

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Apple Inc.,
Petitioner,

v.

Varia Holdings LLC,
Patent Owner.
U.S. Patent No. 8,381,974

Inter Partes Review Case No. 2024-01362

PATENT OWNER'S RESPONSE

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PATENT OWNER’S EXHIBIT LIST

Exhibit No.	Patent Owner’s Exhibits
Ex. 2001	U.S. Patent No. 6,771,981 to Zalewski <i>et al.</i>
Ex. 2002	Declaration of Timothy K. Gilman in Support of Motion for Pro Hac Vice Admission
Ex. 2003	Declaration of Natalie D. Lieber in Support of Motion for Pro Hac Vice Admission
Ex. 2004	Declaration of Dr. Michael I. Shamos, Ph.D., dated June 4, 2025
Ex. 2005	Resume of Dr. Michael I. Shamos, Ph.D.
Ex. 2006	U.S. Provisional Patent Application No. 60/478,245
Ex. 2007	U.S. Patent Publication No. US2002/0123325 to Cooper
Ex. 2008	Deposition Transcript of Dr. Ding, dated May 22, 2025

I. Introduction

The Petition challenges claims 1-19 (“Challenged Claims”) of U.S. Patent No. 8,381,974 (“the ’974 patent”) under three Grounds of unpatentability. The Board should find the Petition has failed to meet its burden of demonstrating the unpatentability of Challenged Claims.

The Board should reject the invalidity Grounds proposed in the Petition because they fail to properly construe the terms “RFID transponder signal,” “RFID transponder data as a radio frequency signal,” and “second RFID transponder data as a second radio frequency signal.” The ’974 patent makes clear that those terms mean an RFID signal that is emulated by a mobile communications device without a physical RFID transponder.

This construction is confirmed by the prosecution history of related U.S. Patent No. 8,127,984 (“the ’984 patent”), the parent of the ’974 patent. There, Patent Owner distinguished applied prior art (the Zalewski reference), which outputs RFID signals through a physical RFID transponder, and therefore, failed to disclose an emulated RFID signal. All three Grounds allege obviousness of the Challenged Claims, relying on the Willgert reference that, like Zalewski, discloses a device that does not emulate an RFID signal, but instead outputs RFID signals directly from a physical RFID transponder. Willgert does not disclose emulation of an RFID signal any more than Zalewski did. Willgert’s physical RFID transponder can receive a

query signal and reflect the received signal while modulating the signal with a pulse train, but Willgert's device cannot behave as if it were one or more RFID transponders without the need for an actual physical transponder.

The Board should also reject the invalidity Grounds proposed in the Petition because they fail to properly construe the term "voice call signal[s]." The '974 patent claims and specification make clear this term means the transmit and receive signal[s] of a voice call over the network of a wireless network service provider. This construction is confirmed by the prosecution history of the related '984 patent. There, Patent Owner distinguished applied prior art (the Cooper reference), which output voice data from a Bluetooth headset to a telephone terminal, and therefore, failed to disclose "voice call signals." Grounds 1A and 2 allege obviousness of the Challenged Claims on this very point distinguished during prosecution, relying on the Willgert-Mooney combination that, like Cooper, does not disclose "voice call signal[s]."

The Petition's invalidity Grounds therefore fail. As explained below, the Petition has failed to demonstrate that all the limitations of any Challenged Claim are met by the cited references. Patent Owner's explanations herein are supported by the Declaration of Dr. Michael I. Shamos (Ex. 2004).

II. The '974 patent

A. The Specification

The '974 patent is directed to a mobile communication device “equipped with hardware and/or software components to enable the device to output a data in a form of a radio frequency signal, emulating outputting of the data by either an active or a passive RFID transponder.” Ex. 1001 (abstract). At the time of the invention, it was “not uncommon to find a person having to carry a number of physical keys and access/identification cards/tags to gain access to secured premises, such as one’s home, office, parking garage, and so forth.” Ex. 1001 (col. 1:45-48).

The patent addresses this issue with a mobile communication device equipped “to provide a RFID, emulating a RFID transponder, as well as facilitating user communication.” Ex. 1001 (col. 3:59-61). The “RFID 110 may be any keys and/or identifiers, including but not limited to security keys, such as garage door ‘keys’, exterior or interior door keys, or identifiers, such as, employee numbers, driver’s license numbers, social security numbers, credit card numbers (optionally, including expiration dates), affinity program member identifiers, and so forth.” Ex. 1001 (col. 3:66-4:4). The mobile communications device includes “RFID Emulation HW/SW Elements 106.” *See* Ex 1001, FIG. 1.

All disclosed embodiments in the specification emulate an RFID transponder signal *without a physical RFID transponder*. For example, in the FIG. 4

transceiver¹ embodiment, “low frequency signal processing 408 . . . performs up and down conversions of the transmit and receive signals of the RFID feature.” Ex. 1001 (col. 7:21-23). The “transmit and receive signals of the RFID feature” are “the output signal of a RFID to emulate either an active or passive transponder, and the received probing signal of a RFID reader.” Ex. 1001 (col. 7:23-26) (emphasis added).

“A user may select one of the RFIDs, and instruct device 102 to output the selected RFID in a form of an appropriate radio frequency signal, emulating provision of the RFID by an active RFID transponder, using e.g. a ‘send/call’ key of device 102.” Ex. 1001 (col. 7:49-53). “[A]n access key/identifier (such as employee number), may also be selected/designated as a default RFID, the output of which may be emulated in a passive manner. That is, the 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.” Ex. 1001 (col. 5:1-4).

The “transmit and receive signals of a voice call” are “the primary communication function of mobile communication device.” Ex. 1001 (col. 7:14-17). The mobile communication device is “equipped with hardware and/or software

¹ No physical RFID transponder is included in the FIG. 4 embodiment, nor any other specification embodiment.

elements 104 to perform its primary function, which is to facilitate a user of device 102 to engage in communication with another user of another communication device.” Ex. 1001 (col. 3:33-37).

“The term ‘wireless mobile phone’ as used herein, including the specification and the claims, refers to the class of telephony devices equipped to facilitate a user in communicating with another user of another communication device, notwithstanding the user’s movement around different geographic areas, so long the wireless mobile phone is in contact with a base/service station of a wireless network service provider.” Ex. 1001 (col. 4:11-21). The “other user/communication device may be mobile or land line based.” Ex. 1001 (col. 4:20-21).

B. Claims of the ’974 patent

The ’974 patent has 3 independent claims, namely Claims 1, 8, and 12. Claim 6, which depends from claim 1, expressly requires “emulating output” of “RFID transponder data”:

The method of claim 1, wherein the method further comprises:

monitoring for proximal presence of the RFID reader by the mobile communication device; and

on detection of the RFID reader by the mobile communication device, outputting by the transceiver second RFID transponder data as a second radio frequency signal, the outputting *emulating* output

of the second RFID transponder data by an RFID transponder of a passive type.

C. Prosecution History of the Related '984 Patent

The '984 patent granted from an application that claims priority to a provisional application filed in June 2003. Ex. 1001.

In March 2009, the Office rejected all claims as anticipated by Zalewski, U.S. Patent No. 6,771,981 ("Zalewski"). Ex. 1008, 285. Zalewski disclosed an "an RFID transponder 110" embedded in a removable cover for a phone or other device "such as an MP3 player." Ex. 2001 at 7:63-8:3.

Patent Owner argued against the prior art rejection. Ex. 1008, 275-79. In particular, Patent Owner argued that the claims did "not recite using a transponder," but instead "recite[] instructing a component of a mobile phone to emulate output by a transponder." *Id.* at 276 (emphasis added). Patent Owner's response demonstrated that in Zalewski's mobile station, RFID signal was output directly by the physical RFID transponder embedded in Zalewski's cover:

In Contrast, Zalewski teaches a mobile station 104 comprising both a mobile phone and a disposable/interchangeable cover 100 (col. 9, lines 1-5). The cover 100 includes an attached/embedded RFID transponder 110 (col. 8, lines 1-3, 13-15). An interrogator/reader sends an interrogation signal and the transponder replies by transmitting data codes encoded in the transponder (col. 8, lines 16-21). Electrical signal

coupling occurs between phone and cover via contacts 180 (col. 8, line 8).

In the passages cited in the Office Action, a mobile station 104 sends a reservation request to a central reservation site, which replies by sending a code. The user places the mobile station 104 against the door lock, which includes an interrogator. The interrogator sends an interrogation signal to the cover 100, which responds with the code to unlock the door. See col. 16, lines 36-47. *Id.* at 276 (emphases added).

