. As explained by Dr. Ding and discussed in detail below, “this statement suggests a lack of physical or logical constraints for the claimed ‘mobile communication device,’ in which case its elements are rendered obvious by Willgert’s contemplated RFID and voice call signaling functionality within a single telephone.” APPLE-1003, ¶125 (citing APPLE-1004, [0014], [0030]-[0032]).

2. Analysis

(i) Claim 1

The application of Willgert within Ground 1B incorporates by reference the disclosures of Willgert relating to the functionality of RFID transponder 2 referenced in Ground 1A (identified below) and thereby render the following claim limitation obvious in the same manner as discussed above. APPLE-1003, ¶126.

Claim	Corresponding Analysis
[1.pre]	Ground 1A, [1.pre]; APPLE-1004, [0020], [0022]-[0024], [0030], [0032]; APPLE-1003, ¶¶77-78.

[1.1]	Ground 1A, [1.1]; APPLE-1004, [0004], [0005], [0017], [0023]; APPLE-1001, 5:8-14, 7:24-30; APPLE-1003, ¶¶79-84.
[1.4]	Ground 1A, [1.4]; APPLE-1004, [0004], [0006], [0007], [0015], [0017]; APPLE-1011, [0006]; APPLE-1001, 5:1-13, FIG. 2; APPLE-1002, 100-102, 348-351; APPLE-1003, ¶¶92-98.
[1.5]	Ground 1A, [1.5]; APPLE-1004, [0020], [0022]-[0024], [0030], [0032]; APPLE-1005, [0004], [0005]; APPLE-1013, 20, 23; APPLE-1014; APPLE-1015; APPLE-1003, ¶¶99-100.

[1.2]

As discussed below, Willgert’s “communications unit” satisfies Varia’s broad interpretations of various claim terms in the Litigation. APPLE-1003, ¶127.

Varia’s position in the Litigation appears to broadly interpret the ***processing circuitry*** (recited in [1.2]) in the context of the transmission configuration (recited in [1.3], i.e., ***output an RFID signal, output a voice call signal***). Specifically,

Varia argued functionality recited in [1.2] are provided by a “**combined set of components** within the mobile communications device.” *See* APPLE-1053, 6.

Varia also embraced a statement by the examiner during original prosecution of the '984 patent that such transmission functionality is provided by “the **sum total** of the circuitry of the mobile device is the transmitter/receiver.” *Id.*, 1 (citing APPLE-1008, 68). Based on these statements, certain implementations of Willgert’s “communications unit” in a telephone (configured to output voice call signals and RFID signals) similarly includes a combined set of components and/or a sum total of circuitry for outputting *a voice call signal* and *a RFID transponder signal*. APPLE-1004, [0030]-[0032]; *see* APPLE-1001, 9:32-36, 10:8-17. APPLE-1003, ¶128.

Specifically, under Varia’s interpretation (where the *processing circuitry* is not uniquely limited to a particular element), it would have been obvious that some implementations of Willgert’s “communications unit” involve use of a single, common processor (e.g., a control circuit 6) for processing all wireless signals (RFID, Bluetooth, voice calls). APPLE-1003, ¶129; APPLE-1004, [0019], [0024]. Willgert teaches that the “function of the control logic 3” (associated with Bluetooth) may be “included in the function of the control circuit 6,” and thus, circuit 6 provides signal processing functionality for both Bluetooth signals and RFID signals. APPLE-1004, [0019]. Given this disclosure, a POSITA would have

been motivated to configure control circuit 6 as a common processor for handling processing for voice call signals as this configuration would have removed the need for redundant circuitry (e.g., the need for different, dedicated processors) for Bluetooth and voice call signals within a telephone. APPLE-1003, ¶129; *See* APPLE-1017, 1 (describing a “triple-band GSM phone capable of working in the 900-, 1800-, and 1900-MHz bands” that is “Bluetooth enabled” and can connect to the headset...without needing wires of any sort”); *see also* APPLE-1012, 13:1-12 (describing a “dual band mobile station” with a “microprocessor 112” that “controls the overall operation of the mobile station through software programs stored in the program memory 114”). This is also consistent with Willgert’s broader disclosure of leveraging the “communications unit” to provide signaling capabilities relating to different types of wireless signals (e.g., Bluetooth, RFID). APPLE-1004, [0031]; APPLE-1003, ¶¶129-130. Configurations of multi-modal transceivers with circuitry associated with different types of wireless signals were also conventional by the Critical Date. APPLE-1003, ¶¶129-130 (citing APPLE-1010, 3:22-25, 5:1-12).

Varia also characterized its “patented inventions” as requiring “common or overlapping architecture” in the Litigation. APPLE-1053, 13. As explained above, in certain implementations of Willgert’s “communications unit” control circuit 6 functions as a single, common processor for processing wireless signals of the

telephone and thereby also represents an example of a “common or overlapping architecture.” *Id.*; APPLE-1003, ¶¶129-130.

Thus, in the configurations of Willgert discussed above, processing circuitry associated with the single, common processor of Willgert’s “communications unit” (e.g., a control circuit 6) (*processing circuitry*) is configured to execute instructions stored in associated storage (*instructions stored in a memory*) for processing all wireless signals (RFID, Bluetooth, voice calls). APPLE-1004, [0019], [0024], [0031]; APPLE-1003, ¶¶129-130.

[1.3]

As discussed for [1.2], a POSITA would have found it obvious to implement control circuit 6 of Willgert’s “communications unit” as a single, common processor for processing wireless signals of a telephone, including transmissions (i.e., *output*) related to (1) voice call signals (*a voice call signal*) of the telephone and (2) RFID signals (*a RFID signal*). APPLE-1004, [0023], [0024], [0030]; APPLE-1003, ¶131.

As explained above, a POSITA would have configured control circuit 6 to handle processing for voice call signals as this would have removed the need for redundant circuitry for Bluetooth and voice call signals within a telephone. APPLE-1003, ¶132. As to RFID functionality, as discussed in §III.A.1(i), in response to receiving a “query signal,” RFID transponder 2 “send[s] a signal in

response to the signal received.” APPLE-1004, [0025]. The transmission of the responsive signal enables a communicator (i.e., RFID reader) to read the “identity” of RFID transponder 2, e.g., “at a given short distance,” such as “five meters.” *Id.*, [0005]; *see also id.*, [0017] (“[e]ach transponder typically have a unique identity that is sent to the communicator...”); APPLE-1003, ¶132. For example, as discussed for [1.1] in Ground 1A, a POSITA would have found it obvious that the query/transponder signal includes signal information enabling RFID transponder 2 to identify a signal type (read, write) and such that the included information represents an *instruction* to the RFID transponder 2 to identify the type of signal prior to performing a responsive action. APPLE-1003, ¶132; APPLE-1004, [0023].