In these same remarks, Patent Owner distinguished Zalewski on the basis that its RFID transponder does not “emulate” an RFID transponder since it is an RFID transponder:

[W]hile Zalewski teaches using a RFID transponder to output data, claim 1 recites an instruction to a component to output data, ‘emulating an output of the first data by an active RFID transponder.’ Zalewski’s RFID transponder is not a component that emulates an output by an active RFID transponder, being itself an RFID transponder. Thus, the cover/transponder of Zalewski neither emulates an output by an active RFID transponder nor facilitates a user in communication with a user of another communication device over a wireless network.

Second, Zalewski cannot teach ‘in response to said providing an instruction, outputting the first data in the form a radio frequency signal, said outputting emulating output of the first data by an active RFID transponder’ for the same reasons explained above (i.e. no teaching of providing an instruction, transponder responds to interrogator rather

than user instruction, transponder does not ‘emulate’ output by an active RFID transponder).

Id. at 277 (emphases added).

In response to a subsequent rejection, Patent Owner again distinguished Zalewski by arguing that it did not emulate an RFID transponder:

Zalewski does not teach a mobile communication device component that . . . outputs data ‘in the form of a radio frequency signal, said outputting emulating output of the first data by an RFID transponder of an active type.”

Id. at 236 (emphasis added).

III. Brief Summary of the Petition’s Prior Art

A. Willgert

Willgert describes a “communications unit for identifying objects or persons.” Ex.1004 at Abstract. The “communications unit” includes a “receiver/transmitter” operable with a “Bluetooth communications system,” and a “transponder” operable with an “RFID System.” *Id.* Willgert’s “transponder 2 is of a kind known per se.” Ex. 1004 at [0017]. Willgert’s transponder is “adapted to receive a query signal sent from a suitably known communicator, and therewith reflect the received signal while modulating the signal with a pulse train.” *Id.* “Each transponder will typically have a unique identify that is sent to the communicator.” *Id.*

B. Mooney

Mooney relates to communication of a Bluetooth signal between a mobile phone and an external headset. It describes a Bluetooth interface that allows a Bluetooth headset to establish an audio connection to a “conventional wireless phone” that “does not have Bluetooth installed.” Ex. 1005 at Abstract. The Bluetooth protocol involves a “secure pairing process in a piconet” which provides “communications over short distances.” *Id.* at [002], [004].

C. Holloway

Holloway relates to a mobile telephone that incorporates “an RFID (radio frequency identity) chip 16 corresponding to the chips found in RFID smart cards, or combi cards.” Ex. 1006 (4:24-26). A module “comprising an antenna and a chip which is the same as that used in a conventional combi card” is integrated into the mobile telephone. Ex. 1006 (5:6-7). In embodiments where “only telephonic communications are required, the RFID antenna 15 may be omitted, and the information stored in chip 16 may be stored in the memory within the mobile telephone 10.” Ex. 1006 (10:4-6).

“[T]he telephone may incorporate a slot in which it is possible to insert a removable RFID combi card so that pads on the card conductively engage electrical conducts in the slot. The card is thus connected via its pads and internal contacts of the telephone 10 to central processor 11. This arrangement allows an existing RFID

combi card to fully replicate all of the features provided by RFID chip 16 and antenna 17.” Ex. 1006 (10:22-27).

D. Pitroda

Pitroda relates to “a system and methods of serving transactions involving electronic transaction devices, such as universal electronic transaction cards (‘UET Cards’), and conventional plastic credit cards.” Ex. 1007 (1:6-9). “UET Cards are one type of electronic transaction device known to store, transmit, and receive personal, account, and transactional information.” Ex. 1007 (1:13-15). “The UET card may also be capable of processing transaction information and communication with central processing units or computers operated by the providers of services, such as credit card institutions, banks, health care providers, retailers, wholesalers or other providers of goods and services.” Ex. 1007 (1:28-33). Pitroda discloses that “hand held computers may be adapted to be electronic transaction devices with appropriate programming.” Ex. 1007 (1:50-52).

IV. Legal Standards

Petitioner bears the burden to prove invalidity by a preponderance of the evidence. 35 U.S.C. § 316(e).

A claim is obvious when “the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary

skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103. The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when available, objective evidence such as commercial success, long-felt but unsolved needs, and failure of others. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966); see *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007) (“[T]he [*Graham*] factors continue to define the inquiry that controls.”).

V. Level of Ordinary Skill in the Art

In the Institution Decision, the Board adopted the definition of a person of ordinary skill in the art (“POSITA”) proposed by Petitioner’s expert. Per the Institution Decision, a POSITA:

[W]ould have been someone knowledgeable in mobile communication devices and components used therein, cellular radio systems, and wireless communications, such as those used for voice calling and radio frequency identification (RFID). That person would have at least a Bachelor’s degree in Electrical Engineering, with a background in radio frequency communications as well as approximately two years of experience working with or researching radio frequency communication systems. Institution Decision, Paper No. 7 at 11.

For the purpose of this proceeding, Patent Owner disputes the narrow range of educational experiences in the Petition's POSITA definition, but does not otherwise dispute the remaining portion of the definition.

The relevant field of the '974 patent claims is an “emulated radio frequency data input method.” Ex. 1001 (col. 1:19-21). A POSITA at the time of filing of the original application, *i.e.*, June 2003, would have been someone “with at least a Bachelor's degree in Electrical Engineering, Computer Science, or a related field, with a background in radio frequency communications and software development, as well as approximately two years of experience working with or researching radio frequency communication systems. Lack of work experience can be remedied by additional education, and vice versa.” Ex. 2004 at ¶34.² Patent Owner's definition

² The '974 patent is entitled to the priority date of U.S. Provisional App. No. 60/478,245 (“the Provisional Application”) (Ex. 2006) as the drawings of the '974 patent and Provisional Application are identical, and the specification of the '974 Patent and the Provisional Patent are virtually identical. Ex. 2004 at ¶36, n.2. Because Petitioner does not concede the '974 patent is entitled to the claimed Provisional Application's filing date, Patent Owner's expert has opined on the viewpoint of a POSITA as of the Patent's PCT filing date of June 10, 2004. *Id.* at ¶36.

differs from Petitioner's definition in that Petitioner applies a narrow range of educational experiences. Software training and experience would be needed because the patented "mobile communication device" contains "hardware and/or software" and requires "software implementations" of its functions. Ex. 1001, 2:24-26 and 5:19-22; Ex. 2004 at ¶34.

VI. Claim Construction

In an *inter partes* review, claims are construed using the same claim construction standard that would be used to construe claims in a civil action. *See* 37 C.F.R. § 42.100(b) (2020). Claims are construed in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-14 (Fed. Cir. 2005) (en banc). In construing claims, the Board must take into account the specification and prosecution history. *Id.* at 1315-17. If the specification or prosecution history "reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess[,] . . . the inventor's lexicography governs." *Id.* at 1316 (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)).

Except as set forth below, Patent Owner maintains that all claim terms should be given their plain and ordinary meaning as they would have been understood by a POSITA at the time of the invention in light of the specification.

A. **“wireless mobile phone”**

Claim Term	Patent Owner’s Proposed Construction
“wireless mobile phone” (claim 12)	“telephony device equipped to facilitate a user in communicating with another user of another communication device, notwithstanding the user's movement around different geographic areas, so long the wireless mobile phone is in contact with a base/service station of a wireless network service provider. The other user/communication device may be mobile or land line based.”

The '974 patent specification makes clear that a “wireless mobile phone” is “a telephony device equipped to facilitate a user in communicating with another user of another communication device, notwithstanding the user’s movement around different geographic areas, so long as the wireless mobile phone is in contact with a base/services station of a wireless network service provider. The other user/communication device may be mobile or land line based.”

The '974 patent expressly defines “wireless mobile phone”:

The term “wireless mobile phone” **as used herein**, including the specification and the claims, **refers to** the class of telephony devices equipped to facilitate a user in communicating with another user of another communication device, notwithstanding the user's movement around different geographic areas, so long the wireless mobile phone is in contact with a base/service station of a wireless network service provider. The term includes the analog as well as the digital subclasses.

Communication may be voice and/or data, audio, textual and/or visual.

The other user/communication device may be mobile or land line based.

Ex. 1001 (col. 4:11-21) (emphasis added).

As shown, the '974 patent defines “wireless mobile phone” by stating “as used herein” followed by “refers to”—hallmarks that the patentee was providing a lexicographic definition of the term. *Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671, 679 (Fed. Cir. 2015) (“An applicant’s use of the phrase ‘refers to’ generally indicates an intention to define a term.”) (citing *In Re Imes*, 778 F.3d 1250, 1252-53 (Fed. Cir. 2015); *Microsoft Corp. v. Int’l Trade Comm’n*, 731 F.3d 1354, 1360 (Fed. Cir. 2013); *Linear Tech. Corp. v. Int’l Trade Comm’n*, 566 F.3d 1049, 1054 (Fed. Cir. 2009)).

A POSITA reading the claims of the '974 patent in light of the specification would have understood that “wireless mobile phone” means a “telephony device equipped to facilitate a user in communicating with another user of another communication device, notwithstanding the user’s movement around different geographic areas, so long the wireless mobile phone is in contact with a base/service station of a wireless network service provider. The other user/communication device may be mobile or land line based.” Ex. 2004 at ¶43.

In addition, based on the '974 patent’s lexicography of a “wireless mobile phone”:

- A POSITA would have understood that a “wireless mobile phone” requires communication through a base/service station of a wireless network service provider Ex. 2004 at ¶44.
- A POSITA would have understood that a “wireless mobile phone” transmits and receives its telephony signals over a network of a wireless network service provider. Ex. 2004 at ¶47.
- In situations where the other user’s device is mobile, a POSITA would have understood that telephony signals would transmitted over the network of a wireless network service provider. Ex. 2004 at ¶45.
- Where the other user device is land line based, a POSITA would have understood that telephony signals are transmitted in part over the network of a wireless network service provider. Ex. 2004 at ¶45.

B. “voice call signal[s]”

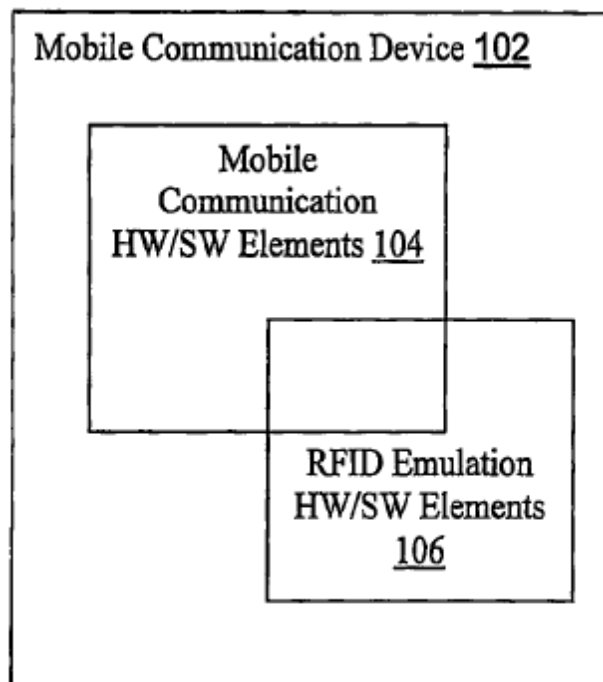
Claim Term	Patent Owner’s Proposed Construction
“voice call signal[s]” (claims 1, 8, 12)	“transmit and receive signal[s] of a voice call over a network of a wireless network service provider”

“Voice call signal[s]” should be construed to mean the “transmit and receive signals of a voice call over a network of a wireless network service provider.”

The ’974 patent specification teaches a “wireless mobile phone” that can perform telephony and emulate an RFID transponder. The “primary communication

function” of the device is to transmit and receive “signals of a voice call,” which “facilitate a user in communicating with another user of another communication device.” Ex. 1001 at 7:14-17, 3:53-55. A POSITA would have understood from the teachings of the ’974 patent and the express definition of “wireless mobile phone” that “voice call signals” are the type of signals capable of carrying a voice call from one user to the user of another device over the network of a wireless network service provider. Ex. 2004 at ¶46.

This is underscored by the disclosure of Figure 1 of the ’974 patent.



Ex. 1001, Fig. 1. As described in the specification, “blocks 104 and 106 ‘intersect’ with one another . . . represent[ing] the fact that in preferred embodiments of the present invention, substantial portions of the hardware and/or software elements

employed to provide a RFID, are the same elements employed to facilitate the primary function of the device 102, i.e. to facilitate a user in communicating with another user of another communication device.” *Id.* at 3:48-55.

Patent Owner’s construction is confirmed by the claims. Each of the independent claims of the ’974 patent require a mobile communication device that outputs/transmits “voice call signal[s].” The ’974 patent consistently uses the term “voice call signal[s]” in the sense of a voice phone call between two parties—a user of a mobile communication device and another user of another communication device (*e.g.*, another mobile phone or a land line phone). A POSITA would have understood that “voice call signal[s],” are the signals that carry a voice call from one user to the user of another device. Ex. 2004 at ¶46.

Patent Owner’s construction is also confirmed by the prosecution history of the related ’984 patent. In March 2011, the Office rejected the pending claims of the ’984 patent as obvious over US2002/0123325 (“Cooper”). Ex. 1008 at 65-70. Cooper disclosed “using a Bluetooth-equipped headset to transmit voice data to a telephone terminal.” *Id.* at 38. Patent Owner distinguished the claims from Cooper for a number of reasons, including that Cooper’s disclosure of Bluetooth headset “circuitry to achieve transmission of ... voice data,” did not teach the required “output voice call signals” limitations of the claims. *Id.* at 39.

Petitioner's expert posits that "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." Ex. 1003, ¶75. The expert declaration proceeds to refer to these as "Bluetooth voice communications" and "Bluetooth voice communication signal[s]." *Id.*, ¶¶ 99, 162, 172. However, despite these attempts to match the Bluetooth signals that carry voice data in Willgert-Mooney to the recited "voice call signal[s]," the declaration makes clear that Bluetooth signals are distinct from "voice call signal[s]." *See id.*, ¶187 ("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 mobile telephone").

The Petition's attempt to read "voice call signals" on a Bluetooth headset signal suffers the same defect as Cooper. A POSITA would have understood that a Bluetooth communication signal is not a "voice call signal." Ex. 2004 at ¶58. A POSITA would have understood that a Bluetooth communication signal is carried over a Personal Area Network (PAN). Ex. 2004 at ¶59; *see* Ex. 1013 at 21-22 ("Bluetooth is a low cost, low power, short range radio technology originally developed as a cable replacement to connect devices such as mobile phones, headsets, PDA's and portable computers. By enabling a standard way for these accessories to communicate, Bluetooth has created the expression Personal Area

Network (PAN). PAN is a close range network that connects your personal electronic equipment.”). A POSITA would have understood that a Bluetooth communication signal is not carried over the network of a wireless network service provider to call a user of another communications device. Ex. 2004 at ¶59. Bluetooth signals are not communicated to another user at all; rather they are carried between the mobile handset itself and a headset.

Accordingly, a POSITA would have understood that “voice call signals” are the “transmit and receive signals of a voice call over a network of a wireless network service provider.” Ex. 2004 at ¶47.

C. The “RFID transponder signal” limitations

Claim Term	Patent Owner’s Proposed Construction
“RFID transponder signal[s]” (claims 1, 12)	“RFID signal[s] emulated by a mobile communications device without the use of a physical RFID transponder”
“RFID transponder data as a radio frequency signal” (claim 8)	“RFID transponder data as a radio frequency signal emulated by a mobile communications device without the use of a physical RFID transponder”
“second RFID transponder data as a second radio frequency signal” (claim 6)	“second RFID transponder data as a second radio frequency signal emulated by a mobile communications device without the use of a physical RFID transponder”

The RFID transponder signal terms should be construed to require emulation. “RFID transponder signal[s]” should mean: “RFID signal[s] emulated by a mobile communications device without the use of a physical RFID transponder.” “RFID transponder data as a radio frequency signal” should mean: “RFID transponder data as a radio frequency signal emulated by a mobile communications device without the use of a physical RFID transponder.” “[S]econd RFID transponder data as a second radio frequency signal” should mean: “second RFID transponder data as a second radio frequency signal emulated by a mobile communications device without the use of a physical RFID transponder.”

The '974 patent is directed to a mobile communication device “equipped with hardware and/or software components to enable the device to output a data in a form of a radio frequency signal, emulating outputting of the data by either an active or a passive RFID transponder.” Ex. 1001 (abstract). The '974 patent discloses a mobile communication device equipped “to provide a RFID, emulating a RFID transponder, as well as facilitating user communication.” Ex. 1001 (col. 3:59-61). The “RFID 110 may be any keys and/or identifiers, including but not limited to security keys, such as garage door ‘keys’, exterior or interior door keys, or identifiers, such as, employee numbers, driver’s license numbers, social security numbers, credit card numbers (optionally, including expiration dates), affinity program member identifiers, and so forth.” Ex. 1001 (col. 3:66-4:4). The mobile communications device includes “RFID

Emulation HW/SW Elements 106.” *See* Ex 1001, FIG. 1. All disclosed embodiments emulate an RFID transponder signal without a physical RFID transponder.