Varia also broadly interprets transmission states relating to each of the signal types recited in [1.3] (*voice call, RFID signal*). This is illustrated by deposition testimony from Varia’s expert that a “state” can be “A,” “B” or “A and B.” APPLE-1055, 65:13-23, 134:5-13. As best understood, Varia’s expert appears to interpret a “state” as being unbounded such that it encompasses a transmission state in which an associated transmitter may be configured to transmit different signal types (whether sequentially or simultaneously) over a specified time frame (e.g., a state in which a transceiver can transmit either RFID and/or voice call signals). *See* APPLE-1003, ¶133. This interpretation finds no support in the

intrinsic record of the '947 patent.¹⁰ Nonetheless, implementations of the Willgert's "communications unit" discussed above similarly represent processing circuitry in a telephone according to Varia's interpretation, enable transmission of different signal types (e.g., voice calls, RFID). APPLE-1003, ¶133. *See, e.g.*, APPLE-1004, [0014], [0030]-[0032].

In one exemplary usage scenario, the configuration of the "communications unit" would have changed as a result of the type of signal being transmitted, e.g., from transmitting voice call signals for output to transmitting RFID signals for output. APPLE-1003, ¶134. Indeed, where Willgert's "communications unit"

¹⁰ The '947 patent specification does not reference the term "state." Nor does it teach an example where a transceiver switches specifically from a voice transmission mode to an RFID transmission mode. APPLE-1003, ¶133. Instead, it simply discloses a "transceiver 308" capable of transmitting and receiving "signals of a voice call[]" and "signals of the RFID feature, e.g. the output signal of a RFID" as "an active or a passive transponder, and the received probing signal of a RFID reader." *See* APPLE-1001, 6:60-7:35, FIG. 4. But this disclosure lacks detail as to states related to transitioning from one type of transmission to the other. The operation of switch 404 is the most salient disclosure suggestive of transmission states and associated switching in the '949 patent. *Id.*

transmits an RFID signal serially after a user completes a voice call using the telephone, this scenario satisfies Varia's interpretation of [1.3]. APPLE-1003, ¶134. As noted in Ground 2, a mobile device configuration for use in this scenario was also well-known by the Critical Date, as shown by Holloway (APPLE-1006). *See* APPLE-1006, 4:15-18 (describing a telephone that may “undertak[e] a local communication [(RFID communication)] using said communications means substantially simultaneously with, before or subsequent to a telephone communication”).

(ii) Claims 2, 6-8

Ground 1B incorporates the disclosures of Willgert referenced in Ground 1A and thereby render these claims obvious for the same reasons discussed above. APPLE-1003, ¶135.

C. [GROUND 2] – Claims 2-7, 10-14, 17-24, And 27-31 Are Obvious Over Willgert-Mooney-Holloway-Pitroda

1. Willgert-Mooney-Holloway-Pitroda

(i) Holloway

Holloway is directed to addressing limitations of traditional “RFID smart cards” that are “used across a wide range of applications,” including “mass transit, vending machines, access control and use as an electronic purse.” APPLE-1006,

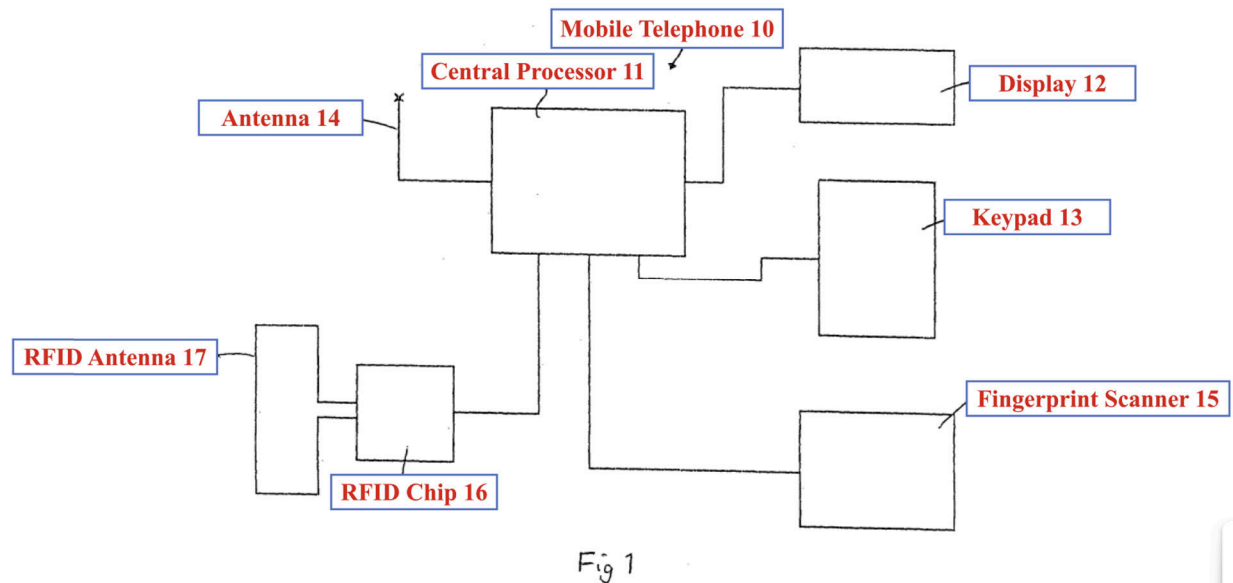
2:15-23¹¹; *see id.*, Abstr., 11:16-27. These limitations include (1) the inability to “verify that the user of the card is the true owner,” (2) lack of compatibility with devices other than “custom device[s]” that are “located either at special cash points or in the user's home,” and (3) a requirement for a user to carry “[a] large number of cards.” *Id.*; APPLE-1003, ¶56.

In addressing these limitations, Holloway proposes using a telephone that is “fully compatible with existing RFID cards” to replace the use of traditional “RFID smart cards” in the variety of RFID smart card-based transactions. APPLE-1006, 11:16-27; *see id.*, 2:15-23. This is accomplished by “incorporat[ing] the functionality of a number of different cards within the one mobile telephone.” *Id.*, 12:5-18; *see id.*, 8:23-9:4, 9:25-10:2. The telephone improves the security of user identity verification through use of “one or more fingerprint scanning means, voice or password recognition means...” *Id.*, Abstr. This allows the telephone to be used “for checking the identity of a user in connection with various transactions.” *Id.*; *see id.*, 2:3-4. For example, to support smart card functionality, the telephone includes “memory” for separately storing information for different RFID smart cards. *Id.*, Abstr. This functionality coincides with the storage configurations of

¹¹ Citations to APPLE-1006 are to PDF page numbers (and not the page numbers identified in the reference).

multiple RFIDs in the '947 patent. *See, e.g.*, APPLE-1001, 4:63-67; 7:48-56; APPLE-1003, ¶57.

Figure 1 (annotated below) shows an example of the Holloway's telephone.



APPLE-1006, FIG. 1 (annotated)

RFID smart card functionality in Holloway's telephone is provided through a "memory" configured to "receive and/or send data via [a] telephone means." APPLE-1006, 3:28-30. The "memory" may store information "corresponding to different smart cards" (*see id.*, Abstr.). This storage configuration "makes it possible to allocate service providers with individual areas for their particular application[,]" and "incorporate the functionality of a number of different cards within the one mobile telephone." *Id.*, 12:11-18. Implementations of this storage configuration may involve use of subdivisions/separations of the "memory." *Id.*,

Abstr. (“memory” may be “divided into a plurality of secure areas”); APPLE-1003, ¶¶58-59.

Holloway envisions incorporating RFID technology with a mobile phone such that, in some implementations, a shared memory exists for RFID and telephone communications. APPLE-1003, ¶60 (citing APPLE-1017, 2:28-30). For example, the telephone may “undertak[e] a local communication [(RFID communication)] using said communications means substantially simultaneously with, before or subsequent to a telephone communication.” APPLE-1006, 4:15-18. Thus, a user can securely interact with RFID data within the phone using various devices, e.g., external readers, RFID smart cards, another mobile phone, the inputs of the mobile phone, or software within the phone connected to external entities, e.g., a bank. APPLE-1006, 3:1-2, 3:20-27, 6:11-20, 8:1-6; APPLE-1003, ¶60.

(ii) Pitroda

Pitroda is directed to “methods of administering a plurality of client accounts for an electronic transaction device...” APPLE-1007, 1:6-12. An “electronic transaction device” can communicate with “point of sale computers” so that “a person may use a single electronic transaction device to conduct financial transactions to several credit, debit, or deposit accounts, such as accounts normally associated with...banking transactions.” *Id.*, 1:13-42. The “electronic transaction device” may be “general purpose hand held computers” that are “programmed to

conduct electronic transactions[,]" e.g., those that run "Palm OS or Microsoft Windows CE." *Id.*, 1:43-52. For example, in performing an electronic financial transaction, a user can "select a credit card account" on an electronic transaction device 12 and then "transmit the account information" to a payment processing device. *Id.*, 7:18-29; APPLE-1003, ¶61.

(iii) Combination

As combined, Willgert-Mooney-Holloway-Pitroda would have incorporated the teachings of Holloway and Pitroda relating to RFID smart cards to further improve Willgert-Mooney (discussed in §III.A.1). A POSITA would have been motivated to seek these improvements because Willgert and Holloway each similarly express a desire to improve user convenience when using a similar type of device—a telephone with RFID signaling capabilities. *Compare* APPLE-1004, [0009] (discussing benefits of "simpler handling"), *and* APPLE-1006, 6:4-16 (discussing "greater flexibility and convenience"). Like Willgert and Holloway, Pitroda also focuses on user action, and does so by specifically discussing a usage scenario involving the same type of telephone in one of the RFID smart card transactions contemplated in Holloway. *See* APPLE-1007, 7:18-40 (describing a RFID-capable telephone being used in a financial transaction); APPLE-1003, ¶¶62, 69.

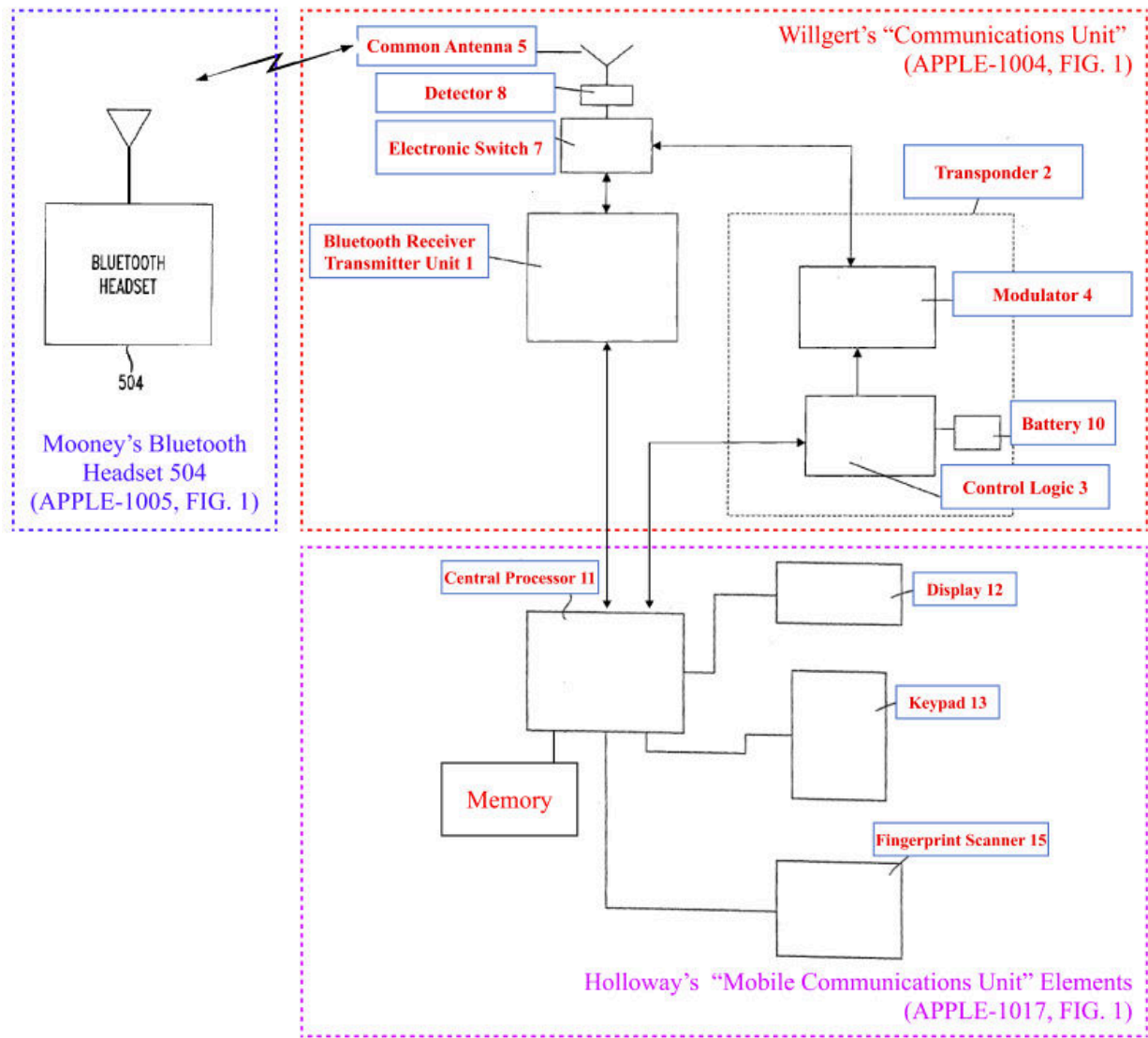
Given the overlaps in their disclosures, a POSITA would have sought to