A POSITA reading the claims of the ’974 patent in light of the teachings and disclosures in the specification would have understood that the purpose of the invention is to emulate one or more RFID transponders within a mobile communication device, without the need for an actual physical transponder. Ex. 2004 at ¶49. A POSITA would have understood that none of the Challenged Claims read on or otherwise requires a physical RFID transponder that outputs a radio frequency signal. Ex. 2004 at ¶51.

The ’974 patent discloses that “the present invention is related to an emulated radio frequency data input method” that “advantageously improved the ease of use for a user to provide data captured in a device to another system, especially for data captured in e.g. a mobile device.” Ex. 1001 (col. 1:19-21, col. 9:12-15) (emphasis added). The patent defines the “present invention” as including an emulated radio frequency feature—a hallmark that Patent Owner implicitly disavowed embodiments that do not include such a radio frequency emulation feature. *See On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1340 (Fed. Cir. 2006) (“[W]hen the scope of the invention is clearly stated in the specification, and is described as the advantage and distinction of the invention, it is not necessary to disavow explicitly a different scope.”); *Poly-Am., L.P. v. API Indus., Inc.*, 839 F.3d

1131, 1136 (Fed. Cir. 2016) (“[A]n inventor may [also] disavow claims lacking a particular feature when the specification describes ‘the present invention’ as having that feature.”)

The claim language confirms Patent Owner’s construction. To start, claim 6 expressly claims “emulating.”

In particular, claim 6 recites a device that outputs “second RFID transponder data as a radio frequency signal,” the “outputting emulating output of the second RFID transponder data by an RFID transponder of a passive type.” Notably, claim 6 does not recite or require a physical RFID transponder, but instead specifies a radio frequency signal emulated by a device. Ex. 2004 at ¶¶51-54. A POSITA would have understood that claim 6 claims a radio frequency signal emulated by a mobile communication device, without a physical RFID transponder because the language of the language of the claim reaffirms that even a second signal is also emulated. Ex. 2004 at ¶52. In particular, a POSITA would have understood that “second RFID transponder data as a second radio frequency signal” in claim 6 is an RFID signal emulated by a mobile communications device without a physical transponder. *Id.*

Like claim 6, independent claim 8 recites a device that outputs “RFID transponder data as a radio frequency signal.” The phrase “RFID transponder data as a radio frequency signal” should be construed consistently with its usage in claim 9 (“second RFID transponder data as a second radio frequency signal”) to require

an emulated RFID signal. *See Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001) (“[A] claim term should be construed consistently with its appearance in other places in the same claim or in the other claims of the same patent.”); *Phillips*, 415 F.3d at 1314 (“Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.”). A POSITA would have understood that “RFID transponder data as a radio frequency signal” is an RFID signal emulated by a mobile communications device without a physical transponder. Ex. 2004 at ¶53.

Like claims 6 and 8, claims 1 and 12 recite a device that outputs “RFID transponder signal[s].” The term “RFID transponder signal[s]” should be construed consistently with its usage in claims 6 (“second RFID transponder data as a second radio frequency signal”) and claim 8 (“RFID transponder data as a radio frequency signal”) to require an emulated RFID signal. *See Rexnord*, 274 F.3d at 1342; *Phillips*, 415 F.3d at 1314. A POSITA would have understood that “RFID transponder signal[s]” means RFID signal[s] emulated by a mobile communications device without a physical transponder. Ex. 2004 at ¶54.

The ’984 patent prosecution history confirms Patent Owner’s construction. During prosecution, Patent Owner repeatedly and consistently distinguished Zalewski by arguing that it did not disclose an RFID signal emulated by a device

because it relied on a physical RFID transponder. Patent Owner argued Zalewski does not teach outputting data “in the form of a radio frequency signal, said outputting emulating output by the first data by an RFID transponder of an active type.” Ex. 1008 at 236. Patent Owner argued “Zalewski’s RFID transponder is not a component that emulates an output by an active RFID transponder, being itself an RFID transponder.” *Id.* at 277.

VII. Comment on the Petition’s Ground 1B Constructions

The Board should reject the Petition’s proposed Ground 1B claim constructions.

In Ground 1B, the Petition purports to “appl[y] the prior art based on Varia’s interpretations in the Litigation.”³ Pet. at 10. However, this is incorrect. The Petition mischaracterizes Patent Owner’s positions in the Litigation.⁴ In particular, the Petition mischaracterizes positions for the terms “switchable mobile communications device,” “switching a transceiver/transmitter,” and “state,” as explained further below. Regardless of discrepancies with any Litigation positions,

³ The “Litigation” is *Varia Holdings LLC v. Apple Inc.*, No. 23-cv-7477 (E.D.N.Y.).

⁴ Patent Owner expressly disagrees with the Petition’s characterizations of its Litigation positions. The constructions that the Petition applies in Ground 1B do not track or apply Varia’s Litigation arguments.

the Board should not apply the constructions the Petition seeks to advance in Ground 1B. The Petition's Ground 1B proposed constructions would inject ambiguity into the determination of claim scope and are not necessary to resolve the instant dispute. *Vivid Techs., Inc. v. Am. Sci. & Eng.'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("only those terms need [to] be construed that are in controversy, and only to the extent necessary to resolve the controversy.").

The Petition attempts to argue that its Ground 1B interpretations of "switching a transceiver/transmitter" arise from Patent Owner's Litigation Positions. *See* Pet. at 62 ("Varia interprets switching and state in the context of the transceiver configuration recited in [1.2].") (emphasis added). That is incorrect. The Petition conflates the terms "switchable mobile communications device" and "switching a transceiver/transmitter," and treats them as though they were identical. Pet. at 62-67. They are not.⁵ For example, the Petition cites deposition testimony concerning the term "switchable mobile communications device" to try and inform the meaning of the separate, distinct terms "switching a transceiver/transmitter," and "state." *See*

⁵ Only one independent Challenged Claim requires "switching a transceiver" (claim 1), and only one independent Challenged Claim requires "to switch" "the transmitter" (claim 12), but all Challenged Claims recite a "switchable mobile communication device" (in their preamble).

Pet. at 63, 66 (citing Litigation deposition testimony in EX. 1055 concerning the meaning of “switchable mobile communications device” to attempt to broaden the constructions of the distinct terms “transceiver” and “state”). While it is not necessary to construe these terms here to resolve the issues raised by the Petition, to the extent the terms are construed, they should not be construed identically.

VIII. The Petition Fails to Demonstrate Unpatentability of the Challenged Claims

The Petition advances three grounds of invalidity, as follows:

Ground	Reference(s)	Basis	Claim(s) Challenged
1A	Willgert, Mooney	§ 103	1-3, 5-9, 11-13, and 16-19
1B	Willgert	§ 103	1, 3, 5-9, and 11
2	Willgert, Mooney, Holloway, Pitroda	§ 103	3-6, 10, 11, and 13-17

The Board should reject all three Grounds.

A. Ground 1A: Willgert and Mooney Fail to Teach or Suggest Required Elements

1. No teaching or suggestion of “voice call signal[s]”

All Challenged Claims require a “voice call signal[s]” carried over the network of a wireless network service provider. Ex. 2004 at ¶56. The Willgert-Mooney combination fails to teach or suggest such signals. *Id.*

The Petition maps “voice call signal[s]” to the Bluetooth communication signals transmitted between Willgert’s phone and a Bluetooth headset paired to that same phone. Pet. at 25 (“the Bluetooth voice communication would have enabled the Bluetooth headset to ‘hear voice and/or tones’ generated from the telephone”). For the reasons explained below, the Petition’s argument fails because Bluetooth does not carry “voice call signal[s],” as properly construed. Ex. 2004 at ¶55.

First, to the extent that Willgert-Mooney’s Bluetooth communication signal is considered to be carried over a network, it is simply not carried over the right type of network. Willgert-Mooney’s Bluetooth communication signal is carried over a short-range Personal Area Network (PAN), not a network of a wireless network service provider. Ex. 2004 at ¶¶58-59. A POSITA would have recognized that a Bluetooth communication signal, such as the one disclosed in Willgert/Mooney, is not a “voice call signal” because it is not carried over the network of a wireless network service provider. Ex. 2004 at ¶58.