improve the RFID capabilities of Willgert-Mooney by incorporating the teachings of Holloway and Pitroda. Specifically, the POSITA would have looked to Holloway's teaching of using a telephone for use in an RFID smart transaction. APPLE-1006, 10:4-15. The POSITA would have also looked to Pitroda's teaching of enabling a user to select a particular RFID smart card (from among multiple available RFID smart cards) for use in the RFID smart card transaction. APPLE-1007, 7:18-40. By combining these teachings, a POSITA would have realized the "real benefit" to the user described in Holloway—a mobile device configuration where the user "no longer has to carry in his wallet a collection of cards that he may rarely use." APPLE-1006, 12:11-18; APPLE-1003, ¶70. By combining these features, a POSITA would have understood and found obvious that the features describing multiple RFID smart cards and the selection of those RFID smart cards in Holloway and Pitroda further enable Willgert's transponder that already possess the ability to have RFID data "written into the transponder memory, so that said information can be read-out from the memory later on." APPLE-1004, [0018].

To provide the improvements discussed above, a POSITA would have implemented the Willgert-Mooney-Holloway-Pitroda phone to incorporate an improved RFID transponder. APPLE-1003, ¶71. This (1) enables the functionality of multiple RFID smart cards (as contemplated in each of Holloway and Pitroda) and (2) enhances the capabilities of Willgert's telephone. APPLE-

1003, ¶71; *see* APPLE-1004, [0015]; APPLE-1006, 3:1-5; *see id.*, 3:10-12. The phone would also have included logic (e.g., implemented through Holloway's central processor 11 and/or Willgert's control circuit 6) to provide management of RFID data (e.g., a plurality of RFID smart cards) for various RFID implementations. APPLE-1004, [0019]; APPLE-1006, 3:24-26.

One example of Willgert-Mooney-Holloway-Pitroda is shown below:



Willgert-Mooney-Holloway-Pitroda¹²

Because Willgert, Holloway, and Pitroda each describe employing RFID technology through mobile devices, a POSITA would have understood and found obvious that Pitroda's organization of memory storage for each RFID smart card and the input capabilities of the mobile phone could be utilized to improve the user's experience and achieve the goals stated by Willgert and Holloway. APPLE-1003, ¶¶72-73. Thus, in implementing Willgert-Mooney-Holloway-Pitroda, a POSITA would have utilized hardware elements described in Willgert and Holloway, while leveraging the software enhancements described in Pitroda, e.g., the employment of multiple different RFID smart cards through the Willgert transponder using Pitroda's disclosure of user selection. APPLE-1003, ¶¶72-73.

Finally, a POSITA would have had a reasonable expectation of success in combining the teachings of Willgert-Mooney, Holloway, and Pitroda in the manner discussed above. APPLE-1003, ¶74. Implementation of the combination with Pitroda would have required only routine knowledge because Holloway and Willgert both teach similar types of devices (telephones) for enabling similar types of communication functionality (RFID communication, telephone

¹² Figure component labels have been added in red font. *See* APPLE-1006, Abstr., 5:21-28; APPLE-1003, ¶¶72-73.

communication). APPLE-1004, [0014]-[0019]; APPLE-1006, 4:20-5:15. The incorporation of multiple types of RFID smart card functionality into a mobile device (e.g., Willgert-Mooney telephone) also represented a well-known configuration by 12/11/2000 (i.e., Holloway's filing date). *See, e.g.*, APPLE-1006, 2:15-23 (“**For some time** RFID smart cards have been used across a wide range of applications”); *see also id.*, 2:6-13 (“It seems probable that the trend to include yet more functionality within the telephone will continue,” e.g., “it would be advantageous to provide secure proximity operation using a mobile telephone”). For example, by at least 2002, combining RFID technology implementations into a single device was practiced in “hybrid cards,” which are “a physical medium on which several technologies coexist . . . [to] support different external systems and applications.” *Id.* Specifically, the hybrid cards could incorporate “[m]ultiple contactless technologies (125 kHz, 13.56 MHz)” and “both contact and contactless technologies are in the early stages of market deployment.” *Id.*; APPLE-1003, ¶74.

Providing RFID technology for multiple applications (e.g., mass transit, credit/debit transactions, and access control, as described in Holloway) was similarly well-known by October 2002 (before the Critical Date). *Id.*; *see also* APPLE-1006, 2:15-23. Specifically, “[a]pplications such as logical access to computer networks, electronic payment, electronic ticketing and transit can be

combined with physical access to offer a multi-application and multi-technology ID credential [(smart card)].” APPLE-1006, 2; APPLE-1003, ¶75.