Second, Willgert-Mooney's Bluetooth communication signal does not enable the "primary communication function of the device," which is to transmit and receive the "signals of a voice call" to another user of another communication device. Ex. 2004 at ¶62. A POSITA would have recognized that a Bluetooth signal between a user's headset and the same user's device is not capable of making or initiating a voice call to another user of another communication device. Ex. 2004 at ¶61. A POSITA would have understood that the "voice call signals" carried over the network of a wireless network service provider to call another user are separate and distinct from the Bluetooth signals used to hear voice or tones generated separately from the phone. Ex. 2004 at ¶63.

These points do not appear to be in dispute. The Petition acknowledges that "Bluetooth signals" are distinct from "voice call signals." *See* Pet. at 63 (distinguishing "Bluetooth" signals from "voice call[]" signals). Ex. 2004 at ¶57. The Petition, in effect, also acknowledges that Willgert-Mooney's Bluetooth signal is not carried between two users (i.e., a calling party initiating a call, and the called party that receives the call), but instead enables a single user to establish an audio connection between the user's device and the user's own headset. Pet at 15-16 ("Bluetooth headset . . . enables a user of the telephone to . . . have provided an audio connection to . . . 'hear voice and/or tones.'"). And during his deposition, Petitioner's expert Dr. Ding confirmed that the Willgert mobile phone is not

“primarily” used for Bluetooth communication. (“Q. Is Bluetooth the primary communication function of the Willgert device? A. So . . . you have a mobile phone, which is not primarily a Bluetooth communication. We could use other means to communicate.”) (Ex. 2008 at 33:2-14).

The Petition’s argument that “voice call signal[s]” should include Bluetooth because a Bluetooth headset hears “voice and/or tones” from the phone is simply not correct. Dr. Ding, on his part, was unable to provide any definitive answer as to whether his understanding of the term “voice call signal[s]” includes using a Bluetooth headset to listen to a pre-recorded voicemail message from the phone. Ex. 2008 at 44:15-47:21. Dr. Ding conceded he did not “spend time trying to look into the file history during the prosecution of this patent to see whether or not the applicant understood that their voice call includes such a signal or not.” *Id.* at 47:2-8.

But in fact, the issue of whether Bluetooth headset signals are “voice call signal[s]” arose during prosecution of the related ’984 patent, and was resolved in Patent Owner’s favor. Ex. 2004 at ¶64. The Office had rejected the pending claims as obvious over US2002/0123325 (“Cooper”) (EX2007). Ex. 1008 at 65-70. Cooper disclosed using Bluetooth headsets paired to a “desktop or mobile telephone terminal,” in order to “engage in one end of a telephone conversation.” EX2007 at [0025]. Applicants overcame the reference successfully by pointing out that Cooper

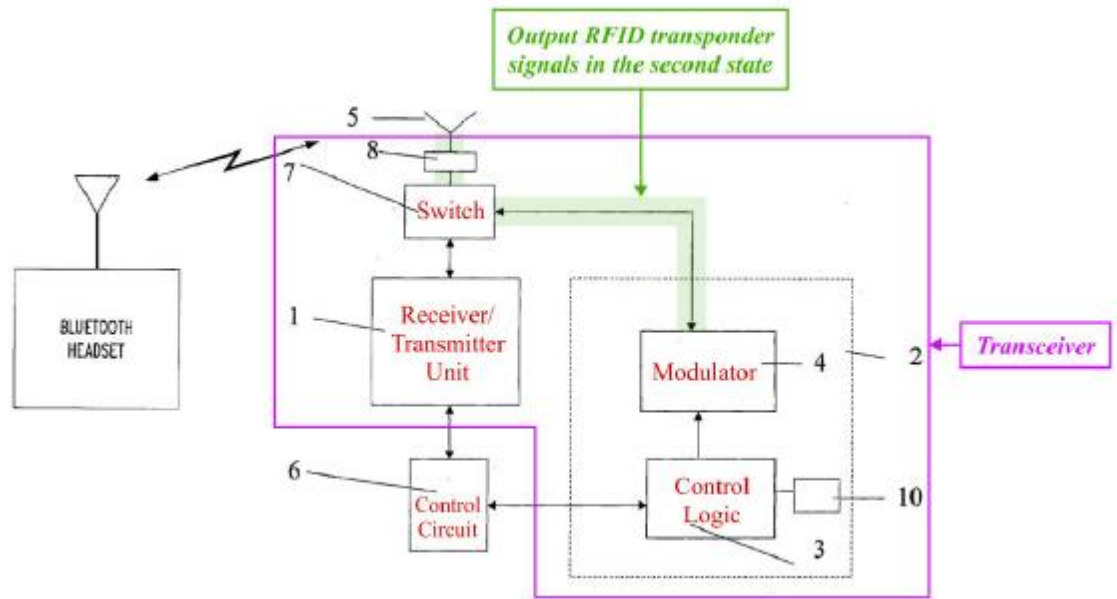
“teaches using a Bluetooth-equipped headset to transmit voice data to a telephone terminal,” and does not teach “output[ting] voice call signals.” EX1008 at 38-39.

The Petition is directly contrary to the distinction made in the prosecution history and has failed to show that the Willgert-Mooney combination teaches or suggests “voice call signals” as required by the claims. For this reason alone, the Petition has failed to carry its burden of demonstrating that the relied on references meet the limitations of all Challenged Claims.

2. No teaching or suggestion of an emulated RFID signal, as claimed

All Challenged Claims require “RFID signals emulated by a mobile communications device without the use of a physical RFID transponder.” Ex. 2004 at ¶66. Willgert, alone or with Mooney, fails to teach or suggest RFID signals emulated by a mobile communication device without the use of a physical RFID transponder. Ex. 2004 at ¶66.

The Petition’s mappings are illustrated below:



Pet. at 27.

The Petition maps all RFID transponder signals/data to the RFID signal output by a physical RFID transponder—Willgert’s RFID transponder 2. *See* Pet. at 36-41 (mapping “second RFID transponder data as a second radio frequency signal” to Willgert’s RFID transponder 2); Pet. at 26 (mapping “RFID transponder signals” to Willgert’s RFID transponder 2); Pet. at 48 (mapping “RFID transponder data as a radio frequency signal” to Willgert’s RFID transponder 2).

The Petition tries to mask the prior art’s deficiencies by incorrectly asserting that an RFID output from a *physical RFID transponder* is an emulated RFID signal. That argument fails. A POSITA would have understood that Willgert, alone or in combination with Mooney, has no ability to emulate an RFID signal, because its

device outputs RFID signals exclusively from RFID transponder 2, a physical transponder. Ex. 2004 at ¶69.

The Petition does little to address that Challenged Claim 6 expressly requires “emulating.” The Petition argues that RFID transponder 2 outputting its RFID signal discloses “emulating.” *See*, Pet. at 41 (“a POSITA would have understood and found it obvious that the *outputting* of identity information by the Willgert-Mooney phone *emulate[s] output of the second RFID transponder data* by the RFID transponder 2.”). The Petition is incorrect. A POSITA would have understood that “emulating” requires “RFID signals emulated by a mobile communications device without the use of a physical RFID transponder,” and thus, Willgert’s physical RFID transponder 2 would not meet those requirements. Ex. 2004 at ¶¶66, 69.

Willgert suffers the same defect as Zalewski as applied against the related ’984 patent during its prosecution. Patent Owner repeatedly and consistently distinguished Zalewski by arguing that it did not disclose an RFID signal emulated by a mobile device because it relied on a physical RFID transponder outputting its signal. Patent Owner argued Zalewski does not teach outputting data “in the form of a radio frequency signal, said outputting emulating output by the first data by an RFID transponder of an active type.” Ex. 1008 at 236. Patent Owner also argued that “Zalewski’s RFID transponder is not a component that emulates an output by an active RFID transponder, being itself an RFID transponder.” Ex. 1008 at 277. A

POSITA would have understood from the '984 patent prosecution history that applicants overcame Zalewski by pointing out that Zalewski outputs RFID signals using a physical RFID transponder, and does not perform emulation. Ex. 2004 at ¶72.

In the Institution Decision, on the preliminary record, the Board concluded:

Zalewski was *not* distinguished based on whether or not the RFID transponder was emulated. Institution Decision, Paper No. 7 at 22.

Patent Owner respectfully disagrees. As demonstrated above, Patent Owner expressly argued that “Zalewski’s RFID transponder is not a component that emulates an output by an active RFID transponder, being itself an RFID transponder.” Ex. 1008 at 277.

The Petition has failed to show that Willgert, alone or with Mooney, teaches or suggests “RFID signals emulated by a mobile communications device without the use of a physical RFID transponder” as required by all Challenged Claims. For this reason alone, the Petition has failed to carry its burden of demonstrating that the relied on references meet the limitations of all Challenged Claims.

3. No teaching or suggestion of a “instruction[s]” to switch, as claimed

Challenged Claim 2 requires a “second signal processing unit configured to process RFID signals” and “coupling the second signal processing unit to a

transmission path of the transceiver.” A POSITA would have understood that the processing involves RFID signals transmitted by the device that are emulated because the device does not possess a physical RFID transponder. Ex. 2004 at ¶73. Challenged Claims 12-13, and 16-19, expressly or by dependency, each require a “second signal processing section configured to output RFID transponder signals.” As described above in Section VI.C, “RFID transponder signal[s]” are RFID signal[s] emulated by a mobile communications device. Accordingly, Challenged Claim 2, as properly construed, requires a second signal processing unit configured to output emulated RFID signals, and Challenged Claims 12-13, and 16-19 as construed, requires a second signal processing section configured to output emulated RFID signals.

A POSITA would have understood that Willgert, alone or in combination with Mooney, has no ability to emulate an RFID signal, and thus no ability to output emulated RFID signals. Ex. 2004 at ¶78. A POSITA would have understood that because Willgert and Mooney, alone or in combination, fail to teach or suggest emulating an RFID signal, they also fail to teach or suggest a second signal processing unit/section configured to output emulated RFID signals. Ex. 2004 at ¶78.

Challenged Claims 1-3 and 5-7, expressly or by dependency, each require “switching a transceiver . . . the transceiver configured to output voice call signals in the first state and to output RFID transponder signals in the second state.”

Challenged Claims 1-3 and 5-7, as properly construed, requires switching a transceiver from a voice call signal state to a state in which an emulated RFID signal is output. A POSITA would have understood that because Willgert and Mooney, alone or in combination, fail to teach or suggest emulating an RFID signal, they also fail to teach or suggest a transceiver configured to output an emulated RFID signal, or switching a transceiver to an state in which it outputs an emulated RFID signal. Ex. 2004 at ¶78.

Challenged Claims 12-13, and 16-19, expressly or by dependency, each require “a transmitter configured to output voice call signals and ... output RFID transponder signals....” Challenged Claims 12-13 and 16-19, as properly construed, require a transmitter configured to transmit a voice call signal and transmit an emulated RFID signal, without the use of a physical transponder. A POSITA would have understood that because Willgert and Mooney, alone or in combination, fail to teach or suggest emulating an RFID signal, they also fail to teach or suggest a transmitter configured to transmit an emulated RFID signal. Ex. 2004 at ¶78.

Challenged Claims 1-3 and 5-7, expressly or by dependency, require an “instruction to transmit first RFID transponder data,” “switching a transceiver of the mobile communications device from a first state to a second state,” “and to output RFID transponder signals in the second state.” Challenged Claim 12-13, and 16-19 each require, expressly or by dependency, “instructions to . . . operate the transmitter

to switch between” the first and second signal processing sections. As described above and herein, Challenged Claims 1-3, 5-7, 12-13, and 16-19, as properly construed, require “instruction[s]” to switch a transceiver/transmitter to the second state/section to transmit an emulated RFID signal. A POSITA would have understood that because Willgert and Mooney, alone or in combination, fail to teach or suggest emulating an RFID signal, they also fail to teach or suggest the claimed “second state,” the claimed “second signal processing section,” and the claimed switching and “instruction[s]” to transmit an emulated RFID signal. Ex. 2004 at ¶78.

The Petition has failed to carry its burden of demonstrating that Willgert, alone or in combination with Mooney, meets all the limitations of Challenged Claims 1-3, 5-7, 12-13, and 16-19.

4. No teaching or suggestion of selection, as claimed

Challenged Claim 3 requires outputting the first RFID transponder data as an RFID transponder signal where the “first RFID transponder data comprises a selected one of a security key and an identifier.” Challenged Claims 12-13 and 16-19 each require, expressly or by dependency, “to selectively” “output first RFID transponder data as said RFID transponder signals.” Challenged Claim 13 requires outputting “first RFID transponder data as said RFID transponder signals ” where the “first RFID transponder data comprises a selected one of a security key and an identifier.” As described in Section VI.C above, RFID transponder signal[s] mean

“RFID signal[s] emulated by a mobile communications device without the use of a physical RFID transponder.”

As properly construed, Challenged Claims 3, 12-13, and 16- emulated RFID signals without the use of a physical transponder. A POSITA would have understood that Willgert, alone or in combination with Mooney, fails to disclose a device that emulates an RFID signal. Ex. 2004 at ¶81. In addition, a POSITA would have understood that Willgert, alone or in combination with Mooney, fails to disclose a device that selectively emulates an RFID signal. *Id.* A POSITA would have understood that Willgert, alone or in combination with Mooney, does not disclose any selection to make the device send an emulated RFID signal without the physical presence of a transponder. Ex. 2004 at ¶82.

The Petition has failed to show that Willgert, alone or in combination with Mooney, teaches or suggests the selected output of RFID transponder data as an RFID signal, as claimed. For this reason, the Petition has failed to carry its burden of demonstrating that Willgert, alone or in combination with Mooney, meets all the limitations of Challenged Claims 3, 12-13, and 16-19.

B. Ground 1B: Willgert Fails to Teach or Suggest Required Claim Elements

The Board should reject Ground 1B. In Ground 1B, the Petition mischaracterizes Litigation positions regarding the terms “switchable mobile

communications device,” “switching a transceiver/transmitter,” and “state.” As explained above in Section VII, the Petition’s Ground 1B proposed constructions would inject ambiguity into the determination of claim scope and are not necessary to resolve the instant dispute. Even if the Board were to adopt the Ground 1B constructions—which it should not—the Petition would still fail to carry its burden of demonstrating that Willgert meets all limitations of the Challenged Claims. Willgert simply does not disclose or suggest emulation of RFID signals, as required by all Challenged Claims. Gound 1B must fail.

1. No teaching or suggestion of an emulated RFID signal, as claimed

All Challenged claims require “RFID signals emulated by a mobile communications device without the use of a physical RFID transponder.” Ex. 2004 at ¶66. Patent Owner incorporates herein by reference its arguments in Section VIII.A.2. Because Willgert, alone or with Mooney, fails to teach or suggest RFID signals emulated by a mobile communication device without the use of a physical RFID transponder, then Willgert alone fails to do so. For this reason alone, the Petition has failed to carry its burden of demonstrating that Willgert meets the limitations of all Challenged Claims.

2. No teaching or suggestion of “instruction” to switch, as claimed

Challenged Claims 1, 3, and 5-7 each require as “instruction to transmit first RFID transponder data,” “switching a transceiver of the mobile communications device from a first state to a second state,” “and to output RFID transponder signals in the second state.” Patent Owner incorporates herein by reference its arguments in Section VIII.A.3. Because Willgert, alone or in combination with Mooney, fail to disclose the claimed “second state,” the claimed switching, and the claimed “instruction,” then Willgert alone fails to do so. For this reason, the Petition has failed to carry its burden of demonstrating that Willgert meets the limitations of Challenged Claims 1, 3 and 5-7.