Indeed, as Dr. Ding explains, “various systems were known to have been capable of simultaneously providing RFID smart card functionality complying with multiple standards, e.g., through backwards compatibility.” APPLE-1003, ¶76 (citing APPLE-1019, 21-22, 13, identifying “125 kHz technology” as a “secure and proven technology for access control applications” and “newer contactless technologies,” and teaching that “it is possible to include both contactless technologies on a single card.”). For instance, the “multiple standards” could include the “three primary contactless technologies considered for physical access control applications: 125 kHz, ISO/IEC 14443, and ISO/IEC 15693 technologies.” APPLE-1006, 2. Thus, implementation of Willgert-Mooney-Holloway-Pitroda would have been within the skill level of a POSITA without invention. APPLE-1003, ¶76; APPLE-1019, 13, 19, 21-22.

2. Analysis¹³

¹³ Ground 1B applies claim interpretations advanced by Varia and thereby demonstrates satisfaction in a manner consistent with Varia’s infringement allegations before the district court. *See* APPLE-1052. For example, in alleging infringement of claim 4, Varia identifies “contactless payment transactions”

(i) *Claims 2-7, 13, 31*

[2]

As described in the '947 patent specification, “RFID 110 may be any keys and/or identifiers,” including “identifiers, such as employee numbers, driver’s license numbers, credit card numbers..., affinity program member identifiers...”

APPLE-1001, 4:1-6. As discussed for [2] in Ground 1A (§III.A.2(ii)), Willgert

involving a selection of “card data” by a “cardholder.” *Id.*, 17. Based on this interpretation, Apple similarly identifies teachings of Holloway enabling “the ability of [a] mobile telephone to function as an RFID smart card” where “the user is able to perform all conventional credit and debit card transactions,” including selecting a particular RFID smart card for a given transaction. APPLE-1017, 10:4-15. The prior art application in Ground 1B is not an endorsement of Varia’s constructions since “37 C.F.R. §104(b)(3) does not require Petitioner to express its subjective agreement regarding correctness of its proffered claim constructions or to take ownership of those constructions.” IPR2018-00084 Pap. 14, 10-11 (PTAB April 25, 2018); *see* IPR2020-00086 Pap. 8, 18 (PTAB Apr. 27, 2020) (“an explicit statement of reliance on a PO’s litigation constructions ‘suffices to identify claim constructions Petitioner is adopting for purposes of the requested review in compliance with § 104(b)(3)’”).

describes an *RFID data compris[ing]* identification information (*identifier*).

APPLE-1003, ¶136; APPLE-1004, [0017]. Holloway further identifies scenarios where RFID technology is used through a telephone, including “at passport control points, [to] access to high security buildings or [for] checks on the holders of driving licenses.” APPLE-1006, 9:25-10:2. Thus, in Willgert-Mooney-Holloway-Pitroda, identification information output by an RFID transponder (*RFID data*) may include a *security key* (e.g., information providing “access to high security buildings”) and/or an *identifier* (e.g., information representing a “driving license[]”). *Id.*; APPLE-1003, ¶136; *see* APPLE-1001, 1:45-58.

To the extent that *selected one* in [2] is deemed to require user selection, it would have been obvious that a phone provided by Willgert-Mooney-Holloway-Pitroda is configured to output, via an RFID transponder, identification information (*RFID data*) based on a user selection (*selected one*) of a particular RFID smart card from amongst the different types of RFID smart cards described in Holloway, including information providing “access to high security buildings” (*security key*), or information representing a “driver license[]” (*identity*). APPLE-1006, 9:25-10:2; APPLE-1003, ¶137.

Specifically, Holloway’s telephone “provides a means to carry out normal day to day credit/debit purchases,” which a POSITA would have understood may be accomplished through, e.g., user selection between a credit card and a debit card

for use in an RFID smart card transaction. APPLE-1006, 7:28-32, 10:4-15; APPLE-1003, ¶138; APPLE-1007, 7:16-38, 8:18-29. This implementation detail is consistent with Holloway's teach of telephone 10 as "incorporat[ing] the functionality of a **number of different cards** within the one mobile telephone." APPLE-1003, ¶138. Holloway also supports a POSITA's understanding of this implementation through various teachings relating to display and user input mechanisms for supporting RFID smart card-based financial transactions provided by the telephone. *See, e.g.*, APPLE-1006, 9:1-6 (displaying "credit card number and expiry date" associated with a transaction), 7:22-26 ("the user is able to operate [the telephone] for any payment application, just like with an RFID smart card..."), 8:14-24 (in performing a transaction using the telephone, the user may "enter the amount to be paid").

[3]

As discussed for [2], the Willgert-Mooney-Holloway-Pitroda telephone would have allowed RFID technology to be used in the scenarios described in Holloway, including "at passport control points, [to] access to high security buildings or [for] checks on the holders of driving licenses." APPLE-1006, 9:25-10:2. A POSITA would have found it obvious that "access to high security buildings" within Holloway may involve, e.g., providing access to a building through an exterior door by transmission of RFID data including an access

credential (*exterior door key*) to an RFID reader associated with the door.

APPLE-1003, ¶139. Indeed, RFID-based access control systems were well-known by the Critical Date. *Id.* (citing APPLE-1019, 8, describing an “access control system” where an RFID smart card is “presented to a door reader”).

[4]

See [3], *supra*. As discussed in §III.B.1(ii), Holloway identifies scenarios where RFID technology is used through a telephone, including “all conventional credit and debit card transactions.” APPLE-1006, 7:28-32; APPLE-1003, ¶140. Further, from Pitroda, a user can “select a credit card account on the client's electronic transaction device 12 and transmit the account information to the restaurant server’s electronic transaction device 12.” APPLE-1007, 8:18-29. Thus, in Willgert-Mooney-Holloway-Pitroda, a telephone would have been configured to output identity information (*RFID data*) with a *credit card number* for use in a RFID smartcard-based financial transaction. APPLE-1003, ¶141.

[5]

Holloway describes a telephone “incorporat[ing] the functionality of a number of different cards within the one mobile telephone,” which, in combination with Willgert and Mooney, renders this claim obvious. APPLE-1006, 12:5-18; APPLE-1003, ¶142.