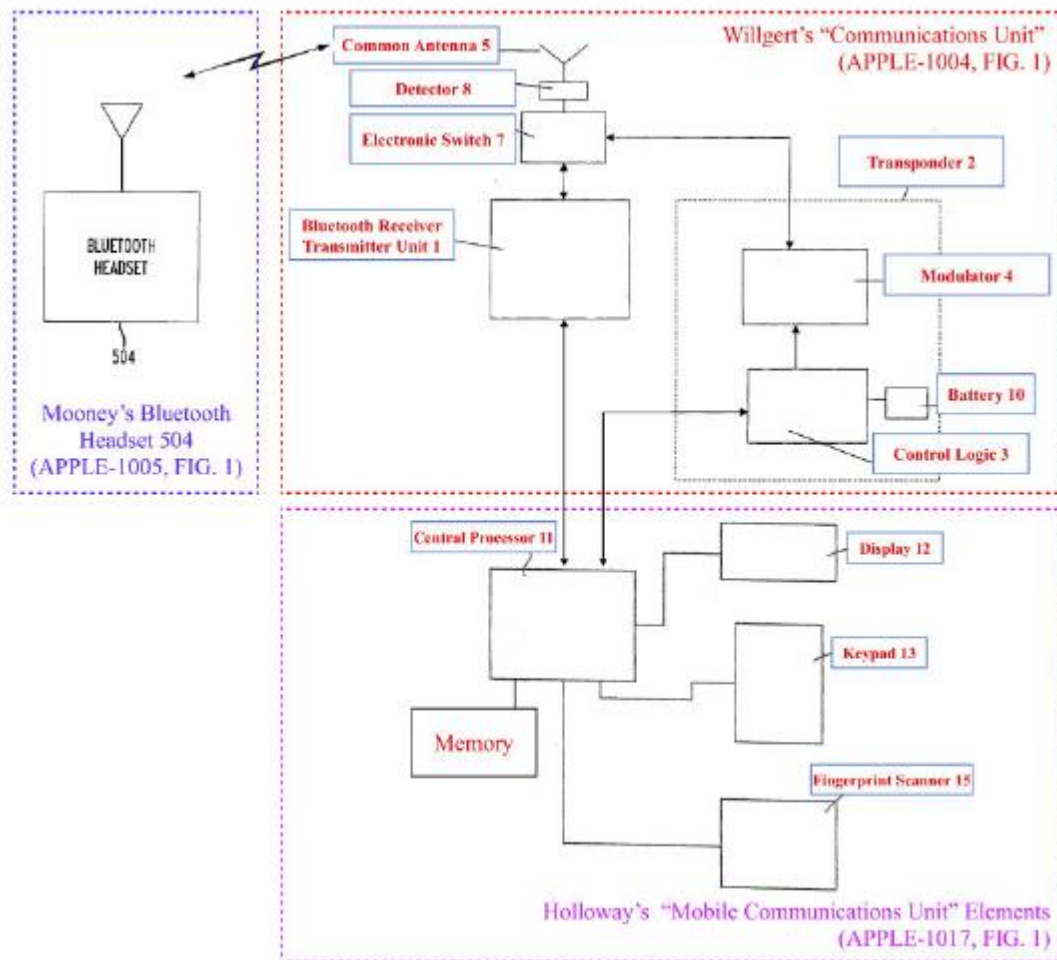
3. No teaching or suggestion of selection, as claimed

Challenged Claim 3 requires selection of transponder data to be transmitted by an emulated RFID signal. Patent Owner incorporates by reference its arguments in Section VIII.A.4. Because Willgert, alone or in combination with Mooney, does not teach or suggest selective output of RFID transponder data as an RFID signal, then Willgert alone fails to do so. For this reason, the Petition has failed to carry its burden of demonstrating that Willgert meets the limitations of Challenged Claim 3.

C. Ground 2: Willgert, Mooney, Holloway, and Pitroda Fail to Teach or Suggest Required Claim Elements

The Board should reject Ground 2. In Ground 2, the Petition attempts to mask the prior art's deficiencies by combining no less than four prior art references in attempt to challenge the '974 patent claims. But none of the Petition's four prior art references teach or suggest "RFID signals emulated by a mobile communications device without the use of a physical RFID transponder." as required by all Challenged Claims. Holloway discloses RFID communication, but all RFID transmission and reception is by means of RFID chips, i.e., physical transponders. Pitroda does not mention RFID at all. Therefore, Holloway and Pitroda do not remedy any of the deficiencies of Willgert and Mooney with respect to emulated RFID transponder signals. Ex. 2004 at ¶86.

The Petition's mappings to the Willger-Mooney-Holloway-Pitroda device are illustrated below:



Pet. at. 73.

As illustrated above, the Willgert-Mooney-Holloway-Pitroda combination relies upon Willgert's RFID transponder 2 to output RFID. This is made clear by both by the mapping above, as well as the Petition's arguments that: "Holloway and Pitroda further enable Willgert's transponder;" and "a POSITA would have implemented the Willgert-Mooney-Holloway-Pitroda phone to incorporate an improved RFID transponder;" and "the Willgert-Mooney-Holloway-Pitroda

telephone is configured to output, via an RFID transponder, identification information.” Pet. at 72, 76 (emphasis added).

Accordingly, the Petition makes clear that Ground 2 relies upon a physical RFID transponder, and not emulation. A POSITA would have understood that a physical RFID transponder outputting its signal, such as Willgert’s physical RFID transponder 2, does not teach or suggest emulating the output of an RFID transponder without a physical transponder, as required by all Challenged Claims. Ex. 2004 at ¶¶66, 69. Accordingly, Ground 2 must fail.

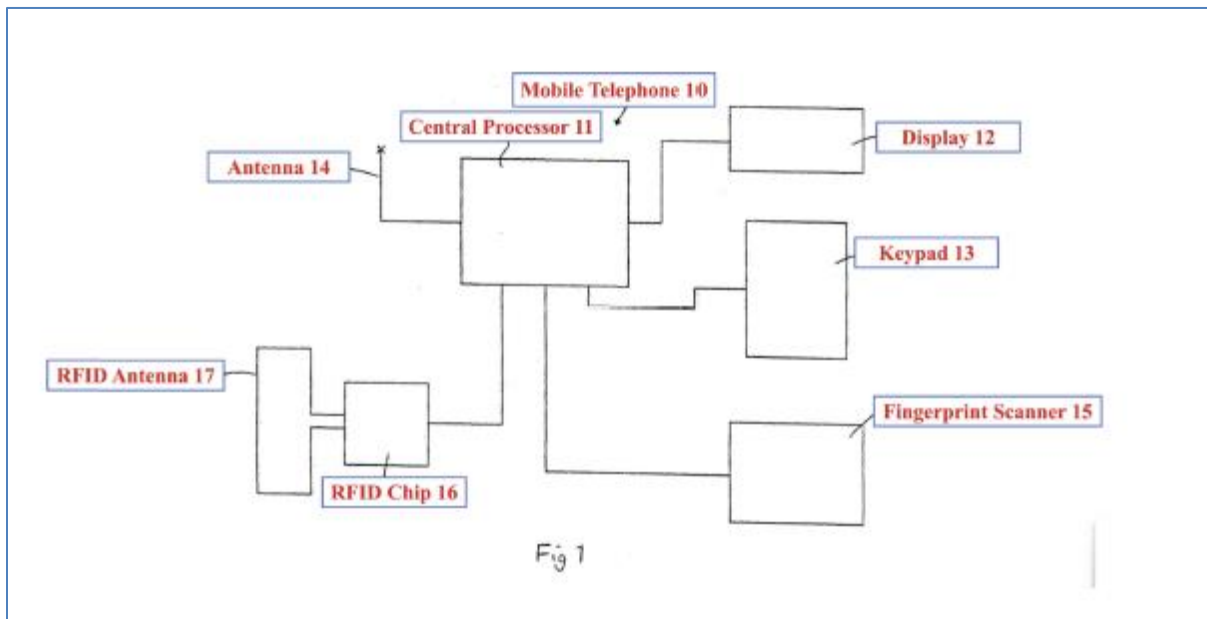
1. No teaching or suggestion of an emulated RFID signal, as claimed

All Challenged claims require “RFID signals emulated by a mobile communications device without the use of a physical RFID transponder.” But neither Willgert, Mooney, Holloway, or Pitroda, alone or in combination, teach or suggest RFID emulation as required by all Challenged Claims. Ex. 2004 at ¶86. Patent Owner incorporates here by reference its arguments from Section VIII.A.2 which explain that Willgert, alone or with Mooney, fails to teach or suggest RFID signals emulated by a mobile communication device without the use of a physical RFID transponder, as required by all Challenged Claims.

Holloway is directed to a mobile telephone that includes “an antenna and a chip which is the same as that used in a conventional combi card.” Ex. 1006 at 5:7.

Holloway makes clear that this chip is “an RFID (radio frequency identity) chip 16 corresponding to the chips found in RFID smart cards, or combi cards.” *Id.* at 4:24-

28. The Petition illustrates Holloway’s telephone with Petitioner annotations:



Pet. at 60.

A POSITA would have understood that Holloway’s embodiments depend on a physical transponder and Holloway does not teach or suggest any RFID emulation.

Ex. 2004 at ¶86.

For example, Holloway discloses:

Another version of the telephone may incorporate a slot in which it is possible to insert a removable RFID combi card so that pads on the card conductively engage electrical conducts in the slot. The card is thus connected via its pads and the internal contacts of the telephone 10 to central processor 11. This arrangement

allows an existing RFID combi card fully to replicate all of the features provided by RFID chip 16 and antenna 17.