As discussed for [2], Pitroda teaches user selection of (*facilitating the user*

in selecting) an RFID smart card (***RFID data***) from among a wallet of available RFID smart cards (***from a plurality of the RFID data***). APPLE-1007, 7:16-38, 8:18-29. A POSITA would have understood and found obvious that implementations of the Willgert-Mooney-Holloway-Pitroda phone to enable user selection of a particular RFID smart card from “different cards” for use in an RFID smart card transaction. APPLE-1006, 12:11-18; *see id.*, 7:28-32, 10:4-15; APPLE-1003, ¶143. In such implementations, each RFID smart card would have been associated with different identification information (e.g., different credit card number), and therefore, the identification information associated with the “different cards” (and stored in memory) collectively represent ***a plurality of the RFID data***. *See id.*, Abstr. (“[t]he memory (16) may have sub-divisions corresponding to different smart cards”), 12:11-18 (“[t]he memory within the telephone 10 may be sub-divided into a number of mutually secure areas partitioned by firewalls[,]” which “makes it possible to allocate service providers with individual areas for their particular application[.]” and “possible to incorporate the functionality of a number of different cards within the one mobile telephone.”). Thus, in ***facilitating selection of*** an RFID smart card from “multiple cards” through a user interface (***using the mobile communication device***), the Willgert-Mooney-Holloway-Pitroda phone would have thereby ***facilitat[ed] the user in selecting*** an RFID smart card (***RFID data***) from multiple available RFID smart

cards (*from a plurality of the RFID data*). APPLE-1003, ¶143.

Further, because a user selection of an RFID smart card allows the transmission of identification information of the selected RFID smart card by the mobile device, a POSITA would have understood that selection of the RFID smart card itself is a selection of the outputted identification information (*RFID data*) from amongst the identification information for different available RFID smart cards (*plurality of the RFID data*). APPLE-1003, ¶144.

[6]

As discussed for [6] in Ground 1A (§III.A.2(ii)), Willgert teaches that the “the transponder may also be designed to enable information to be written into the transponder memory, so that said information can be read-out from the memory later on, in the aforesaid manner [(in response to a query/probing signal)].” APPLE-1004, [0018]. Thus, by enabling information to be written into transponder memory, the Willgert thereby discloses *facilitating provision of the RFID data to the mobile communication device*. *Id.*; APPLE-1003, ¶145.

Further, the Willgert-Mooney-Holloway-Pitroda telephone stores “a number of different cards within the one mobile telephone,” as described in Holloway. APPLE-1006, 12:11-18; *see id.*, 2:15-23 (“mass transit, vending machines, access control and use as an electronic purse”). This stored information would have been obtained at least during an initial configuration operation through one of several

exemplary processes described in Pitroda as being used by transaction service providers to provide RFID smart card information to a telephone. *See, e.g.*, APPLE-1007, 3:59-4:40. Pitroda's Figure 10 references a "transaction service provider service flow," during which a user registers as a new client (step 150) and a "new electronic transaction device 12 requested by [the] client." APPLE-1007, 17:44-62. During this process, a "Citibank MasterCard" is "Loaded" onto a client's device by the transaction service provider (step 158) and a client profile is updated (step 160). *Id.*, 17:63-65. Further, the transaction service provider may provide "Issue account services," which include "activating specific accounts, such as credit cards, on an electronic transaction device 12" after which "the specific card(s) may be **downloaded** from the transaction service provider 10 to the electronic transaction device 12." APPLE-1007, 12:6-14. A POSITA would have understood that "loading" (or "download[ing]") of RFID smart card information onto Willgert-Mooney-Holloway-Pitroda telephone involves the provision of identification information to be used in an RFID smart card transaction (*provision of the RFID data*). APPLE-1003, ¶146.

[7]

As discussed for [5] in Ground 1A (§III.A.2(ii)), Willgert teaches that the "the transponder may also be designed to enable information to be written into the transponder memory, so that said information can be read-out from the memory

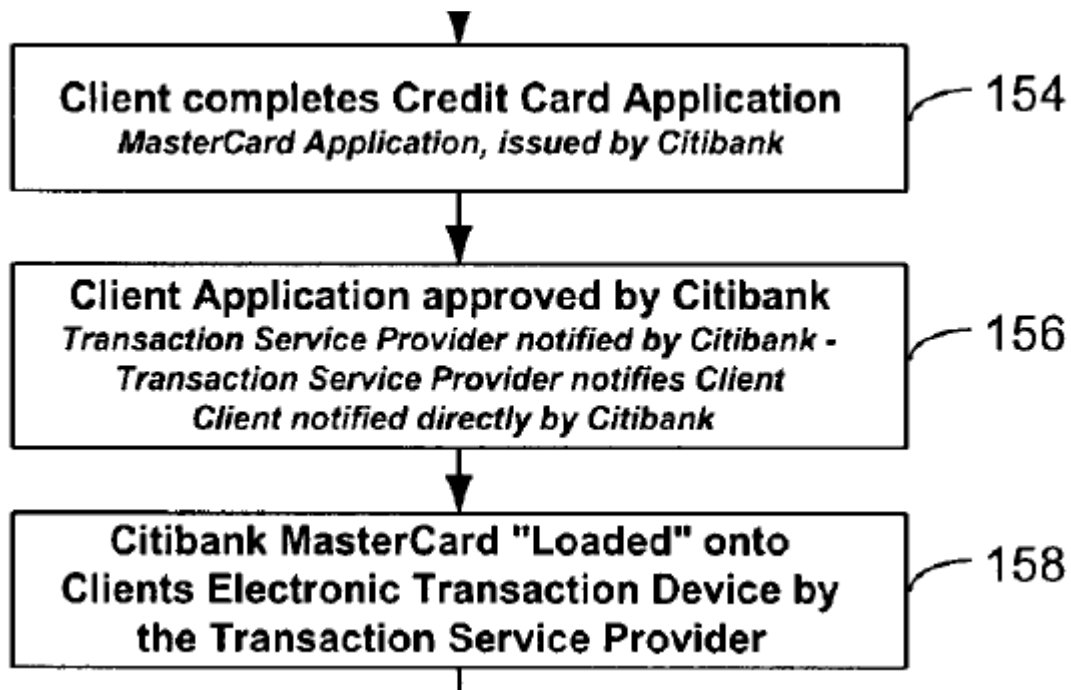
later on, in the aforesaid manner [(in response to a query/probing signal)].”

APPLE-1004, [0018]. Thus, by enabling information to be written into transponder memory, the Willgert thereby discloses *facilitating provision of the RFID data to the mobile communication device*. *Id.*; APPLE-1003, ¶147.

Further, a POSITA would have understood and found obvious that, in providing transponder data to a telephone, the data can be “read-out from them memory later on” such that the information written into transponder memory includes attributes associated with a subsequent transmission based on read-out (*at least a signaling attribute associated with the outputting of the RFID data*). *Id.*; APPLE-1003, ¶147.

Further, the Willgert-Mooney-Holloway-Pitroda telephone stores “a number of different cards within the one mobile telephone,” as described in Holloway. APPLE-1006, 12:11-18; *see id.*, 2:15-23 (“mass transit, vending machines, access control and use as an electronic purse”). This stored information would have been obtained at least during an initial configuration operation through one of several exemplary processes described in Pitroda as being used by transaction service providers to provide RFID smart card information to a telephone. *See e.g.*, APPLE-1007, 3:59-4:40. Pitroda’s Figure 10 references a “transaction service provider service flow,” during which a user registers as a new client (step 150) and a “new electronic transaction device 12 requested by [the] client.” APPLE-1007,

17:44-62. During this process, a “Citibank MasterCard” is “Loaded” onto a client’s device by the transaction service provider (step 158) and a client profile is updated (step 160). *Id.*, 17:63-65. Further, the transaction service provider may provide “Issue account services,” which include “activating specific accounts, such as credit cards, on an electronic transaction device 12” after which “the specific card(s) may be **downloaded** from the transaction service provider 10 to the electronic transaction device 12.” APPLE-1007, 12:6-14. A POSITA would have understood that “loading” (or “download[ing]”) of RFID smart card information onto Willgert-Mooney-Holloway-Pitroda telephone involves the provision of identification information to be used in an RFID smart card transaction (*provision of the RFID data to the mobile communication device*). APPLE-1003, ¶148.



APPLE-1007, Fig. 10 (cropped)

Further, by the Critical Date, RFID readers of different transaction service providers were known to use different signal formats (e.g., different signal frequencies, different coding schemes). *See* APPLE-1025 (“other varieties of tags and sensors have been developed which operate in the frequency range 50 Hz – 50 MHz”). As Dr. Ding explains, “the receipt of provider-specific signal format information by the Willgert-Mooney-Holloway-Pitroda phone would have enabled the telephone to communicate with the different types of RFID readers described in Holloway.” APPLE-1003, ¶149 (citing APPLE-1006, 7:22-26, describing a “reader” associated with “mass transit application,” 7:27-30, describing a “reader that is interfaced to the retailer’s EPOS (electronic point-of-sale) system,” and 8:14-24, describing a “reader fitted to a vending machine”).

Further, “various RFID readers used different generations of smart card technology, and at least some of the RFID readers described in Holloway would have used different frequencies and and/or different signal formatting requirements (*signaling attributes*), including different International Organization for Standardization (IOS) standards.” APPLE-1003, ¶150 (citing APPLE-1019, 20, which recognizes that RFID signals can have different ISO standards based on security requirements). And, because Holloway teaches “one mobile telephone” for “a number of different cards,” a POSITA would have recognized that the RFID

smart card information “loaded” or “downloaded” onto the Willgert-Mooney-Holloway-Pitroda telephone would included provider-specific signal information (*signaling attribute*) for enabling the telephone to communicate with different types of RFID readers (e.g., each associated with a different transaction service provider). APPLE-1003, ¶150. Indeed, provisioning of RFID signal information to RFID transponders to enable communications with RFID readers was conventional by the Critical Date. *Id.*; *see, e.g.*, APPLE-1006, 2:15-23, 4:1-2, 4:20-27, 7:11-20, 9:1-6; APPLE-1025; APPLE-1004, [0017], *see id.*, [0015] (“[t]he identity can be read by a communicator at a given short distance”).

[13]

See [6], *supra*. As discussed for [1.2] in Ground 1A (§III.A.2(i)), in implementations of Willgert-Mooney-Holloway, signal transmission functionality of the “communications unit” is controlled by control circuit 6, which may be provided using a processor that runs software instructions (*the instructions*) stored in memory. APPLE-1003, ¶151; *see* APPLE-1004, [0017]-[0019], [0022]; APPLE-1012, Abstract, 13:1-12, 13:21-36. The software instructions provide signal transmission functionality, and thus, would have been *configured to* enable an RFID transponder to facilitate provisioning of RFID smart card information to a telephone (*facilitate provision of the RFID data*). *See* [6], *supra*; *see also* APPLE-1006, 2:15-23, 4:1-2, 4:20-27, 7:11-20, 9:1-6; APPLE-1025.

[31]

See [7], *supra*. As discussed for [7], in implementations of Willgert-Mooney-Holloway-Pitroda, software instructions (*the instructions*) provided by a processor are ***designed to*** enable an RFID transponder to facilitate provisioning of RFID smart card information to a telephone. See APPLE-1006, 2:15-23, 4:1-2, 4:20-27, 7:11-20, 9:1-6; *see, e.g.*, APPLE-1025. Such provisioning would have included proprietary signal information (*signaling attribute associated with the outputting of the RFID data*), which would have allowed the mobile device to output identification information of different RFID smart cards (*in the form of a radio frequency signal*). APPLE-1025; APPLE-1003, ¶152.

(ii) *Claims 10-12, 14, 17-24, 27-31*

Willgert-Mooney-Holloway-Pitroda renders the following claims obvious in same manner as discussed above. APPLE-1003, ¶153.