Ex. 1006 at 10:22-27 (emphasis added). A POSITA would have understood that Holloway does not teach or suggest RFID signals emulated by a mobile communications device without the use of a physical RFID transponder. Ex. 2004 at ¶86. A POSITA would have understood that Holloway's RFID chip 16 would need to be replaced to output a different RFID signal. Ex. 2004 at ¶90.

The Petition takes many statements from Holloway out of context to try and mask that Holloway does not teach or suggest emulation. As an initial matter, Holloway's RFID signaling capability is optional:

If only telephonic communications are required, *the RFID antenna 15 may be omitted*, and the *information stored in chip 16 may instead be stored in the memory* within the mobile telephone 10. Ex. 1006 at 10:4-6.

Holloway discloses embodiments of "telephonic" credit card transaction that do not rely in any way upon the RFID antenna or chip:

The user may also effect credit/debit processes *completely telephonically*, e.g. ordering and paying for theatre tickets from his home. Normal telephonic communication with the theatre is established, the transaction is arranged verbally or otherwise, *the credit or debit card number is given, preferably automatically by the mobile telephone*, and the transaction is confirmed by the user

placing his finger on scanner 15, which supplies appropriate data signals to antenna 14 and thence to the theatre to approve and confirm the transaction. In this type of activity, *the RFID antenna is not required. Id.* at 7:6-12.

Holloway further discloses that for telephonic embodiments, the memory of the phone may be sub-divided to store information for different cards:

The memory within the telephone 10 maybe sub-divided into a number of mutually secure areas partitioned by firewalls. This makes it possible to allocate service providers with individual areas for their particular application. As a consequence it becomes possible to incorporate the functionality of a number of different cards within the one mobile telephone. *Id.* at 11:11-18.

The Petition conflates the telephone and RFID capabilities of Holloway's phone. *See* Pet. at 77 (arguing that Holloway "describes . . . supporting RFID smart card-based financial transactions" that are allegedly "consistent with Holloway's description of a telephone 'incorporat[ing] the functionality of a number of different cards' within "one mobile telephone.'").

Contrary to the Petition's argument, there is simply no disclosure in Holloway of selecting one or more RFID smart cards to be used in a financial transaction via the RFID signaling functionality of the telephone. Holloway's embodiments that rely on the RFID signaling functionality of the phone all depend on a single, physical RFID chip that would need to be replaced in order to output a different RFID signal.

Ex. 2004 at ¶90. The disclosure in Holloway of “incorporat[ing] the functionality of a number of different cards within the one mobile telephone” refers only to subdividing the memory for transactions that do not rely on the RFID chip and antenna, but instead rely on Holloway’s telephone capabilities. *See* Ex.1006 at 2:20-21 (“A positive result of a check may permit the user to undertake certain transactions telephonically, e.g. corresponding to a credit card payment or transferring a cash equivalent to a memory in the unit.”); 3:28-30 (“The short-range communication means may include a device with a memory which is connected to receive and/or send data via the telephone communication means. The memory may be divided into a plurality of separate secure areas.”); 10:4-6 (“If only telephonic communications are required, the RFID antenna 15 may be omitted, and the information stored in chip 16 may instead be stored in the memory within the mobile telephone 10.”).

A POSITA would have understood that Holloway’s statements about “incorporat [ing] the functionality of a number of different cards within the one mobile device” did not relate to any RFID signals, but instead related to sub-dividing the memory within Holloway’s telephone 10 for transactions that do not rely on the RFID chip and antenna. Ex. 2004 at ¶92. A POSITA would have understood that the cited passage does not suggest emulation. *Id.*

A POSITA would have understood that there is no teaching or suggestion in Holloway of incorporating the functionality of a number of different cards within

one mobile device that can be accessed or used via RFID signaling functionality, and in particular, via “RFID signals emulated by a mobile communications device without the use of a physical RFID transponder,” as required by all Challenged Claims. Ex. 2004 at ¶93.

Pitroda uses the term “select” in only one instance: “the client may 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.” Ex. 1007, 8:18-29. A POSITA would have understood that Pitroda does not teach or suggest a device with RFID signaling capabilities, let alone any capability to output emulated RFID signals without a physical RFID transponder, or any capability to emulate one or more RFID transponders within a mobile communication device. Ex. 2004 at ¶95.

The Petition has failed to show that Willgert, Mooney, Holloway, or Pitroda, alone or in combination, teach or suggests “RFID signals emulated by a mobile communications device without the use of a physical RFID transponder” as required by the claims. For this reason alone, the Petition has failed to carry its burden of demonstrating that the relied on references meet the limitations of all Challenged Claims.

2. No teaching or suggestion of “instruction[s]” to switch, as claimed

As described above in Section VIII.A.3, Challenged Claims 2-3, 5-6, 13, and 16-17, as properly construed, require “instruction[s]” to switch a transceiver/transmitter to the second state/section to transmit an emulated RFID signal. Because Willgert, Mooney, Holloway, and Pitroda, alone or in combination, fail to teach or suggest emulated RFID signals, they also fail to teach or suggest the claimed “second state,” the claimed “second signal processing section,” and the claimed switching and “instruction[s]” to transmit an emulated RFID signal. A POSITA would have understood that Willgert, Mooney, Holloway, and Pitroda, alone or in combination, do not teach or suggest the claimed “second state,” the claimed “second signal processing section,” and the claimed switching and “instruction[s].” Ex. 2004 at ¶96.

3. No teaching or suggestion of selection, as claimed

Challenged Claim 3 requires outputting the first RFID transponder data as an RFID transponder signal where the “first RFID transponder data comprises a selected one of a security key and an identifier.” Challenged Claim 4 requires “facilitating the user in selecting the first RFID transponder data from a plurality of RFID transponder data.” Challenged Claim 13 and 14, expressly or by dependency, each requires outputting “first RFID transponder data as said RFID transponder

signals ” where the “first RFID transponder data comprises a selected one of a security key and an identifier.” Challenged Claim 15 requires “to facilitate the user in selecting the first RFID transponder data from a plurality of RFID transponder data.”

A POSITA would have understood that all Challenged Claims, as properly construed, require RFID signals emulated by a mobile communications device without the use of a physical RFID transponder. Ex. 2004 at ¶97. Accordingly, as properly construed, Challenged Claims 3-4, 13-14, and 15 require selection of RFID transponder data that is transmitted by an emulated RFID signal. *Id.*

Because Willgert, Mooney, Holloway, and Pitroda, alone or in combination, fail to teach or suggest emulated RFID signals, a POSITA would have understood that they also do not teach or suggest any selection of transponder data to be transmitted by an emulated RFID signal. Ex. 2004 at ¶97. The Petition has failed to show that Willgert, Mooney, Holloway, or Pitroda, alone or in combination, teaches or suggests any selection of RFID transponder data to be transmitted as an emulated RFID signal, as claimed. For this reason, the Petition has failed to carry its burden of demonstrating that Willgert, Mooney, Holloway, or Pitroda, alone or in combination, meet all the limitations of Challenged Claims 3-4, 13-14, and 15.

4. No teaching or suggestion of “voice call signals”

All Challenged Claims require “voice call signals” that are carried over the network of a wireless network service provider. Ex. 2004 at ¶98. In Ground 2, the Petition does not rely upon any arguments other than its Ground 1A arguments to try and satisfy the “voice call signals” limitations of all Challenged Claims. Pet. at 76-87. Ground 2, therefore, does not remedy the deficiencies of Ground 1A with respect to “voice call signals.” Ex. 2004 at ¶98.

For the reasons explained above in Section VIII.A.1, the Petition has failed to show that the Willgert-Mooney-Holloway-Pitroda combination teaches or suggests “voice call signals” as required by the claims. For this reason alone, the Petition has failed to carry its burden of demonstrating that the relied on references meet the limitations of all Challenged Claims.

IX. Conclusion

The Petition has failed to carry its burden to demonstrate the unpatentability of the Challenged Claims.

Dated: June 4, 2025

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 CFR § 42.24(d), the undersigned certifies that this brief complies with the type-volume limitations of 37 CFR §§ 42.24(b)(2), 42.24(a)(1)(i). This brief contains 10,612 words as calculated by the “Word Count” feature of Microsoft Word, the word processing program used to create it, which is less than the 14,000 word count limit.

Dated: June 4, 2025

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.205(b), the undersigned hereby certifies that on June 4, 2025, a complete and entire copy of the foregoing **Patent Owner's Response** and Exhibit Nos. 2005-2008 were served on Petitioner by filing through the Patent Trial and Appeal Case Tracking System (P-TACTS) and via email to IPR50095-0181IP1@fr.com, as authorized in Petitioner's mandatory notices.

Dated: June 4, 2025

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