Claim	Corresponding Claim
[10], [17], [24], [27]	[2]
[11], [12], [18], [19], [28], [29]	[3]
[20]	[4]
[21]	[5]

[14], [23], [31]	[7]
[22], [30]	[13], [6]

IV. PTAB DISCRETION

A. 35 U.S.C. §325(d)

Discretionary denial under the Board’s §325(d) *Advanced Bionics* analysis is not warranted. See IPR2019-01469, Paper 6, 8-9 (PTAB Feb. 13, 2020)(“*Advanced Bionics*”)(precedential). Neither prong of the *Advanced Bionics* test is met. None of the prior art advanced in this Petition was previously before the Office and there is no evidence that the Office substantively considered these references during prosecution. See APPLE-1002. Moreover, the same or substantially the same arguments were not previously presented to the Office. *Id.* Indeed, there could be no overlap between the arguments made before the Office because the Examiner issued no prior art rejections during prosecution. See *id.*, 51-55.

The second prong of the *Advanced Bionics* test is also not met. The Examiner did not issue any prior art rejections or provide substantive discussion of any prior art reference. The Examiner thereby overlooked prior art disclosures of Willgert, Mooney, Holloway, and Pitroda, which, as highlighted in the grounds advanced in this Petition, renders the Challenged Claims obvious. Moreover, Apple has shown a reasonable likelihood that it would prevail that at least one of the Challenged Claims is unpatentable over the applied art based on the current

record. *See* §III.A-C; *see also* PGR2022-00010, Paper 9, 8-9 (PTAB June 6, 2022). As such, Apple has demonstrated material error by the Office, and discretionary denial under §325(d) is not warranted.

B. 35 U.S.C. §314(a)

Consistent with Congressional intent, the goals of *Fintiv*, and the interim guidance issued by Director Vidal on June 21, 2022 (“Director’s Guidance” or APPLE-1056), Apple asks the Board to consider the challenges raised in this Petition. IPR2020-00019, Pap. 11, at 6 (PTAB Mar. 20, 2020)(“*Fintiv*”)(precedential). For the reasons noted below, a holistic analysis of the *Fintiv* factors favors institution.¹⁴

1. Factor 1

Factor 1 is currently neutral because a stay has not been requested in the Litigation. Moreover, the Board does “not attempt to predict” how an appeals or district court might adjudicate a future motion to stay. *Fintiv*, 12; IPR2019-01393, Pap. 24, 7 (PTAB June 16, 2020)(“*Sand Revolution*”)(informative); IPR2020-

¹⁴ Apart from Apple’s showing that *Fintiv* favors institution, the *Fintiv* framework should not be followed because it is legally invalid. The framework (1) exceeds the Director’s authority, (2) is arbitrary and capricious, and (3) was adopted without notice-and-comment rulemaking.

01019, Pap. 12, 14 (PTAB Dec. 1, 2020)(“*Sotera*”)(precedential).

2. Factor 2

Factor 2 favors institution because no trial date is set in the Litigation, and any scheduled trial date is speculative since “scheduled trial dates are unreliable and often change.” APPLE-1056, 8. A claim construction hearing is yet to be scheduled. *See* APPLE-1058, 3. Further, the median time-to-trial for EDNY is currently 63.8 months, which suggests a likely trial date no sooner than January 2029. APPLE-1057, 2. In contrast, if instituted, the Board will likely issue its Final Written Decision around March 2026.

3. Factor 3

By any objective standard, this petition is being filed at an early stage of the Litigation, which “has weighed against exercising the authority to deny institution[.]” IPR2020-00156, Pap. 10, 9 & n.8 (June 15, 2020)(“*Seven*”), 11-12 (quoting *Fintiv*, 11). The District Court has yet to expend significant resources on the case. *Seven*, 10-13; *Sotera*, 16-17; IPR2020- 00820, Pap. 15, 11-13 (Oct. 21, 2020)(“*Snap*”)(precedential). By contrast, Apple has diligently filed this petition roughly more than a month ahead of the one-year time bar, while the Litigation is still in its early stages.

4. Factor 4

There is limited overlap between issues between the Litigation and any IPR

resulting from this petition. Such overlap “has tended to weigh against exercising discretion to deny institution.” *Fintiv*, 12-14. Varia asserts claims 1, 5, 9, 12, 16, 19, 21, 26, and 29 of infringement in the district court, while this Petition addresses all claims.

5. Factor 5

Apple’s status in the Litigation is at worst neutral under *Fintiv* Factor 5. Indeed, the *Fintiv* decision “says nothing about situations in which the petitioner is the same as, or is related to, the district court defendant.” IPR2020-00122, Pap. 15, *10 (Crumbly, dissenting) (“*Cisco*”); *Fintiv*, 13-14. At worst, where the parties are the same, Factor 5 is neutral. *Cisco*, 10.

6. Factor 6

As explained by Director Vidal, “the PTAB will not deny institution...under *Fintiv*...when a petition presents compelling evidence of unpatentability...” APPLE-1056, 3-5, 9; *see also* *Fintiv*, 14-15. Here, the merits of this Petition are similarly compelling, and institution would result in a finding of unpatentability of the Challenged Claims, which are obvious based on prior art references that materially differ from those considered by the Examiner during prosecution. *See* §§III.A-C; *see* APPLE-1003. Further, any inefficiencies borne out parallel proceedings before the Litigation is outweighed by the strength of the merits alone. APPLE-1056, 3-5, 9; *Fintiv*, 14-15 (“if the merits of a ground raised in the petition

seem particularly strong...institution of a trial may serve...overall system efficiency and integrity”). Accordingly, *Fintiv* Factor 6 strongly favors institution.

V. CONCLUSION AND FEES

The Challenged Claims are unpatentable. Petitioner authorizes charge of fees to Deposit Account 06-1050.

VI. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(a)(1)

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

Apple Inc. is the real party-in-interest.

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

The '947 patent is the subject of a civil action, *Varia Holdings LLC v. Apple Inc.*, 23-cv-7477, E.D.N.Y., filed October 5, 2023 (APPLE-1004). Apple is not aware of any other disclaimers, reexamination certificates, or IPR petitions addressing the '947 patent.

C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Apple provides the following designation of counsel.

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D. Service Information

Please address all correspondence and service to the address listed above.

Petitioner consents to electronic service by email at IPR50095-0182IP1@fr.com.

Respectfully submitted,

Dated: August 30, 2024

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for Inter Partes Review totals 13,565 words, which is less than the 14,000 allowed under 37 CFR § 42.24.

Dated: August 30, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that on August 30, 2024, a complete and entire copy of this Petition for *Inter Partes* Review and all supporting exhibits were provided by Federal Express, to the Patent Owner, by serving the correspondence address of record as follows:

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